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LOWER RIO GRANDE RIVER WATER SECURITY & H.R. 2990, TO AMEND THE LOWER RIO GRANDE VALLEY WATER RESOURCES CONSERVATION AND IMPROVEMENT ACT OF 2000

FIELD HEARING

BEFORE THE

SUBCOMMITTEE ON WATER AND POWER

OF THE

COMMITTEE ON RESOURCES
U.S. HOUSE OF REPRESENTATIVES

ONE HUNDRED SEVENTH CONGRESS

SECOND SESSION

May 3, 2002 in Brownsville, Texas

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OVERSIGHT HEARING ON THE LOWER RIO GRANDE RIVER WATER SECURITY—OPPORTUNITIES AND CHALLENGES; AND LEGISLATIVE HEARING ON H.R. 2990, TO AMEND THE LOWER RIO GRANDE VALLEY WATER RESOURCES CONSERVATION AND IMPROVEMENT ACT OF 2000 TO AUTHORIZE ADDITIONAL PROJECTS UNDER THAT ACT, AND FOR OTHER PURPOSES.

Friday, May 3, 2002
U.S. House of Representatives
Subcommittee on Water and Power
Committee on Resources
Brownsville, Texas

The Subcommittee met, pursuant to call, at 10 a.m.,at the University of Texas at Brownsville and Texas Southmost College, Science, Engineering and Technology Building—Lecture Hall, 80 Fort Brown, Brownsville, Texas, Hon. Kenneth Calvert presiding.

STATEMENT OF THE HON. KEN CALVERT, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF CALIFORNIA

Mr. CALVERT. Good morning. The Subcommittee on Water and Power will come to order. Before I get into this hearing, this is an official hearing of the U.S. House of Representatives, as opposed to a townhall meeting. And, by definition, we have certain rules in the Committee of the House of Representatives. So I just wanted to read these out loud so everyone would understand.

We would ask that there be no applause or demonstration in regard to testimony as this hearing moves forward. It's important that we respect the quorum of the House so we can respectfully move this hearing forward. With that, this is the oversight hearing on the Lower Rio Grande River Water Security Opportunities and Challenges and H.R. 2990, to amend the Lower Rio Grande Valley Water Resources Conservation and Improvement Act of 2000 to authorize additional projects under that Act, and for other purposes.

There isn't a day that goes by that you don't read or hear about a drought or drought-like condition throughout this nation. In fact, I've been through a number of states throughout the United States—Washington State, Oregon State, the State of Utah, Colo-

rado, Texas today, Arizona, Nevada—and this area, though, has certainly suffered particularly with this drought that you are experiencing.

Participation levels and water supplies all across the United States are at record low levels, with Governors across the country declaring drought emergencies. In one case the Governor declared a drought emergency saying that some areas are facing the driest conditions in a century.

Reservoirs on the eastern seaboard are at their lowest level in years, and water rations and restrictions are likely for this summer. The economic impacts of drought are felt by all.

The hearing today addresses H.R. 2990, which would amend public law 106-576, signed by the President in the year 2000, and issues surrounding the need for legislation. I ask the members and the witnesses to focus on the challenges at hand, water supply problems along the lower Rio Grande Valley.

The United States needs to work with Mexico to resolve the current water dispute on the Rio Grande River. Of that, there is no doubt. That's for President Bush and Presidente Fox to resolve. We're not here to negotiate treaties between countries, but we certainly will be listening to witnesses stressing the problems with Mexico upholding their treaty obligations and opportunities for us to transmit a message back to Washington, to hopefully the Administration, and to the Government of Mexico.

I'd like to take an opportunity to excuse Congressman Hinojosa who had, unfortunately, a family emergency and will not be able to attend today. And I also wanted to express for my friend Henry Bonilla, who I've talked to on many occasions about this emergency, who, unfortunately, was unable to be here, and later I think he has a statement he wants to be entered into the record.

[The prepared statement of Mr. Calvert follows:]

Statement of The Honorable Ken Calvert, Chairman, Subcommittee on Water and Power

There isn't a day that goes by that you don't read or hear about a drought or drought-like conditions throughout our nation as well as areas around the world. Precipitation levels and water supplies all across the U.S. are at record low levels with Governors across the country declaring drought emergencies. In one case, a governor declared a drought emergency, saying some areas are facing the driest conditions in a century. Reservoirs on the Eastern Seaboard are at their lowest level in years with water rationing and restrictions likely for this summer. The economic impacts of drought are felt by all.

The hearing today addresses H.R. 2990 which would amend P.L. 106–576 signed by the President in the year 2000 and issues surrounding the need for this legislation. I ask the members and witnesses to focus on the challenges at hand—water supply problems along the Lower Rio Grande Valley. The United States government needs to work with Mexico to resolve the current water dispute on the Rio Grande River. Of that, there is no doubt, but that is for President Bush and Presidente Fox to resolve.

We are not here to negotiate treaties between countries. I look forward to hearing from the witnesses and I thank Mr. Ortiz for inviting me to his district.

Mr. CALVERT. I'd like to introduce Congresswoman Napolitano from my home State of California, a good friend who's been with me at many of these water hearings throughout the United States and has listened and attended very beautifully, who also sits on the

Subcommittee of Water and Power. And we appreciate your attendance here today.

Congressman Rodriguez from Texas—I should point out that Congresswoman Napolitano was born here in Brownsville, Texas and raised and went to high school here and moved away to California, but I'm sure her heart is still here in Brownsville, Texas.

Mrs. NAPOLITANO. It's from here.

Mr. CALVERT. Congressman Rodriguez from Texas, and Congressman Hinojosa from Texas. But, certainly, I would not be here if it wasn't for my good friend Solomon Ortiz. Solomon has been talking to me about the problems of the Rio Grande for a number of years and wanted me to get up here to firsthand listen to the problems that this Valley has experienced and what we need to help resolve those issues.

So, Solomon, I want to thank you for inviting me here and for your hospitality, and be certain that I will do everything possible to help, not only today, but in the future. And with that, we'd recognize an opening statement.

STATEMENT OF THE HON. SOLOMON P. ORTIZ, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF TEXAS

Mr. ORTIZ. Thank you, Mr. Chairman. I want to say that I really appreciate you taking the time from your busy schedule to be with us today. You are really one that understands the seriousness of this problem, and we thank Congresswoman Napolitano and my good friend Ciro Rodriguez.

Mr. Chairman, distinguished Committee members, and colleagues, we thank you for taking time from your busy schedule to hold this important water hearing in South Texas. I appreciate the Subcommittee on Water and Power coming to Brownsville, Texas at a crucial time when we are experiencing unparalleled problems with extraordinary consequences that we're facing today. I also would like to thank the University of Texas at Brownsville for holding these hearings.

Today we're going to explore the opportunities and challenges our border region faces given an inadequate water supply. This is a difficult conversation for us, frankly, because we're speaking critically of our friends and neighbors. We have a strong relationship with our friends in Mexico, and our friendship is longstanding. You tell the painful truth to your friends. That is what we will do today, to be honest with our friends. Friends care, particularly friends who are signatories to an international treaty.

While we continue to push for compliance for the water owed to the area under the 1944 Water Treaty, we must also address other conservation measures and options. H.R. 2990, the other component to this hearing, will implement water conservation measures considered in the development of the region and portion of the State of Texas water plan. And, of course, our sincere hope that Mexico complies with the treaty plays a big role in the recovery of our border area.

While the border region continues to experience extreme drought conditions, Mexico has made little effort to deliver the water owed to the United States under the 1944 Water Treaty, which is extremely, extremely frustrating.

For 5 years we have pressed the highest levels of government to work together on a plan to get Mexico to deliver the necessary water. Recently, my good friend, Congressman Bonilla, and I, in the Agriculture Appropriations Bill of 2002, asked the Department of Agriculture to estimate the value of the annual loss of United States Agriculture production due to the deficit in Mexican water deliveries.

Early this week I was extremely disappointed when I received this report, which stated that the Department of Agriculture was unable to quantify such losses. I would like to submit this report for the record, and alongside that, I would like to also submit to the record a Texas A&M study by Dr. John Robinson, who is here today. His report extensively details a loss of about $1 billion in the last 2 years to our economy.

His conclusions are based on a formula associated with an acre foot of water, 1.5 million of which have not been delivered to the United States.

While our farmers and the region as a whole continue to suffer devastating economic losses, there is significant data showing that the Rio Conchos water is not being released into the Rio Grande. I would like to submit photos of satellite images which show the increased use of irrigation water in the Chihuahua area of Mexico. These images depict Mexico's increasing production of crops as well as the storage capacity in the area reservoirs.

The economic viability likelihood of South Texas depends on water that Mexico continues to hold and on conservation of the water we do have. We need to continue to press the Federal Government to work with us on the water conservation projects currently outlined in H.R. 2990.

I look forward to listening to all of our witnesses today as we work in a joint effort to ensure both water compliances as well as adequate water supply. We want to do all this in a spirit of cooperation and understanding with our friends in Mexico.

Chairman, I thank you again for this historic opportunity, and I know that we have some very qualified expert witnesses today, and I hope that all of us in this room can learn from the statements that we will be listening to in the next few minutes. Thank you.

[The prepared statement of Mr. Ortiz follows:]

Statement of The Honorable Solomon P. Ortiz, a Representative in Congress from the State of Texas

Mr. Chairman, distinguished committee members, and colleagues, thank you for taking time from your busy schedules to hold this important water hearing in South Texas.

I appreciate the Subcommittee on Water and Power coming to Brownsville, Texas, at a crucial time when we are experiencing unparalleled problems with extraordinary consequences.

I also would like to thank the University of Texas at Brownsville for hosting this hearing.

Today we will explore the opportunities and challenges our border region faces given an inadequate water supply.

This is a difficult conversation for us to have because we are speaking critically of our friends and neighbors.

We have a strong relationship with our friends in Mexico, and our friendship is longstanding.

You tell the painful truth to your friends; you do not sugar-coat it.

That is what we will do today, be honest with our friends.

Friends share; particularly friends who are signatories to international treaties.

While we continue to push for compliance of the water owed to the area under the 1944 water treaty, we must also address other conservation measures and options.

H.R. 2990, the other component to this hearing, will implement water conservation measures considered in the development of the Region M portion of the state of Texas water plan.

The Achilles heel of our plan is that Mexico's compliance with the treaty plays a big role in the recovery of our border area.

While the border region continues to experience extreme drought conditions, Mexico has made precious little effort to deliver the water owed to the United States under the 1944 water treaty, which is extremely frustrating.

For five years, we have pressed the highest levels of government to work together on a plan to get Mexico to deliver the necessary water.

Recently, my good friend Congressman Bonilla and I, in the Agriculture Appropriations Bill of 2002, asked the Department of Agriculture to estimate the value of the annual loss of U.S. agricultural production due to the deficit in Mexican water deliveries.

Early this week, I was extremely disappointed when I received this report, which stated that the Department of Agriculture was unable to quantify such losses.

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While our farmers—and the region as a whole—continue to suffer devastating economic losses, there is significant data showing that the Rio Conchos water is not being released into the Rio Grande.

I would like to submit photos of satellite imagery which show the increased use of irrigation water in the Chihuahua area of Mexico.

These images depict Mexico's increase in production of crops as well as the storage capacity in the area reservoirs.

The economic viability and livelihood of South Texas depends on the water that Mexico continues to hold—and on conservation of the water we do have.

We need to continue to press the federal government to work with us on the water conservation projects currently outlined in H.R. 2990.

I look forward to listening to all of our witnesses today as we work in a collaborative effort to ensure both water compliance as well as an adequate water supply.

We want to do all this in a spirit of cooperation and understanding with our friends in Mexico.

Mr. Chairman, thank you again for this historic opportunity.

Mr. CALVERT. I thank the gentleman for his opening statement.

Mr. ORTIZ. I would like to include the statement of my good friend, Mr. Hinojosa for the record. He couldn't make it. He had a family emergency, and I would like to introduce it.

Mr. CALVERT. Without objection, the statement of Mr. Hinojosa will be entered into the record and also the reports and photos that was mentioned in the gentleman's opening statement will be entered into the record.

[The prepared statement of Mr. Hinojosa follows:]

Statement of The Honorable Ruben Hinojosa, a Representative in Congress from the State of Texas

Thank you Mr. Chairman, and I join my South Texas Colleagues in welcoming the Water and Power Subcommittee to the Rio Grande Valley!

Let me begin by commending you for holding this field hearing here today. Water security is one of the most important issues faced by the people of South Texas, and you have clearly illustrated your dedication to addressing this issue by convening this important hearing. I thank you, and my constituents thank you, for all of your support.

Let me also thank your staff for all of their hard work and interest in this issue. The Subcommittee staff have been extremely helpful in our efforts and I give both you and your staff my most sincere appreciation.

Mr. Chairman, everyone here knows that water resources have posed a challenge to South Texas for years. However, this region has now come to a crisis situation. Our reservoirs are dangerously low. Mexico now owes us more than 1.5 million acre-feet of water under the 1944 Treaty. This is water that we have every reason to believe is being used by Mexico for its own irrigation purposes.

Meanwhile, our farmers cannot even plant their crops because they do not know if they will have any water to irrigate them, and cannot afford to waste the seed. As a result, we are in jeopardy of seeing the largest number of farmers ever leave the business this year.

The drought does not only affect farmers, however. Agriculture is a fundamental part of the South Texas economy, and the devastating effects of the drought upon our farmers are rippling throughout the entire economy. Economists have estimated that the water shortage has cost the Texas economy almost one billion dollars in the last ten years, and costs are now mounting at a pace of up to $400 million annually.

Mr. Chairman, the bottom line is that the water shortage has cost our area thousands of jobs and millions of dollars. Given our chronic double digit unemployment rate, these are simply jobs that we cannot afford to lose.

Furthermore, our agricultural and economic losses are not the only areas in which the drought has had a serious negative effect; the environmental impacts have been harmful as well. The Rio Grande River no longer flows into the Gulf of Mexico, which has adversely impacted a number of economically and ecologically important marine species.

In written testimony, Mr. David R. Blankenship of the Texas Parks and Wildlife Department outlines the manner in which the loss of habitat resulting from the drought is disturbing to the marine ecosystems of South Texas. I ask unanimous consent that his testimony be entered into the record.

Mr. Chairman, it is quite clear that the drought, compounded by Mexico's refusal to comply with the terms of the 1944 Water Treaty, is having a devastating effect upon all aspects of our community. While we must certainly find a way to press Mexico to deliver the water that it owes us, we must also be more efficient in transporting what little water we have. The legislation before the Subcommittee today, H.R. 2990, will go a long way towards helping us modernize our antiquated water delivery systems.

Currently, we lose up to 25% of our water to evaporation and seepage. Our legislation would allow the Bureau of Reclamation to conduct infrastructure improvement projects that would significantly improve conservation of our scarce water resources. I am grateful that the Subcommittee is acting on this important legislation.

Let me close by once again thanking the Subcommittee and the witnesses for their dedication to this issue. I am confident that with the continued increase in attention at both the federal and state levels, we will be able to find long-term solutions to the water security challenges faced by our region.

Thank you, and I yield back the balance of my time.

Mr. CALVERT. Is there additional opening statements?

Mr. Rodriguez.

STATEMENT OF THE HON. CIRO D. RODRIGUEZ, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF TEXAS

Mr. RODRIGUEZ. Thank you. First of all, Mr. Chairman, let me take this opportunity to thank you because I know that we would not be able to be having this hearing without your help and your assistance. So I want to personally thank you for coming down here, and I know that—we call him our dean—Congressman Ortiz, without his help and assistance and his efforts, we wouldn't be able to have this. So I want to thank both of you.

I personally have the distinction also of representing both Starr and Zapata at this time, and we have been devastated with the tourism around Zapata and the Falcon Dam and the situation that we find ourselves in, and it's an issue that as time goes on, unless

we begin to deal with it now, it's only going to get worse. So it behooves us to get on this as soon as possible and start dealing with it.

I know that in the last 5 years since I've been a Congressman, it's an issue that has come up time and time again. It's an issue that we have brought in before two administrations, as well as the third administration and President Fox, and we haven't been able to—we've been—we have received promises, but we haven't been able to get anything done.

So we're hoping that as we hear testimony—and I would ask that if there is anyone that has any suggestions or recommendations as they make their testimony, we're willing to look at that and see what approaches might be the most appropriate to take.

But I want to personally thank you for coming out here. I know how difficult it is to go to other states and other regions of the country, so I want to personally thank you and also express my sincere thanks to Congresswoman Napolitano coming all the way from California and being here with us. I know that Congressman Bonilla, who represents the region also, as well as Congressman Hinojosa, would be here if they could, but I know they have other emergencies that they couldn't be here. So I want to thank you personally.

Mr. CALVERT. I thank the gentleman. Congresswoman Napolitano.

STATEMENT OF THE HON. GRACE F. NAPOLITANO, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF CALIFORNIA

Mrs. NAPOLITANO. Thank you, Mr. Chair, and, again, I echo the remarks of my colleagues about your willingness to come to a district that has been very impacted by the lack of water. We just need to move on with this hearing, but I certainly want to thank the people who took time off to come and help us understand the situation better.

But may I remind you that while this Committee and your representatives have been asking for action for years, it may go beyond that. You may need to talk to not only your Federal representatives, which you already have here—you know, he's been the one advocating for movement on this—but also your President because he is your very own. And he should be able to get the President of Mexico to sit down and resolve the issue with a Governor who doesn't want to come to the table. It may come to that, rather than the long strained affair of going through judicial courts. And I hope it won't come to that because we don't have time for that.

So I'm willing to move whatever direction we can with you, Mr. Chair, your willingness to be able to be open to the dialog that's going to ensue, and let's hope that we can bring this to a higher level priority so that we can help this area recover and help this economy move forward and help the farmers. Thank you very much for having us.

Mr. CALVERT. Thank you. Now we're going to introduce our first panel. The first panel includes Maryanne Bach, the Regional Director of the Great Plains Region, Bureau of Reclamation, United

States Department of Interior. Please step forward and take your seat at the dais. Jim Derham, the Deputy Assistant Secretary, Bureau of Western Hemisphere Affairs, United States Department of State. Carlos Marin, the principal engineer of the United States Section, International Boundary and Water Commission.

Mr. CALVERT. Let me remind the witnesses that, under our Committee rules, they limit their oral statements to 5 minutes. We'll have in that—so if you have any additional statement that you would like to have entered into the record, we will do so. We would like you to limit that so we'll have time to ask questions from the panel.

And with that, I would recognize Maryanne Bach, on behalf of the Administration, to testify. You may begin.

STATEMENT OF MARYANNE BACH, REGIONAL DIRECTOR, GREAT PLAINS REGION, BUREAU OF RECLAMATION, UNITED STATES DEPARTMENT OF THE INTERIOR

Ms. BACH. Thank you, Mr. Chairman, and members of the Subcommittee and the Committee and the U.S. House of Representatives. Thank you for this opportunity to testify this morning. I do request that my formal prepared testimony be entered into the record in full.

Mr. CALVERT. Without objection, so ordered.

Ms. BACH. And I'd like to abbreviate my comments from that written testimony. The Department applauds the efforts to improve and encourage water efficiency and to responsibly manage water supplies in the border. The Administration, the Department of the Interior, and the Bureau of Reclamation share the concern of this Committee, the Subcommittee, the State of Texas, and the water users over the severe water shortages that exist in this area.

The Administration supports the goals to amplify and make more efficient use of the current water supply. The Administration is committed to working with this Subcommittee to effectively address these water supply concerns.

The Department of the Interior testified in general support for the previous legislation that did become public law 106-576. H.R. 2990, which does amend that prior statute, appears to maintain the intent of the existing law while authorizing additional projects and increasing the funding ceilings. In the spirit of working with the Committee and recognizing the goals of the intention of the bill, the Administration looks forward to working with the Subcommittee to address some provisions of the bill.

We are aware that this is an area that has experienced a drought that began nearly a decade ago, putting a great strain on water delivery systems and causing farmers to change crop patterns, to stop farming altogether in some cases.

The Department's involvement in the Lower Rio Grande Irrigation Districts dates back almost 50 years when reclamation began cooperative efforts to modernize facilities and improve water efficiency.

Since enactment of the bill, reclamation has been working successfully and cooperatively with local entities in the Lower Rio Grande, the Texas Water Development Board, and the Texas Agricultural Extension Service of Texas A&M University on its imple-

mentation. And, in fact, through the Great Plains Region we were able to implement the criteria that are called for in the legislation and did so within 6 months after enactment of the legislation. That was public law 106-576.

Reclamation has worked closely with districts that were involved in the first four authorizations. Funding for reclamation to begin preparation of a project plan and report has been advanced from one of the districts, and we would note that in order to implement the legislation that is—the proposal that is in front of you, that we would also need additional appropriations for that assistance.

We applaud the many efforts taken by the universities, the state and local governments, and other Federal agencies. We pledge to continue the Department's coordination and cooperation as we all work together to conserve the water resources that are in such short supply.

Mr. Chairman and members of the Subcommittee and U.S. Congress, we are very concerned about the effects of the water shortage in the Lower Rio Grande Valley, and we recognize the importance of improving the efficiency of water use and delivery in this part of the country, especially in light of the current drought conditions.

Reclamation would be happy to work with Representative Ortiz, Hinojosa, and the Chairman of the Subcommittee, and to address the water supply problems as well as what reclamation can bring to the table. Thank you for the opportunity to testify today.

Mr. CALVERT. I thank the gentlelady.

[The prepared statement of Ms. Bach follows:]

Statement of Maryanne Bach, Regional Director, Great Plains Region, Bureau of Reclamation, U.S. Department of the Interior

Thank you for the opportunity to present the Department's views on H.R. 2990, which amends P.L. 106–576, the Lower Rio Grande Valley Water Resources Conservation and Improvement Act of 2000 and to discuss water issues in the Lower Rio Grande Valley.

H.R. 2990 aims to provide areas in Texas that are facing a drought, with some important water saving measures. The Department lauds efforts to improve and encourage water efficiency, and to responsibly manage water supplies in the border region. The Administration, the Department of the Interior and the Bureau of Reclamation (Reclamation) share the concern of the Committee, the State of Texas, and the water users over the severe water shortages that exist in this area. The Administration supports the goals to amplify and make more efficient use of the current water supply. The Administration is committed to working with the Committee to effectively address these water supply concerns.

H.R. 2990 would amend P.L. 106–576 by authorizing 15 additional projects in West Texas and in the Lower Rio Grande Valley of Texas. H.R. 2990 would increase the authorization for report preparation to $8,000,000, institute a 50% cap on federal report preparation costs, and increase the authorization for project funding to $47,000,000.

The Department of the Interior testified in general support (with some suggested revisions) of the legislation that became P.L. 106–576. H.R. 2990 appears to maintain the intent of the existing law while authorizing additional projects and increasing the funding ceilings. However, given the numerous other demands on Reclamation's budget and the number of already authorized but unfunded projects, we have concerns about adding additional projects to Reclamation's workload at this time. We also have concerns over the lack of Administration review in the process for projects in this bill. It is important to note that appropriations will be needed in order to implement the original Act and any new authorizations.

We are aware that this area is experiencing a drought that began nearly a decade ago, putting a great strain on water delivery systems and causing farmers to change cropping patterns or stop farming altogether. During that time, the area has re-

ceived only a small portion of the precipitation that would normally occur. Amistad and Falcon Reservoirs, international storage dams operated by the International Boundary and Water Commission (IBWC) along the Lower Rio Grande, remain at record low levels. Further upstream, the Bureau of Reclamation reservoirs of the Rio Grande Project in southern New Mexico (Elephant Butte and Caballo) are also at their lowest levels since 1982. Without a significant above average spring snowmelt runoff in 2002, a curtailment in supply to water users in U.S. and Mexico will occur.

On a frequent basis, we coordinate with the U.S. Section of the IBWC. We recognize that the U.S. IBWC has responsibility for monitoring water deliveries, treaty compliance and water availability along the international border. We defer to the witnesses from the State Department and the IBWC as to any comment on issues that relate to the treaty and water availability along the international border.

Reclamation Background in the Lower Rio Grande

The Department's involvement with the Lower Rio Grande irrigation districts dates back almost 50 years when Reclamation began cooperative efforts to modernize facilities and improve water use efficiency. Beginning in 1954, investigations identified the need for rehabilitation of existing distribution systems and construction of main drain outlets for the La Feria and Mercedes Districts. Public Laws 85–370 and 86–357 authorized the rehabilitation projects for La Feria and Mercedes districts respectively. Rehabilitation of the diversion, distribution, and drainage systems were accomplished through contracts among the local entities and Reclamation. Both the La Feria and Mercedes districts have paid out their repayment obligation associated with their projects and Reclamation is currently in the process of returning title to the La Feria lands conveyed to the United States as part of their contractual obligation. In addition, Reclamation entered into contracts with numerous irrigation districts in Harlingen, Hidalgo and Cameron counties pursuant to the Small Reclamation Projects Act of 1956. All contracts are now paid out, with Donna Irrigation District being the most recent to fulfill its repayment obligation in 2001.

Through the years, Reclamation has also prepared technical reports covering water conservation and basin studies to identify specific problems and needs of the area. For example, in September of 2000, Reclamation sponsored a Water Conservation Field Services workshop in Weslaco, Texas to present current information and technology updates to local irrigation districts regarding water measurements, management, and conservation.

P.L. 106–576

In 2000, this subcommittee held a hearing, at which we testified, on H.R. 2988, the Lower Rio Grande Valley Water Resources Conservation and Improvement Act, whose Senate companion bill, S. 1761, became P.L. 106–576 in December of that year.

This legislation was an effort to provide some important water saving measures to an area of Texas that had suffered from drought. Briefly, the law directed the Secretary, acting through the Commissioner of Reclamation, to undertake a program, in cooperation with the State of Texas, water users and other non–Federal entities, to investigate and identify conservation and efficiency improvement opportunities. This was to include review of studies or planning reports prepared outside of Reclamation and the evaluation of alternatives such as lining irrigation canals and increasing the use of pipelines and other water delivery facilities.

Within six months of enactment, the Secretary was to develop and publish a set of criteria to determine which projects would qualify and have the highest priority for financing. P.L. 106–576 provided certain minimum criteria and required the Secretary to make a determination of whether the project meets the criteria within a year of submittal of a request. The law also outlined the report, plan and cost-sharing requirements a project sponsor would need to fulfill to secure federal funding. The law authorized four projects and $10,000,000 for their construction if they later met these criteria and project requirements. The federal cost share was capped at 50% of any construction, with up to 40% to be contributed by the State. The remainder of the non-federal share was authorized to include in-kind contributions of goods and services, including funds previously spent on feasibility and engineering studies.

Since enactment of the bill, Reclamation has been working successfully and cooperatively with local entities in the Lower Rio Grande, the Texas Water Development Board, and the Texas Agricultural Extension Service of Texas A&M University on its implementation. As noted, a requirement of P.L. 106–576 was issuance of criteria by which Reclamation would administer the law and determine project eligibility for federal funding. Reclamation prepared and shared criteria with state, local

and other federal entities. The criteria were finalized in late June 2001, within the six month timeframe provided in P.L. 106–576.

Reclamation also has worked closely with those districts involved in the four authorized projects and with the Texas Water Development Board to address funding necessary to begin planning, designing, and reviewing the project plans and reports. Funding for Reclamation to begin preparation of a project plan and report has been advanced from one district. Three other districts are funding similar work by consultants. To date, three projects have been submitted to Reclamation. The authorized projects in the original bill have not been appropriated Federal funds.

Reclamation will continue its efforts to implement the Lower Rio Grande Water Resources Conservation and Improvement Act of 2000 to help make the most efficient use possible of the available supply. Reclamation is also working with several entities in the Valley to field test various methods of controlling water hyacinth and hydrilla. These noxious plant species are spreading rapidly and are increasingly clogging irrigation district canals and intakes to pumping plants all of which greatly restrict the flow of water both within the irrigation systems and in the Rio Grande as well.

The Department's activities in the Lower Rio Grande Valley are important components of government service in the area, but they are only one part. We applaud the many efforts taken by universities, state and local governments, and other federal agencies. We pledge to continue the Department's coordination and cooperation as we all work together to conserve the water resources that are in such short supply.

H.R. 2990

Project Authorization: Under P.L. 106–576, projects would include on-farm activities to enhance water conservation, such as water application metering, concrete lining of canals and other irrigation system management improvements. The proposed legislation would continue these activities and also enable the Secretary to use cooperative agreements to work with the State of Texas, non–Federal entities, and institutions of higher education, to develop educational programs and establish on-farm training programs for state-of-the-art water application and conservation techniques. We are concerned that this bill, like the earlier bill, authorizes projects without first undergoing the Administration review required by Executive Order 12322.

Project Eligibility Requirements: In 2000, the Commissioner of Reclamation testified on the legislation that became P.L. 106–576, stating that funding and eligibility decisions should be made on the basis of the relative costs associated with water conservation opportunities. The amendments presented in H.R. 2990 adopt the criteria established by Reclamation under the 2000 legislation. The Department supports this approach, as it provides more certainty to applicants by ratifying Reclamation's standards in law.

One aspect of improving efficiency is ensuring that the improvements made provide the highest return. Reclamation's guidelines will assist in that. However, given that the authorization level is proposed to increase to $47 million, it also may be appropriate to analyze the projects (or sets of projects) in the context of the established Principles and Guidelines. A simplified approach to the analysis could possibly be used, such as a recent model for this area prepared by Texas A&M University as a potential tool for evaluating projects in the Lower Rio Grande Valley.

Funding and Cost Sharing: The cost sharing provisions adopted in P.L. 106–576 establish a 50 percent federal maximum for construction costs. H.R. 2990 would amend Section 4 (b) of P.L. 106–576 to stipulate that the 50 percent federal maximum be applied to total project costs (e.g. studies, designs, reviews, approvals, construction) rather than just construction. This change would simplify the application of cost sharing provisions between the federal and non-federal contributions for completing a project. The $47 million amount for construction is subject to further review when project reports are developed.

Conclusion

Mr. Chairman, we are very concerned about the effects of the water shortage in the Lower Rio Grande Valley and we recognize the importance of improving the efficiency of water use and delivery in this part of the country, especially in light of the current drought conditions. Reclamation would be happy to work with Representative Hinojosa and the Committee to continue to address the water supply problems.

Thank you for the opportunity to present the Department's views. I am pleased to answer any questions.

Mr. CALVERT. Jim Derham, the deputy assistant secretary of Western Hemisphere Affairs, United States Department of State, be recognized.

STATEMENT OF JIM DERHAM, DEPUTY ASSISTANT SECRETARY, BUREAU OF WESTERN HEMISPHERE AFFAIRS, UNITED STATES DEPARTMENT OF STATE

Mr. DERHAM. Thank you, Mr. Chairman. I believe we submitted a formal statement to the staff.

Mr. CALVERT. Your full statement will be entered into the record.

Mr. DERHAM. Thank you.

Mr. CALVERT. You may begin.

Mr. DERHAM. Mr. Chairman and member of the Committee, I am pleased to discuss our recent diplomatic efforts to obtain Mexican water deliveries pursuant to the 1944 treaty on the utilization of the waters of the Colorado, Tijuana, and of the Rio Grande.

This treaty governs the allocation between the United States and Mexico of the waters from those rivers. It has served for almost 60 years as an effective model of cooperation between nations sharing a common border and a common resource in a manner that has been beneficial to both nations.

Today our overall relationship with Mexico is strong. Both of our countries are committed to cooperative efforts across a broad range of activities. The strong relationship with Mexico is integral to the well-being and security of the United States. Our bilateral relationship is grounded, in increasing measure, in shared values and perspectives on the world.

However, today we see how increasing strains and competing demands on a finite resource, a shared resource, have put strains on our relationship. The Department of State would have not been invited to testify today if we did not have a serious problem with Mexico on water. And we believe Mexico must take additional measures to make water available to the United States in accordance with the 1944 treaty.

Under this treaty, Mexico must delivery Rio Grande water to the United States from six of its tributary rivers in no less than an average annual amount of 350,000 acre feet in consecutive 5-year cycles. In situations of extraordinary drought, any deficiencies existing at the end of a 5-year cycle must be made up in the following 5-year cycle.

In 1969 the United States and Mexico agreed in IBWC Minute 234 that any deficit in a 5-year cycle must be made up in the following 5-year cycle, together with any quantity of water required to avoid a deficiency in that cycle.

Mexico ended the prior water accounting cycle, the one that ended in 1997, with an unprecedented deficit of over 1 million acre feet. Mexico has claimed it was unable to provide more water due to extraordinary drought. The term "extraordinary drought" is not defined under the treaty, nor do the two governments have an agreed-upon interpretation of that term.

Deliveries in the current cycle are also lagging far behind what is called for under the treaty. Unless significant water deliveries ensue, Mexico could end the current cycle with a cumulative deficit of almost 1.7 million acre feet of water owed to the United States.

This poses a very difficult situation for our two countries. It is a fundamental tenet of treaty law that the parties must respect the obligations arising under treaties and implement those obligations in good faith.

We believe that, in accordance with Minute 234, Mexico must cover the deficit by September 30th of this year and that the current cycle obligation is due at the same time, although as a practical matter, Mexico may not be able to do so.

Since this issue was brought to our attention, the Department of State has been actively supporting the IBWC's efforts. The U.S. And Mexican government entrusted the IBWC with application of the treaty and with the settlement of any disputes that arise under it. The IBWC is the appropriate forum for developing specific plans for water delivery schedules due to its technical expertise.

The Department of State's role has been to negotiate, mediate, and prod Mexico on this issue in both Washington and Mexico City. The Department and our embassy have done that, and Mexico has partially responded. For the past two water cycle years, Mexico has delivered more water than the annual average of 350,000 acre feet required under the 1944 treaty. This effort was made in what was some of the driest years of the past 10 years.

The Department of State has also put this matter at the top of the agenda for the last session of the U.S./Mexico Binational Commission Committee meeting convened in September of 2001. We raised it in the Border Affairs Working Group, with the participation of Secretary of State Powell and Mexican Foreign Secretary Castaneda.

Our Ambassador to Mexico City, Jeff Davidow, has worked particularly hard to focus the Mexican government's attention on the need to make greater progress. The Secretary of State has held lengthy discussions on this issue with the Mexican Foreign Secretary.

No less than three other U.S. Cabinet officials, Secretaries O'Neill, Norton, and Veneman, have urged Mexico to make their immediate water deliveries in conversations they have held with their counterparts in the last few months.

The concern and urgency about this issue is shared by the President. President Bush has repeatedly raised the problem with President Fox. On multiple occasions President Bush has impressed upon President Fox the need for Mexico to do more to meet its commitments.

It was President Bush's efforts in Guanajuato at his first meeting with President Fox that led to the conclusion of Minute 307 last March. This effort at partial fulfillment under the treaty represented a good faith effort by Mexico. It is unfortunate this positive first step was not followed up, and to date Mexico has failed to comply with the terms of 307, not only with respect to water deliveries for the past year, but also to the commitment to develop a schedule of deliveries for this year.

President Bush again raised the water problem with President Fox in strong terms in past March in Monterrey. Following that meeting, National Security Advisor Rice contacted the Mexican Under Secretary of Foreign Relations, Enrique Berruga, and

stressed the need for immediate water for the benefit of Texas farmers.

In response, the Under Secretary expects to come to Washington soon. Recognizing the urgency of this problem for Texas farmers, we intend to again stress to Mexico the critical need to redress this matter. We believe we must work together for the mutual benefit of both of our countries. Thank you for the opportunity to testify.

Mr. CALVERT. I thank the gentleman.

[The prepared statement of Mr. Derham follows:]

Statement of James M. Derham, Deputy Assistant Secretary for Western Hemisphere Affairs, U.S. Department of State

Mr. Chairman and Members of the Committee, I am pleased to have the opportunity to discuss with you today recent diplomatic efforts of the United States Government to obtain Mexican water deliveries on the Lower Rio Grande pursuant to the 1944 Treaty between the United States and Mexico on the Utilization of the Waters of the Colorado and Tijuana Rivers and of the Rio Grande (1944 Water Treaty).

This treaty governs the allocation between the United States and Mexico of the waters from those specified rivers and tributaries. It has served for almost 60 years as an effective model of cooperation between nations sharing a common border and a common resource in a manner that is beneficial to both nations.

Today our over-all relationship with Mexico remains solid. Both of our countries are committed to furthering cooperative efforts across a broad range of activities. A strong relationship with Mexico is integral to the well-being and security of the United States. Our bilateral relationship with Mexico is grounded, in increasing measure, in shared values and perspectives on the world.

However, today we see how increasing strains and competing demands on a finite resource a shared resource have put strains on our relationship. We would not have been invited to testify before you today if we did not have a serious problem with Mexico on water. It is undeniable that this region and its neighbors across the border have suffered from prolonged drought. Nonetheless, we believe Mexico must take additional measures to make water available to the United States in accordance with the 1944 Waters Treaty.

Under this treaty, Mexico has an obligation to deliver to the United States one-third of the flow reaching the main channel of the Rio Grande from six Mexican tributary rivers. The treaty mandates this delivery be not less as an average amount in cycles of five consecutive years than 350,000 acre-feet of water annually. In situations of extraordinary drought or serious accident to the hydraulic systems on the measured Mexican tributaries, any deficiencies in water deliveries existing at the end of a five-year cycle are to be made up in the following five-year cycle.

In 1969 the United States and Mexico agreed in IBWC Minute 234 that in the event of a deficit in a five-year cycle, the deficit must be made up in the following five-year cycle, together with any quantity of water that is required to avoid a deficiency in that cycle.

Mexico ended the 1992–1997 water accounting cycle with an unprecedented deficit of over one million acre-feet of water. Mexico has claimed that it was unable to provide more water in the 1992–1997 period due to extraordinary drought. The term "extraordinary drought" is not defined under the treaty, nor do the two governments have an agreed upon interpretation of that term. Deliveries in the current water accounting cycle, i.e. from 1997–2002, are also lagging far behind what is called for under the treaty. Unless significant water deliveries ensue, Mexico could end this water accounting cycle with a cumulative deficit of almost 1.7 million acre-feet of water owed to the United States.

This poses a very difficult situation for our two countries, and is simply not acceptable. It is a fundamental tenet of treaty law that the parties must respect their obligations arising under treaties and implement those obligations in good faith. It is also well established that disputes concerning a treaty should be settled in conformity with the terms of the treaty and principles of international law.

We believe that, in accordance with Minute 234, Mexico must cover the deficit by September 30, 2002, and that Mexico also has a current cycle obligation due at the same time, although as a practical matter it may not be possible for Mexico to do so. Mexico has stated that it has paid off the past cycle deficit and that due to the continued existence of extraordinary drought conditions, it has an additional five-years in which to cover the shortfall. However, the final water accounting of the waters Mexico has delivered in the 1997–2002 period and assignment of those waters

to either the past or current cycle has not taken place. Thus, whether or not Mexico has paid off the deficit and fulfilled the current cycle obligation will not be determined until after September 30, 2002.

Since this issue was brought to our attention in 2000, the Department of State has been actively supporting the efforts of the International Boundary and Water Commission (IBWC) to redress this issue. The U.S. and Mexican Governments entrusted the IBWC with the exercise of the rights and obligations of the two governments under this treaty and with the settlement of any disputes that arise under it. The IBWC is the appropriate forum for developing specific plans for water delivery schedules due to its technical expertise in the area of water management. Since 1997 this issue has been at the forefront of the IBWC agenda.

The Department of State's role has been to negotiate, mediate and to focus attention on this issue in both Washington and Mexico City. The Department and our Embassy in Mexico City have done that and Mexico has partially responded. For the past two water cycle years, Mexico, in what we interpret as a positive step, delivered more water than the annual average of 350,000 acre-feet required under the 1944 Waters Treaty. This effort was made in what was most likely some of the driest of the past ten years.

The Department of State has put this matter at the top of the agenda for the last session of the U.S.–Mexico Binational Commission Meeting that was convened in Washington in September of 2001 and highlighted its importance in the Border Affairs Working Group, with the participation of Secretary of State Colin Powell and Mexican Foreign Minister Jorge Castaneda. Once again we stressed the high importance of this issue to the United States Government. We urged Mexico to make more water available on the lower Rio Grande in order to make a good faith repayment on the debt and to avoid a deficit in the current cycle.

Our Ambassador in Mexico City, Jeffrey Davidow, has worked particularly hard to focus the Mexican Government's attention toward the need to make greater progress in this area. The Secretary of State has held lengthy discussions on this issue with the Mexican Foreign Minister. No less than three other United States cabinet officials have urged Mexico to make immediate water deliveries in conversations held with their Mexican counterparts in the last few months.

Everyone in this Administration is aware of the high priority and genuine concern President Bush has for this issue. Every meeting and every conversation President Bush has had with President Fox has been an opportunity to impress upon President Fox the need for Mexico to do more to meet its commitments. It was President Bush's efforts at his first meeting with President Fox at Guanajuato that led to the conclusion of Minute 307 last March. This effort at partial fulfillment of its obligation to the United States under the 1944 Waters Treaty represented a true good faith effort by Mexico. It is unfortunate that this positive first step, was not followed up, and that, to date, Mexico has failed to comply with the terms of

Minute 307, not only with respect to water deliveries for the past year, but also with respect to the commitment to develop a schedule of deliveries for this year by December 2001.

In all of our efforts, we have stressed that any plan to be developed must be coupled with a commitment to long-term solutions. We urged Mexico to work within the IBWC to develop a comprehensive solution to this problem and to develop a formula that would give the highest priority to honoring its treaty obligations to the United States. We recognize that measures to improve infrastructure and conserve water are a must on both sides of the border, as evidenced in the legislation you have come to consider. Water is too precious a commodity to waste.

When President Bush traveled to Monterrey in March, he again raised the water problem with President Fox in strong terms. Following the meeting, National Security Adviser Condoleezza Rice contacted the Mexican Under Secretary of State, Enrique Berruga, and stressed the need to have a commitment to make immediate water deliveries for the benefit of Texas farmers. In response, the Under Secretary has consulted with Mexican officials and expects to come to Washington soon. Recognizing the urgency of this problem for Texas farmers, we intend to meet with Under Secretary Berruga's delegation and again impress upon Mexico the critical need to redress this matter. We believe that neighbors can not be allowed to become estranged but must work together for the mutual benefit of both of their peoples.

Thank you for the opportunity to testify today. I would be pleased to respond to any question you or other members of the Committee may have.

Mr. CALVERT. Carlos Marin, the principal engineer, United States Section, International Boundary and Water Commission. You may begin your testimony.

STATEMENT OF CARLOS MARIN, THE PRINCIPAL ENGINEER OF THE UNITED STATES SECTION, INTERNATIONAL BOUNDARY AND WATER COMMISSION

Mr. MARIN. Thank you, Mr. Chairman. Mr. Chairman, I'd like to request that the written testimony be entered into the record.

Mr. CALVERT. Without objection, so ordered.

Mr. MARIN. Mr. Chairman and members of the Committee, I am Carlos Marin, principal engineer for the U.S. Section of the International Boundary and Water Commission. I am pleased to come before you today to present this testimony on behalf of Carlos M. Ramirez, commissioner for the U.S. Section, which is normally referred to as IBWC, concerning the deliveries of waters to the U.S. Section—United States under the 1944 Water Treaty.

The deficiency of these water deliveries by Mexico is a great concern to Commissioner Ramirez. He is aware of the hardship that the drought and the shortfalls of Mexico deliveries have had on the South Texas Region. He has given a top priority to the effort of the IBWC to arrive at a satisfactory water delivery plan for the short and long-term.

I have not—Mr. Derham here has covered the requirements of the 1994 treaty, and I will just skip that portion of my testimony here since that would be repetitive here.

The U.S. Section, though, continues to urge Mexico to provide water from Mexican allocation and insists that Mexico provide technical information concerning the conditions in the Rio Grande Basin in Mexico.

The IBWC conducted several technical meetings toward this end in 1997, '98, '99, 2000, and 2001, and continues even today. These meetings often included the participation of South Texas irrigators and officials from the State of Texas. Apparently those technical meetings—in those technical meetings the IBCW continues discussions aimed at arriving at a short and medium-term water delivery plan from Mexico water sources and for a long-term effort in assuring deliveries of the U.S. Allocation.

Mexico indicated that drought conditions and low storage in its reservoirs made it difficult to make the deliveries. The U.S. Section supports the Department of State or just Mexico to provide water to the United States from its treaty tributary reservoirs and other sources in order to deliver approximately 400,000 acre feet of water immediately to Texas users.

In early 2000 Mexico agreed to this request and subsequently transferred ownership to the United States of 188—138,000 acre feet in storage at the international reservoirs. Additionally, it agreed to assign the United States for a limited amount of time its share of water from the Rio Grande from unmeasured tributaries, water normally shared 50/50 between the two countries.

This action resulted in a delivery by Mexico during the 1999/2000 cycle year of approximately 400,000 acre feet. In late 2000 negotiations between the two sections of the IBWC focused on a plan for the 2000/2001 cycle year.

President Bush reinforced the need for Mexican water deliveries at his meeting with Mexican President Fox in early 2001. In response to President Bush's initiative, IBWC negotiated results in Minute 307 signed in March of 2001. The agreement provided a frame work of action for Mexico to deliver 600,000 acre feet during the 2000/2001 cycle year. The Minute also provided a framework for additional discussions for long-term solutions.

Unfortunately, Mexico deliveries under Minute 307 only reached 227,000 acre feet. Mexico urged—argued that low precipitation in the basin prevented it from reaching the required volume of 600,000 acre feet. The United States urged Mexico to release water from Mexican reservoirs to cover the shortfall with contingency plan provided for in Minute 307.

The United States also urged Mexico to arrive at a water delivery plan for the final year of the current accounting cycle and to develop understanding to target the United States allocation in the future.

Mexico continues to assert that drought and those storage conditions allow for the need to satisfy its own water needs, making it difficult to provide water. The United States Section continues to assert that with present storage and projected inflows into the Mexican reservoirs and reduced irrigation in Mexico, that there is sufficient water available in Mexico to deliver to the United States a partial fulfillment of its obligations.

The U.S. IBWC will continue to work actively on behalf of the U.S. Government and State of Texas, and we welcome your support for our efforts. Thank you for the opportunity to testify today. And I will be pleased to respond on behalf of Commissioner Ramirez to any questions that you or the other members of the Committee may have.

Mr. CALVERT. Thank you.

[The prepared statement of Mr. Ramirez follows:]

Statement of Carlos M. Ramirez, United States Commissioner, International Boundary and Water Commission

Mr. Chairman and Members of the Committee, I am pleased to come before you today to present this testimony concerning deliveries of waters by Mexico to the United States under the United States-Mexico Treaty for Utilization of Waters of the Colorado and Tijuana Rivers and of the Rio Grande, signed February 3, 1944 (1944 Water Treaty) and on the efforts made by the United States Section of the IBWC to obtain additional water deliveries from Mexico in fulfillment of its obligations to the United States under the 1944 Water Treaty.

Background

The IBWC is an international organization charged by the United States and Mexican Governments with the execution of the provisions of the 1944 Water Treaty and settlement of differences that may arise from such application. The IBWC is made up of a United States Section and a Mexican Section. The United States Section is an independent federal agency that operates under the foreign policy guidance of the Department of State.

The Treaty allocates to each country the waters of the Rio Grande from Fort Quitman, Texas to the Gulf of Mexico, a length of some 1,100 miles. The Treaty assigns to the IBWC the responsibility to jointly measure and account the waters allocated to each country. The IBWC is also responsible, pursuant to the 1944 Treaty, for the construction, and operation and maintenance of international storage dams (Amistad and Falcon Dams) that allow both countries to make the maximum use of their allotted waters. Amistad and Falcon Dams allow control and storage of waters from sources in the two countries, which can then be released for later use as

needed. The Lower Rio Grande Valley in Texas depends on these stored waters for irrigation and municipal and industrial uses.

Allocation of Waters

Under Article 4 of the 1944 Water Treaty, the United States is allotted all the waters from tributaries in the United States. Mexico is allotted all the waters from tributaries in Mexico below Falcon Dam. Both countries are allotted one-half of the flows in the main stem of the Rio Grande and from unmeasured tributaries not specifically allotted. Mexico is allotted two-thirds of the waters that arrive in the Rio Grande from six Mexican tributaries between Fort Quitman, Texas and Falcon Dam (treaty tributaries). The United States is allotted one-third of the flows that arrive in the Rio Grande from those treaty tributaries a minimum of 350,000 acre-feet as annual average in cycles of five years. Should a cycle of five years end in deficit for reasons of extraordinary drought or serious accident to the system, that deficit shall be made up in the next five year cycle. This provision was established because of the erratic nature of the flows in the Mexican tributaries. The treaty also considered this erratic nature of the flows when it authorized the IBWC to construct and operate and maintain the International Dams Amistad and Falcon.

Water Deliveries 1992–1997

During the period between October 3, 1992 and October 2, 1997, Mexico delivered to the United States 726,151 acre-feet of water towards fulfillment of its obligation under Article 4, Paragraph B of the 1944 Water Treaty. This resulted in a deficit of 1,023,849 acre-feet of water owed to the United States as of September 30, 1997.

Water Debt Coverage 1997–2000

In late 1997, the United States Section of the IBWC (U.S. Section) requested agreement with the Mexican Section of the IBWC on the volume in deficit and application of provisions in IBWC Minute No. 234 for coverage of the deficit with waters from Mexico's portion of the Treaty Tributaries and the transfer to United States ownership of Mexican-owned water in storage at the international Falcon and Amistad Reservoirs. Mexico provided the U.S. Section a debt payment proposal however in April 1999, the U.S. Section objected to the proposal and urged application of the Minute No. 234 provisions for debt coverage with Mexican waters and requested a technical meeting with the Mexican water authorities, in the context of recent agreements that Mexico provide more detailed information concerning conditions in the Treaty Tributary basins. During a technical meeting in 1999, Mexico informed that drought conditions had made it difficult for Mexico to provide the runoff and reiterated Mexico's intention to cover the deficit when excess flows became available. Mexico stated that Rio Conchos Basin reservoirs were at 26 percent of conservation capacity and that the reservoirs in the Salado Basin, the larger of the Treaty Tributary Basins was at 11 percent of storage capacity. Mexico reported lower than normal precipitation for the 1993 1998 period.

The U.S. Section requested more detailed information but observed in late 1999, that based upon the limited information Mexico had provided there appeared to be an opportunity for Mexico to operate its Treaty Tributary reservoirs in a manner that would allow application of provisions of Minute No. 234 relating to debt coverage with Mexican owned waters. Further, the U.S. Section observed that storage of Mexican owned waters at the international reservoirs was such that there was also an opportunity for Mexico to transfer ownership of some of those waters to the United States as provided in Minute No. 234. Finally, the U.S. Section observed that water deliveries in the current cycle (1997–2002) were significantly below the annual average of 350,000 acre-foot obligation and urged the operation of Mexico's Treaty Tributary reservoirs in a manner that targets the United States allotment. At technical meetings in early 2000, Mexico informed that the deficit could only be covered in the event of excess flows, but agreed to an emergency release of waters from the Rio Conchos to increase Mexican storage at the international dams where the waters could be transferred to United States ownership.

The U.S. Section in March 2000, reiterated its call for a good faith implementation plan comprised of immediate water releases from the Conchos River and parallel mid and longer term planning efforts designed to cover the deficit and to target the U.S. allocation in future years. In tandem with these efforts, the United States Department of State initiated a series of demarches with the Mexican Foreign Ministry in which it urged Mexico to honor its treaty obligations to the United States. In response, the Mexican Section in March 2000, agreed to transfer ownership of 137,821 acre-feet from international storage in Amistad and Falcon Reservoirs to the United States and to temporarily assign to U.S. ownership its 50 percent share of the unmeasured tributary flows from Mexico in the Rio Grande reach between Fort Quitman and Falcon Dam. These actions were intended to provide to the

United States the minimum annual average of 350,000 acre-feet and an additional volume, which the U.S. Section considered as a total target goal of 400,000 acre-feet for the water year of October 1, 1999 through September 30, 2000. This volume coincided with the request of Texas irrigators.

At the close of the third year of the present five-year accounting cycle, that is from October 1, 1997 September 30, 2000, Mexico had delivered a total of 407,087 acre-feet of water leaving a prior cycle deficit and the current cycle obligation of 1,381,362 acre-feet of water.

U.S. Allocation Target Framework Talks 2000–2001

In June 2001, the IBWC opened discussion concerning a framework that Mexico could adopt with respect to management of its treaty tributary reservoirs that would target the annual United States allotment as a high national priority. However, these discussions were deferred in order to develop a water delivery plan for the October 1, 2000 September 30, 2001 cycle year.

Minute No. 307 Water Deliveries

In August 2000, the U.S. Section urged the Mexican Section to release more waters from storage in Luis L. Leon Dam on the Conchos River and Venustiano Carranza Dam on the Salado River; resume technical discussions on watershed conditions; continue assignment of Mexico's allocation of the unmeasured tributary waters to the U.S.; and adopt a framework for Treaty Tributary reservoir operations that would target the annual obligation to the United States as a high national priority. Mexico agreed to release waters from Luis L. Leon Dam and Venustiano Carranza Dam, of which one-third would be allotted to the United States and agreed as well to the limited assignment of its portion of the unmeasured tributary waters to the United States. In the months that followed, the U.S. Section urged Mexico to commit to deliver 600,000 acre-feet of water to the United States between October 1, 2000 and September 30, 2001, i.e. the fourth year of the current cycle to cover the 350,000 acre-foot annual average and a good faith effort in repayment of the outstanding deficit. President Bush reinforced the need for Mexico to commit to making additional water deliveries at his meeting with Mexican President Vicente Fox on February 28, 2001 in Guanajuato, Mexico. In response to the President's initiative, IBWC negotiations resumed in Washington under the auspices of the Department of State. This resulted in the conclusion of IBWC Minute No. 307. Under Minute No. 307, Mexico and the United States agreed to a framework of actions by Mexico committed to ensure that 600,000 acre-feet of water would be provided to the United States by September 30, 2001, at the latest, based on runoff scenarios described in the agreement. Minute No. 307 also identified contingent sources of water should the runoff scenarios not produce the water envisioned. Under Minute No. 307 the United States and Mexico also agreed to continue discussions within the IBWC to arrive at additional measures concerning the prior cycle deficit and the current cycle obligation by December 2001. Finally, Minute No. 307 called for cooperation by the two Governments concerning drought management and sustainable management of the Rio Grande basin from Fort Quitman to Falcon Dam.

Mexico halted releases from Carranza dam before the volume to be delivered to the United States under Minute No. 307 was accomplished. Mexico stopped the releases because of alleged environmental impact resulting from low storage. Further, Mexico had overestimated the storage. Mexico also faced protests by its affected water users. Concurrently Mexico was providing to the U.S., flows for the unmeasured tributaries and treaty tributary. In July 2001, injunctions were filed in Mexican Federal courts preventing any further transfers of the unmeasured tributary waters to the U.S. The U.S. Section insisted that Mexico comply with the obligation assumed in Minute No. 307 concerning this source of water. The lifting of these injunctions let to the transfer of 92,421 acre-feet to the U.S. ownership in February 2002, which was applied to the period that ended on September 2001.

By February 2002, Mexico had been credited with delivering 427,544 acre-feet of the 600,000 acre-feet it had ensured that it would provide in Minute No.307. This leaves a shortfall of 172,456 acre-feet.

From October 1, 1997 September 30, 2001, Mexico delivered a total of 1,120,032 acre-feet. As of September 30, 2001, the prior cycle deficit and the current cycle obligation totaled 1,303,818 acre-feet of water owed to the United States.

Current Situation

The U.S. Section on a number of occasions since October 2001 has asserted its concerns to Mexico that the terms of Minute No.307 have not been fully met and has requested technical talks to arrive at a remedy for the Minute No. 307 shortfall and a water delivery plan for the fifth year of the current cycle as required under

Minute No. 307. The U.S. Section developed a plan for the fifth year and a formula under which Mexico would prioritize its treaty obligation to the United States in December 2001 and put forth that plan for the consideration of the Mexican Section in early January 2002. To date the Mexican Section, although continually pressed to do so by the U.S. Section, has not given a formal response. The Department of State has likewise urged Mexico to conduct immediate technical talks within the IBWC towards resolution of this matter. President Bush raised the outstanding deficit in waters owed to the United States during his bilateral meeting with President Fox at Monterrey, Mexico on March 22, 2002 and urged immediate water deliveries to the United States towards fulfillment of Mexico's treaty obligation. The Mexican Government continues to assert that it does not have sufficient water under current climatic conditions to make additional water deliveries to the United States and has diverted attention for immediate deliveries to the need to develop long-term conservation measures within Mexico supported by funding from the North American Development Bank.

The U.S. Section of the IBWC intends to continue its efforts to press the Mexican Section for technical talks aimed at identifying additional sources from which Mexico can provide additional water in partial fulfillment of its obligations under the 1944 Water Treaty. The U.S. Section of the IBWC remains committed as well toward reaching agreement with Mexico on a formula by which Mexico would commit to giving the highest priority to honoring its treaty commitments to the United States in future years. The U.S. Section of the IBWC believes that the 1944 Water Treaty can be made to work and should remain in force for the benefit of both the United States and Mexico.

The U.S. Section is also well aware of the urgent need for water, and the economic hardships that the South Texas irrigators are suffering. We continue to urge Mexico to consider the various water sources and volumes identified in recent technical talks that would make certain volumes f water available to the South Texas irrigators.

Thank you for the opportunity to testify today. I would be pleased to respond to any questions you or other members of the Committee may have.

Mr. CALVERT. I thank the panel for their testimony. I'll start the question period.

From the testimony and from a meeting that we had this morning, I think the panel understands the problem, specifically, one, that there has been a drought, certainly; but, two, there has been a lack of compliance on the part of Mexico to the treaty obligations that are outlined by you, Mr. DERHAM.

Specifically, obviously, the President—this has the attention of the President of the United States. He's brought it up, as you mentioned, a number of occasions with Presidente Fox in an attempt to get the Administration in Mexico to move forward to immediately start helping to resolve the immediacy of this problem.

It seems to me that even if H.R. 2990 was made law tomorrow—and, certainly, it's worthwhile legislation that Mr. Ortiz, along with others, have introduced that we need to move on—that will not resolve the immediate problem that we have today. And that is that Mexico needs to move forward to make sure that the treaty obligations are met.

What can you do to assure this panel and to relay a message to your superiors in Washington that this is something that can be moved on very rapidly?

Mr. DERHAM. Mr. Chairman, as I mentioned in the statement, President Bush raised this with President Fox 6 weeks ago in Monterrey. And my understanding was that this was essentially the first subject he raised when he met with President Fox. And following that meeting, National Security Advisor Rice spoke to Mr. Berruga, who was actually also present in Monterrey, to make sure

that there was a clear transmittal of communication of this message on water.

At that point we had been told by the Mexican side that they are doing some internal deliberations and hoped to be able to get back to us on this.

I spoke to Mr. Berruga yesterday before I came down here, and he hopes to get to Washington in very short term. I think the message has been transmitted very forcefully by the President, and I think—I think the Mexican side is aware of the urgency on our side about this. But we need to see some results, and we are hopeful that in the very short-term that we will get some—a response from the Mexican government.

Mr. CALVERT. One of the reasons we're here today is to—not only to listen to the testimony and to ask questions, it's to help bring attention to this issue. We don't need to bring attention to the Valley, we need to bring better attention to our friends in Mexico and other places to make sure that the short-term solution, which is additional water from Mexico, is addressed.

In regards to the long-term solution, Ms. Bach, H.R. 2990—and I'm reading through your testimony, which, by the way, we have recently admonished the Administration again, no matter what the Administration, we try to get this testimony in as soon as possible. And, as I understand, we just received your testimony yesterday.

Ms. BACH. Mr. Chairman, you're being generous about yesterday.

Mr. CALVERT. I mentioned this to Mr. Raley, the Department of Interior, to his secretary. I try to do my job and read the testimony, but it's very difficult to do so without the testimony at hand. So please relay that message back.

Ms. BACH. I most certainly will, Mr. Chairman.

Mr. CALVERT. I would appreciate that. But we have a number of challenges throughout the United States, as you well know, and I know that your department has been challenged with the budget you have and the requirements that you have to meet.

But, certainly, I can't think of—and, of course, I can think of a number of priorities and challenges throughout the country, but I can't think of any area that we ought to look at more closely than this. So I hope that I can work with the Administration and we can work together to move positive to a past point. With that I'll recognize Mr. Ortiz.

Mr. ORTIZ. Thank you, Mr. Chairman I would like to ask Mr. Marin a question to see if maybe I can understand the issue any better.

The International Boundary and Water Commission, if I understand correctly, you do have some—your counterpart on the Mexican side?

Mr. MARIN. Yes, sir.

Mr. ORTIZ. As created by the treaty?

Mr. MARIN. Yes, sir.

Mr. ORTIZ. But now I understand that recently the Mexican government has appointed a water czar. Is this a rumor, or is this correct?

Mr. MARIN. It is our understanding, sir, that the request from the Secretary of Foreign Relations has gone to the State Depart-

ment to assign a counter to an ambassador, that, like you say, they have assigned.

The State Department, though, has gone on record acknowledging that request, but has also reinformed Mexico that the State Department does not intend to assign a counter to this individual at this time.

Mr. ORTIZ. Now, when you go to Mexico to have talks with the Mexican government, do you talk to your counterpart or do you talk to the water czar now? Who are you dealing with?

Mr. MARIN. Well, the Mexican commissioner is present at all our binational meetings, but recently on this topic this embassador for water has been present.

Mr. ORTIZ. So this is very frustrating to us that—this is another part of the treaty that they're not really applying the treaty, they're not adhering to the treaty by getting somebody else to do the work that the Boundary Commission is supposed to do.

Mr. MARIN. Well, the—I think the State Department has been very clear in stating that they need to empower the Mexican commissioner to deal with us to deal on this issue, again, like it was in the past. This individual, again, he has been at the meetings, so—and, again, mainly is the main speaker at the meetings.

Mr. ORTIZ. What do you think about this, the State Department, that this has transpired?

Mr. DERHAM. Mr. Ortiz, and Mr. Marin has just commented, we think we have the channels and the structures to deal with this issue. Obviously, if the Mexican government wishes to designate somebody to be involved and we really don't comment on that—and in a way it indicates a certain amount of high level attention on their part. But we are really interested, frankly, in results and don't really see the need to change our structure to deal with this problem. We know what the problem is. We know we need to resolve the problem. And so, for this reason, we felt that working with the IBWC working toward diplomatic channels, we have the means of communicating and working on this issue that we need.

Mr. ORTIZ. You touched a little bit on 234, and the way I see it, there is no way that Mexico would be able to repay the water. Now, is the State Department considering any type of penalties against Mexico if they do not pay, which I know they won't be able to pay for the water?

Mr. DERHAM. Well, we don't consider this cycle closed, obviously. We still have another four or 5 months. We have certainly received indications from the Mexican side that some deliveries will be possible before the cycle is over.

Whether they are able by the end of September to meet their commitment for this cycle as well as the deficit for the previous cycle, I would agree with you, seems like a remote possibility. At that point we'll assess where we are and see what our options are.

Mr. ORTIZ. Of course, that would help some of the people. But what crops do we plant in September? That's not going to help the farmers at all.

Mr. DERHAM. Well, we are pushing Mexico right now for deliveries this month. And that was—that was the message that President Bush gave President Fox in Monterrey, and that's why we are eagerly awaiting a detailed proposal from the Mexican side.

Mr. ORTIZ. Thank you. Thank you, Mr. Chairman.

Mr. CALVERT. I thank the gentlemen. Mr. Rodriguez.

Mr. RODRIGUEZ. Thank you very much. Let me just keep following up on that. We've talked—and I'm wondering if there is any other discussions regarding any other types of punitive actions. Say that we find ourselves in September, they haven't delivered any. What are the considerations that can be given to other punitive types of actions that might be able to be taken?

Mr. DERHAM. Well, at that point, Mr. Rodriguez, we would—obviously, we have some recourse for noncompliance with treaties. We have other things, dispute resolutions perhaps we can look at. I would say we're not there yet. And right now what we're really trying to focus on are the immediate water deliveries and see what sort of progress we can make there. In September we'll assess what the shortfalls were and see where we go from there.

Mr. RODRIGUEZ. The problem is that, you know, just like with oil—you anticipate a certain amount of revenues coming in when you sell oil. You also anticipate—if you're anticipating that you're going to be operating with a certain amount of water and then all of a sudden it's not there, then we have—you know, the farmers here and people here have to make decisions. So it's almost now in terms of how we're going to be dealing with those situations. So, you know, maybe I know that there is a real need for us to look at some alternatives there, and I don't know maybe some recommendations from you as to what is best. Now, let me ask the International Boundary, basically what's your responsibility?

Mr. MARIN. We're a technical organization, sir, that we look for alternatives to settle these issues, technical alternatives.

Mr. RODRIGUEZ. Do you have any powers or any leverage?

Mr. MARIN. In our dealings with the Mexican section we're responsible to do, I guess, what's required under the treaty in order to comply with the treaty.

Mr. RODRIGUEZ. Do you have any rights to sue on your own?

Mr. MARIN. No, sir.

Mr. RODRIGUEZ. Do you have any other rights that you can take, any other types of actions?

Mr. MARIN. No, sir. We would have to get guidance from the State Department or the White House.

Mr. RODRIGUEZ. Have you all looked at developing a plan of action that might help to respond to the situation that we find ourselves in?

Mr. MARIN. We developed considerable number of plans, and most of those were forwarded to Mexico as alternatives in order to resolve this issue or at least to provide immediate water needs for South Texas. Unfortunately, most of those have been unanswered.

Mr. RODRIGUEZ. Any of those plans deal in terms of how the United States has to deal with Mexico in order to make this happen?

Mr. MARIN. Yes, sir. We identify—we look at their system. We identify resources or sources of water that they have. We identify how they could operate their system in order to provide this water.

Mr. RODRIGUEZ. Have you asked our government in terms of specifically as to what is a plan that could be presented to our administration to be presented to them in terms of making it happen?

Mr. MARIN. I guess all of our plans go to different levels of government, State Department and so forth. And so we figure that that is our document to them that would identify these issues. And, of course, we would provide any kind of technical support for any of the alternatives that the Administration would like to present forward.

Mr. RODRIGUEZ. So what I gather is that you make recommendations in terms of water conservation efforts that could be made in Mexico. Have we provided any guidance or resources that would have to take place in order for that to happen?

Mr. MARIN. Most of our alternatives that come out are not considering water conservation but water utilization of what they've got now. We look at their system, we identify the quantities of water that are in the system, and then we tell them, "Well, if you release from this reservoir, we can get so much if you release this." If we change the proportions of the treaty, maybe change within Minute—the treaty and Minute 234 that Mexico can provide the U.S. This quantity of water. So we don't deal on the conservation part, I guess.

Mr. RODRIGUEZ. My understanding is that, at least from previous comments, you indicated that they have released a certain amount of water, or it was just proposed—or it was proposed, and they were hoping to do it or did it or didn't do it?

Mr. DERHAM. Well, under Minute 307, which was signed last year following the meeting in Guanajuato, they committed to release a certain quantity of water during the rest of that year. I think it was on the order of 600,000 acre feet. They actually delivered 430,000.

Mr. RODRIGUEZ. So they delivered 430,000?

Mr. DERHAM. That's correct, of that 600.

Mr. RODRIGUEZ. Thank you.

Mr. CALVERT. Ms. Napolitano.

Mrs. NAPOLITANO. Thank you. Very interesting. Mr. Marin, how much water, acre feet of water does a U.S. Farmer normally utilize?

Mr. MARIN. It's my understanding, ma'am, about 1.2 million acre feet a year in the Valley here.

Mrs. NAPOLITANO. And alongside in the same area what is the development of the irrigation upstream in Mexico, and has it increased in years, are they supported by the Federal Mexican government, and how much acre feet of water do they use per foot for their farming?

Mr. MARIN. I guess it's been stated earlier, I think, in this U.S. Department of Agriculture and the University of Texas study that increase in farming in the Rio Conchos basin has increased.

Mrs. NAPOLITANO. That's the Mexican side?

Mr. MARIN. Mexican side, yes, ma'am.

Mrs. NAPOLITANO. By?

Mr. MARIN. I don't know the acreage myself.

Mrs. NAPOLITANO. Percentage? 5, 10, 50?

Mr. MARIN. I would say more like 50 percent or so, and this is just a figure that I've heard. I don't know it for a fact. And in the past few years, in fact, last year, Mexico used approximately 745

million cubic meters of water in that district up there, in the Delicias district.

Mrs. NAPOLITANO. How does that translate to acre feet?

Mr. MARIN. About 650,000 acre feet.

Mrs. NAPOLITANO. Per year?

Mr. MARIN. Well, last year. And what actions the IBWC did—because we noticed in the records that we received from Mexico they actually started doing the same thing this year. We immediately informed Mexico that we were noting this. We were putting on the record, you know, that they started irrigation, and we figured that they would be using or following the same trend that they did last year, and we've—again, they responded back to us that that water was already allocated and they would intend to use it for irrigation. And right now I believe they intend to use close to 600,000 acre feet or 600 million cubic meters, which would be about 500,000 acre feet.

We've expressed to Mexico that we figure that that's one of the basins that has water or one of the reservoirs that they can make a good faith effort to provide to the U.S. Water.

Mrs. NAPOLITANO. How much water is being released?

Mr. MARIN. It's 20,000 cubic meters per second, or 20 cubic meters per second, which is 35—about 600 cubic feet per second.

Mrs. NAPOLITANO. Is it funded by the Mexican government, water systems?

Mr. MARIN. Yes, ma'am.

Mrs. NAPOLITANO. And there has been some estimate of the per-acre water use for farming. Do you have that?

Mr. MARIN. Yes.

Mrs. NAPOLITANO. And that is?

Mr. MARIN. Well, we understand the volume that they use, and it all depends on the crops that they farm. And, of course, that area in Delicias, they've planted a lot of pecan orchards, which are heavy users of water. And there is some records that show that they use as much as maybe five feet of water per acre to irrigate while the U.S. Uses 1 or 1.5 feet or so.

Mrs. NAPOLITANO. So it's 1.5 versus 5?

Mr. MARIN. Yes, ma'am.

Mrs. NAPOLITANO. Roughly, give or take. I think I had a question for Ms. Bach. In that—or maybe Mr. Derham. I'm not sure which one would be able to answer it. This has to do with the Colorado River, since this is also addressed by the same treaty.

How much water does the U.S. Have to deliver to Mexico each year from the Colorado, and has the U.S. Ever been in debt to Mexico through the Colorado allocation, and is this comparable, because being in California, we deal with the Colorado, and we are being pressured by Mexico and some of the environmentalists to release more and more water, even though, from our vantage point, we are giving the full allocation of their water on the treaty.

And I'm concerned, do we—have we been in debt? Are we in any way, shape, or form able to negotiate maybe Colorado versus Rio Grande water? Because, to me, if we are on the same treaty, how—why have we not addressed it in that manner?

Mr. DERHAM. Ms. Napolitano, we provide—under the treaty we are asked to provide, I believe, about a million and a half acre feet per year.

Mrs. NAPOLITANO. For?

Mr. DERHAM. From the Colorado River to Mexico. And my understanding is that we have been in compliance with that obligation. Whether further down the road we would look at that in connection with the Rio Grande situation is something we really haven't addressed yet.

Mrs. NAPOLITANO. May I ask why not?

Mr. DERHAM. Well, because we had been hopeful that we'd be able to resolve this in terms of the Rio Grande.

Mrs. NAPOLITANO. But we're at 5 years, and we're at a critical situation here. We're in an emergency.

Mr. DERHAM. I understand that. Certainly, under the first 5 years the treaty does make provisions for the repayment of that in that second cycle. It is as we approach the end of the second cycle that we see that we're in a situation that might be difficult to remedy, and in that context—

Mrs. NAPOLITANO. But doesn't that bring up something that the Mexican government is now saying, that they now have five more years to be able to pay it back?

Mr. DERHAM. Well, we don't accept that interpretation.

Mrs. NAPOLITANO. But this is their interpretation currently?

Mr. DERHAM. Well, I have certainly heard intimidations that, yes, that's—that they have some argument that says that they are not meeting their commitments. We don't agree with that at all.

Mrs. NAPOLITANO. Thank you, Mr. Chairman I'll wait for the next round.

Mr. CALVERT. Mr. Ortiz.

Mr. ORTIZ. Mr. Marin, your agency, I understand, put out a report just recently. Am I correct?

Mr. MARIN. Yes, sir.

Mr. ORTIZ. And many are saying that that—many are much critical that information that was contained in that report was omitted. Can you elaborate a little bit on that?

Mr. MARIN. Yes, sir. In our publication of that report, since the document—there was a document published in 2000, I believe, with Dr. Brandes, which was sponsored by the lower Rio Grande users here, and this report now became an agency report. And the only deletions that were made to the report was any kind of treaty interpretation or personal opinion. And a lot of those personal opinions were changed from being opinions to facts, by just changing a few wordings in the document itself.

So, I mean, I reviewed the document considerably, and I just think the only issues that are—or the only information that is lacking in that report is actually what was considered as treaty interpretation. And I don't think we're in a position where the agency—again, I would defer to the State Department to make that kind of definition or those interpretations of the treaty.

So, as far as I'm concerned, the document contains most of—or I would say 90, 95 percent of the information that was there previously. All that it's lacking is treaty interpretations or opinions that were removed.

Mr. ORTIZ. But sometimes those of us who read between the lines are not satisfied because we need to have somebody who advocates our needs. And sometimes we wonder whether the agencies that are out there, whether it's the State Department, IBWC, the Department of Agriculture, whether they're really advocating our position. And there is a lot of people that feel the same way I do. And this is very, very disturbing. And I was glad to hear Mr. Derham say that when you testified that you do not agree that Mexico has complied just because they have given us 350,000 acre feet of water. Am I correct?

Mr. DERHAM. That's correct.

Mr. ORTIZ. But there is a lot of people out there that this is very confusing. We need for our State Department, for all these agencies, to come out and let the Federal Government know that you are advocating for our people, for South Texas. And I hope that we can make it clear to Mexico that, you know, our government and the Congress and those of us who represent this area in Texas are working together. This is—this is critical.

I mean, when you go out—and there is a report that came out the other day about what we pay for water. You try to go out and get a bottle of water. It's 1.50, higher than gasoline. That should send us a signal that water is going to be a very, very serious problem. And I would much rather have seen the entire report because people out there feel that this report has been doctored, and maybe it hasn't been doctored, but that's the message that's out there.

Thank you, Mr. Chairman.

Mr. CALVERT. Mr. Rodriguez.

Mr. RODRIGUEZ. We talked earlier in terms of our interpretation of where Mexico ought to be in terms of the next 5 years or not, whether they should be paying back. Can you talk a little bit more about that? Because if they come back and say "Our impressions are that we have an additional 5 years within to have to pay it back," you know, what's—you know—

Mr. DERHAM. Mr. Rodriguez, my understanding of this is—or our interpretation of the treaty and the obligations under the treaty are that in a 5-year cycle if they do not meet the 350,000 acre feet annual deliveries, they can, in cases of extraordinary drought, carry that over until the next cycle.

And, in fact, that's what they did from the '92 to '97 cycle. However, our interpretation is, and I believe it's spelled out fairly clearly in Minute 244, which dates back to 1969, is that in the following cycle they need to make the 350,000 acre feet per year deliveries. 243, I'm told, is the minute number—234.

In the following cycle, they have to not only make the 350,000 acre feet per year delivery, but make up that previous deficit. Now, if there is some sort of argument that, well, no, you really—you know, you get one more cycle and then, you know, you get into that cycle and they can kick it forward, at some point we really lose that water, or we never really get it delivered. So that is certainly not our interpretation of the treaty.

Mr. RODRIGUEZ. And then you've also talked about the fact that you just recently went and renegotiated a certain amount. And we've only gotten 600,000 or so, and we only got a little more than half on that amount delivered. And so if you have that ruling also

and they didn't deliver on that one, what—do we have anything that we can do because of that?

Mr. DERHAM. Well, the only thing I would add on that is Minute 307, which was the agreement reached last year, was in the context of this—of this double cycle problem that we're dealing with. And this was our attempt or both side's attempt to try to focus on deliveries for that year with that quantity of water and a scheduled delivery for the remaining year, but it is assumed in that overall debt problem. So it didn't add a new—I would say it didn't add a new element. It was part of the original problem.

Mr. RODRIGUEZ. What leverage do we have, because we hear about the politics of the state politics and the Federal politics on the other side. What leverage do we have, either legal or other ways, that—because if President Fox chooses to say, "I'm willing to deliver, but I'm not able to make the state to deliver," that kind of thing, what are our leverages that we can possibly muster up to make it happen?

Mr. DERHAM. Well, I would respond there are two most immediate leverages. One is the fact that it is a treaty obligation. And, certainly, my experience working in Mexico is the Mexican government takes their treaty obligations very, very seriously. And that is—in dealing with the Mexicans on this problem, that is strong leverage, and it helps us sort of dealing with the government, and it also helps us in a public diplomacy sense, making our case to the Mexican society, because a treaty obligation is taken very seriously.

We also have the leverage that the U.S./Mexico relationship is very important to both sides. It's very important to President Fox. When President Fox goes into a meeting with President Bush and the first subject that President Bush raises is water delivery for South Texas and then follows that up with Condoleezza Rice calling down to Mexico City to make sure that that message was understood and picked up, that is very strong leverage for the Mexicans as well.

I mean, I think—my own sense of this is on the Mexican side there is a very strong good faith effort to try to be responsive to this. It is—but there are problems, obviously, and that—but they are doing or trying to do what they can. I think it's important that we keep exercising this leverage.

Mr. RODRIGUEZ. Thank you.

Mr. CALVERT. Ms. Napolitano.

Mrs. NAPOLITANO. I appreciate your statement, but how can we now consciously say the Mexican government is really being upfront with us when on one hand they're supplying the tools for the continuing agricultural development in the area where the dams that were built and doing everything they can to utilize the water there and then not putting pressure on a Governor that is sitting there to release that water? It just doesn't quite make sense. And if I'm hearing correctly, in some of the statements that have been given to us before, not necessarily in this hearing, that there is political ramifications.

Well, we need to be able to get beyond that, and somehow the State Department should be able to help us identify to plan a commitment, or at least a vehicle that we can start utilizing all the time. I mean we're hurting here in this area, and, to me, all of the

United States should be supporting what we're trying to do, and that's move forward with getting that water delivered. I mean, I'm frustrated.

Mr. DERHAM. And I share this frustration, and I think the Department of State, Secretary Powell shares it, the President obviously shares it. And I'm not here to defend the way the Mexican side has responded on this. They do have, obviously, though, competing pressures on this, and it's not an easy issue for them. And looking in sort of a broader sweep of our relationship with Mexico, the Fox government has been very cooperative, very responsive to us in a number of areas.

Mrs. NAPOLITANO. But not through enforcement.

Mr. DERHAM. Water enforcement.

Mrs. NAPOLITANO. Not to actual deliver the water.

Mr. DERHAM. Exactly, and so I would—to me that would indicate, given their record in all these other areas, that it's not a question of being sort of just cavalier with us on this, but that it presents them some very serious difficulty.

Mrs. NAPOLITANO. So what is the next step, sir?

Mr. DERHAM. Well, we need to see what happens immediately, based on the contacts the President and Ms. Rice had, and see what the Mexican side can offer us, and then we need to assess that and see what deliveries we'll get for the remainder of this cycle year, and then we have to see where we are.

Mrs. NAPOLITANO. But this region can't wait for bureaucratic solutions, unfortunately. So I'm asking what else can we do?

Mr. DERHAM. Well, we would hope that part of this process or part of the Mexican response would be some immediate water deliveries.

Mrs. NAPOLITANO. But we've been waiting for 5 years. So we're back to square one.

Mr. DERHAM. Well, we would—we are owed a response on this certainly within the next week. And I would hope that we'd be able to see something.

Mrs. NAPOLITANO. Thank you, sir. Ms. Bach, the bureau, do they have any—let's see, any projects in this area?

Ms. BACH. In terms of specific reservoir development for irrigation purposes down here, no, we do not, but we have the authorization per—

Mrs. NAPOLITANO. Are you funded?

Ms. BACH. We are not funded for implementing the bill that was passed by the Committee in the last 106th Congress. What I have done within my region is I have reprogrammed money up to my ability to do so, but in order to enter into construction, I would need direct appropriations.

Mrs. NAPOLITANO. And what does that consist of?

Ms. BACH. Under the initial bill under the public law for the 106th Congress—

Mrs. NAPOLITANO. Which bill was that?

Ms. BACH. That was 106-576, and the bill before you today is amending that bill. The original legislation was for four authorizations. It was for a 50/50 cost share bureau reparation with the local entities for a 50/50 cost share. And that would be to allow them

to do actual water conservation. In our language, it's construction dollars, and I would need direct appropriations for that.

Mrs. NAPOLITANO. You're talking about amending the prior 106th Congress law. Again, we're going into studies, into moving forward on figuring out what's necessary. I'm concerned as to how soon can we get any information to this area through the bureau to assist them, whether it's a desal constructionsite, because that would alleviate the use of muni water for use for ag water, correct?

Ms. BACH. There is quite a variety of opportunities and options for—

Mrs. NAPOLITANO. How much money would it take or would H.R. 2990—does it carry money?

Ms. BACH. It's an authorization for appropriations.

Mrs. NAPOLITANO. OK. How much would it take, given—if it would pass and get funded, how much would it take for the bureau to work with the munis and this whole region to be able to address the current situation?

Ms. BACH. The amount of funds that would be needed are in the order to implement both pieces of legislation, both last year—last Congress's and this, for the 50 percent that reclamation would pay off is approximately $55 million.

Mrs. NAPOLITANO. 55?

Ms. BACH. 55 for fully funding both pieces of legislation.

Mrs. NAPOLITANO. Thank you.

Mr. CALVERT. Thank you. We're going to wrap this panel up, but I'm going to make a final statement. Clint Eastwood said in one of his famous statements, "You've got to know your limitations." As Chairman of this Committee, I deal with domestic issues of water within the 50 states, but here we need some help.

Technical compliance until October won't help the farmers here in September, as Mr. Ortiz mentioned. Overdevelopment of land within Mexico, that, apparently, may be the reason for noncompliance. I don't believe, based upon the testimony I've heard so far and the information I've received, it's not extraordinary drought. It's probably extraordinary expansion of water utilization within Mexico.

This President has paid close attention to this problem, and I certainly appreciate his attention and the attention of Presidente Fox. Unfortunately, this should have been addressed a number of years ago and when that utilization of water and land development within Mexico was taking place. And today we're here. Mexico expanded their water utilization. They put themselves in the position where they find themselves in a very difficult position to meet their responsibilities under the 1944 water treaties that we have entered into.

Now we're faced with an emergency that I've experienced as Chairman of this Committee, unfortunately, a number of times, and one that I don't think is of any less peril will be found in the southern part of Oregon and northern California, what we deem Klamath Valley, which was truly a calamity.

The largest public hearing in the U.S. House of Representatives history, as I understand, took place in the Klamath Valley, a community of 15,000 people, where almost the entire town showed up. We don't want to experience that here. So I would move the

gentleman, as I excuse this panel, and I know you all have to catch airplanes and leave, but I would—please let the Administration know and the State Department know that this is at a critical point, that this water needs to be released and released soon.

For our friends in Mexico, we want to maintain our close friendship and reliance upon one another as great trading partners. This won't help if we have this continue in the near future. So with that, I thank the witnesses for their testimony and for their answering our questions. You're excused.

Mr. CALVERT. Our next panel. Jo Jo White, please come up to the dais, General Manager of the Hidalgo and Cameron Counties Irrigation District No. 9. Mary Lou Campbell, the conservationist, is here as well, Sierra Club, Lone Star Chapter, Frontera Audubon Society. Frank Feild is President and CEO of the Brownsville Chamber of Commerce. Please take your seats.

Mr. CALVERT. Mr. White, you've probably heard from our previous witnesses. We need to attempt to keep our testimony to within the 5-minute rule so we can have time for questions.

This applies to the rest of the panel. If you have extended remarks for the record, we'll be more than happy to address that.

Mr. White, you're recognized.

STATEMENT OF JO JO WHITE, GENERAL MANAGER, HIDALGO AND CAMERON COUNTIES IRRIGATION DISTRICT NO. 9

Mr. WHITE. I will be brief. Obviously, there is a lot of information already with this first panel that I was going to testify on. I'm not going to be repetitive. We do appreciate you coming down here from Washington to see the crisis that is facing this part of the United States.

Obviously, you've heard that the Rio Grande River is our only viable source of water, and this water supply is supposed to be protected by the 1944 Water Treaty. It was noted that this treaty is very beneficial to both nations. Obviously, there are geographical areas within each nation that receive waters that are generated within the boundaries of the other nation. Without these waters, these particular geographical areas could not be a viable entity.

Obviously, as mentioned before, the United States has never failed on its—on meeting its obligations on the Colorado River provisions, even during the most droughty situation in California, Arizona, and everything.

Well, there was a reason for this. Not only was there prudent water management in the western states, but also there was the insistence of our Federal Government that our treaty obligations to Mexico would be fulfilled. That was the main reason that water kept going to Mexico.

Unfortunately, as you all have heard now, Mexico has failed in meeting its obligations on the Rio Grande provisions. They have claimed that extraordinary drought was the reason for their first cycle deficit. Yet, there has been a mass, a mass of evidence and data now that has come forward that show Mexico had ample rainfall during that time period in question and that it had ample reservoir levels in the interior storage lakes in Chihuahua where they could have met their obligations.

It is extremely unfortunate that we presented this information to the State Department, to these guys sitting behind me that were here in the last panel, we presented this to them over 4 years ago. As a matter of fact, it was here in Brownsville, Texas that all this documentation was presented to them that show Mexico could have met their obligations.

Yet this—the State Department and the IBWC would not challenge Mexico on its assertion that it had extraordinary drought that caused this deficit. They said that this would be admitting then that this deficit was illegal and, therefore, there was a treaty violation. They told us they would not go there. They said, "The reality of the situation is, boys, you all are going to have to go through these next 5 years, and Mexico will have to pay this deficit off during this cycle."

We then asked the State Department and the IBWC at that time, "Would you please force Mexico into an aggressive repayment plan at the beginning of the cycle?" We warned them that if they did not do this, then the scenario would take place where they could not pay off the deficit.

Well, obviously, the State Department did not force Mexico into any aggressive repayment plan. Since Mexico was not forced to the table, they basically gambled on mother nature in paying off their deficit. They continued to use the waters that were generated with the interior of Chihuahua to meet their own needs there without delivering adequate amounts to the Rio Grande to meet treaty obligations. This gamble now has failed. The big climatic event, the big hurricane that they gambled would come and fill up the reservoirs did not occur.

Now with the remaining timeframe left in the treaty, approximately 5 months, this timeframe is like a noose stretching and closing in on Mexico's neck, and now they're trying to squirm out of this noose by saying they have another 5-year cycle to pay off this present cycle's deficit because they've already paid off the first cycle's deficit with waters that have come in during this cycle.

As said before, this is in direct contradiction to Minute Order 234. You all have just heard testimony from the State Department that they agreed with our position that Mexico must stay current in a present cycle while paying off a previous cycle's obligation.

It's very funny, though. We asked the State Department over 3 years ago if they agreed with that interpretation, and they did. They verbally said they did, just like they did right now. We asked them for written interpretation and documentation of that stance. We wanted to have something concrete in our hands. To this day we have not gotten one bit of written confirmation of their stance.

The real reasons for Mexico's deficit has already been brought out. Mexico has no interior water management plan on its interior reservoirs that has treaty compliance obligations taken into consideration. They have admitted to that. The other reason is overexpansion of crop production in the State of Chihuahua.

That overproduction now has reached the point that the water shed in that area can no longer supply the needs of that overproduction and still meet treaty obligations. It's those reasons that we have a deficit situation now. It's not extraordinary drought.

Unfortunately, the main reason to have a water treaty in the first place is to make sure there are adequate supplies of water during times of shortage. Each party in a water treaty has to be protected. Why have a water treaty in the first place if there is always going to be ample waters that's going to meet everybody's needs? The reason for a water treaty is to have something in place to protect those in times of shortage.

Mexico has not had shortages. They've had mismanagement and overproduction. Yet where our bitterness and our frustration is focused is not only on Mexico, because if our State Department and past and present administration had addressed this very aggressively years ago after we presented them with all the documentation of what Mexico was doing, at that time, if they had addressed this issue, we would not be sitting here today.

President Bush has always promoted the theme of "Just do the right thing." There is a lot of speculation now that this region is going to be sacrificed on this issue even though we're being illegally exploited by Mexico in order to further other agenda items with Mexico that affects the whole United States. This very unfortunate.

If President Bush allows these other agenda items to compromise his position on this, he is not practicing what he preaches.

Obviously, without going into any further detail, our problem has been with the State Department, the IBWC, and the past and present administrations. I now urge you, representing the legislative branch of the government, to see what you all might be able to do.

Obviously, one of the first things that you could do, that really won't help us now, is to have a Congressional inquiry into the State Department's inability or ineptness or whatever to handle this situation. Also, you could consider adding language to pending and future legislation that deals with Mexico that has treaty compliance in it.

Congressmen, we are on our knees. This is the worst year since this crisis—since this water shortage has started. This is the worst year of all. Our all-time reserves are at their lowest level ever. We have many growers that have gone out of business, and there is many of them sitting right here in this auditorium that are on the brink. We need assistance immediately.

I beg of you, please do what you can do from the legislative branch, because, obviously, the executive branch has not addressed this. Thank you very much.

[The prepared statement of Ms. White follows:]

Statement of Jo Jo White, Hidalgo & Cameron Counties Irrigation District 9

The Rio Grande Valley, due to its unique climate, soil, and river delta characteristics, has been a nationally recognized area for agricultural production. Citrus, sugar cane, vegetables, corn, melons, cotton, grain, etc. have been produced in this region for years and this production is the fuel which drives the regional economy. Population has literally exploded in this area and it now has one of the fastest growth rates in the United States. Because of having a semi-arid climate, the key to the continued prosperity and growth in South Texas is the assurance of an adequate water supply.

The only viable source of fresh water for use in this region is from the Rio Grande River. This source of water is supposedly protected by the provisions of the 1944 Water Treaty between the U.S. and Mexico. This Treaty is essential to certain geographical areas in each nation that depend upon water supplies produced within the

boundaries of the other nation. The U.S. is obligated to furnish northwestern Mexico a minimum amount of water yearly from the Colorado River and Mexico, in return, is obligated to furnish South Texas a minimum amount of water in a 5 year timeframe. Obviously, this Treaty benefits each nation in respective regional areas that do not have alternative water sources. As a note, the U.S. has never failed to meet its Treaty obligations to Mexico on the Colorado River provisions.

Unfortunately, since 1992 Mexico has failed to meet its Treaty obligations and now owes the U.S. over 1,400,000 acre-feet of water. Mexico claims that the deficit was caused by "extraordinary drought" which is very debatable due to the findings of the Brandes Report that faults Mexico's drought assertion. During the timeframe in question, Mexico experienced over 80% of its normal rainfall, had an aggregate of over 7 million acre-feet of water remaining in its interior reservoirs after each year's growing season was completed, and had numerous years when water was stored in the flood pool in the last reservoir on the Rio Conchos River before it reaches the Rio Grande. These events contradict Mexico's assertion that it did not have available water to meet Treaty obligations. Yet, even with this documentation, the U.S. State Department would not challenge Mexico on its position. Furthermore, Mexico has recently stated that the first cycle deficit has been repaid and it now has another 5 years to pay off this current 5-year cycle deficit. This action is not allowed because of Minute Order 234, which specifically states that Mexico must stay current in present water obligations while paying off a preceding cycle deficit. This language is crucial because it prevents Mexico from rolling a deficit over from cycle to cycle.

The failure of Mexico to provide its obligated Treaty water has devastated the Region's economy. Texas A&M University has calculated that the economic losses directly attributable to this amount of unavailable water has amounted to $1,000,000,000. Being one of the poorest regions in the U.S., this type of economic loss is extremely hard to swallow. Farmers have gone out of business and others are on the brink. The repercussions from these failures have negatively affected the lives of all residents who live in the region. Due to the lowest water reserves on hand since this inequity began, this year will be the most damaging of all.

Regional stakeholders have pleaded to the State Department and past and present Administrations to take the necessary actions to force Mexico into compliance. These entities were warned that if aggressive water repayments were not implemented by Mexico, the scenario would eventually take place where Mexico would not be able to pay its debt within the remaining Treaty deadline date. The State Department did not heed our warnings and this predicted scenario has now arrived. Mexico opted to gamble that Mother Nature would provide a climatic event that would fill the reservoirs within the current 5 year Treaty cycle. This gamble has failed and Mexico is now trying to escape its obligations by ignoring Minute Order 234 and claiming it has another 5 years to pay off its existing debt. If our Federal Government had forced Mexico into aggressive water repayments years ago as we urged, this unprecedented scenario would not now exist. Are U.S. citizens now to suffer the consequences because of the failure of our Government to force compliance? We believe that it is just as important for the Federal Government to prevent a Treaty violation from occurring, as it is to react after a violation has occurred. As of present, Mexico still has not addressed repayment and the deficit has continued to grow. Many farmers are now out of irrigation water and the consequences are evident financial ruin. At the same time, agricultural production in Chihuahua is booming and record yields have been reported by Mexican authorities. The success of this area in Mexico is directly the result of the illegal diversion of obligated Treaty water to produce these record yields. For years, the State Department has been notified that this unprecedented Mexican action has been taking place but no corrective actions have come from Washington.

The Region's state mandated 50-year water plan to meet future water needs was based upon receiving the Treaty obligated water from Mexico. This plan is now invalid if these obligated waters will not be made available. Without these water sources, agricultural water supplies will no longer be sufficient to meet the conversion to municipal use. Being one of the fastest growing regions in the U.S., municipal water demands are escalating tremendously. Full Treaty compliance is mandatory if these municipal needs are to be fulfilled.

Without forced insistence from the U.S. Government, Mexico will never meet its Treaty obligations in the future under normal climatic conditions. Agricultural water needs in the State of Chihuahua now exceed what the watershed will produce due to its over expansion of farming acreage and still be able to meet Treaty obligations. This over expansion of farmland in Chihuahua not only has caused Treaty obligated waters to be withheld from the U.S. but also to other Mexican states downstream on the Rio Grande. Mexico has admitted that it does not have a water

management plan is use on the interior Mexican watersheds that takes Treaty obligations into consideration. Past Treaty compliance was by accident instead of purposely planned. Basically, adequate rainfall fell in areas where Mexico could not capture it behind their numerous reservoirs.

It is somewhat perplexing that Washington may be willing to sacrifice a U.S. regional area being illegally exploited by Mexico in order to further other agenda items between the two nations. It would be more understandable if Mexico's illegal acts benefited its nation as a whole instead of just one agricultural region in one Mexican state. The question should be why would Mexico act illegally to only promote an isolated interior area and risk other agenda items that affect its entire nation? The answer is obvious Mexico will continue to illegally divert Treaty obligated waters to benefit one agricultural region because of the lack of punitive actions from the U.S. Government.

Mexico continually uses existing drought conditions as the reason to justify its water debt position. The most important reason to have a water treaty in force is to have the legal right to water in times of climatic shortages. Why have a water treaty if ample water supplies are always available to both parties. Drought alone is not the reason for Mexico's water deficit. Instead, it is because of having no water management strategy in practice which has resulted in the over use of water to meet over expansion in the State of Chihuahua. California, Arizona, Nevada, and other western states have experienced crippling droughts in the past, but prudent water management and forced Federal insistence has insured that U.S. water obligations to Mexico were always fulfilled on the Colorado River system. Obviously, these western states would love to have the water that is obligated for Mexico. The U.S. Government would act swiftly to prevent a western state from diverting the Treaty water. Yet, the Mexican Federal Government has not acted to prevent the State of Chihuahua from illegally doing the very exact thing.

The Subcommittee on Water and Power has the ability to expose this unprecedented crisis facing this U.S. region to the full House of Representatives. Due to the lack of adequate addressment by the State Department and Administration, hopefully this legislative branch of the U.S. Government will explore ways to pressure resolution to the impasse. We are regional U.S. citizens who solely depend upon the fully executed mutual provisions of a ratified international Treaty in order to survive and prosper. Likewise, regional northwestern Mexican citizens also depend upon the same 1944 Treaty for their sole water source from the Colorado River. They have never been illegally denied this water by the U.S. We are at the mercy of our Federal Government to force Mexico into compliance on the Rio Grande provisions of the same Treaty. Your immediate attention is urgently needed and most appreciated. Time is of the essence!

Mr. CALVERT. Thank you, gentleman. Mary Lou Campbell, Sierra Club, be recognized for 5 minutes.

STATEMENT OF MARY LOU CAMPBELL, CONSERVATIONIST, SIERRA CLUB, LONE STAR CHAPTER, FRONTERA AUDUBON SOCIETY

Ms. CAMPBELL. Welcome, members of the Committee, andwelcome home, and welcome home for you. It is a privilege to be here this morning. I do represent a section of the community that is not often heard from or considered to be a water user, but they are. And I'm talking about animals and wildlife and the people who enjoy them.

We have found in the Valley that there is a terrific amount of people out there who want to come for nature tourism. And nature tourism depends upon water to a great extent. As always before, nature tourism depends also on agriculture and, thus, agriculture gets the water, and then the birds and the animals also get the water. It is a cycle. You may think because I am not an irrigator—although I do live on a farm, and we do irrigate hay for our horses. But, still, why am I here, why am I speaking to you is because it is important to the overall life and economy of the Valley to have the treaty go forward, but not only that, to plan with Mexico. And

I think there we are somewhat at fault because we have not looked at Mexico and said, "They are our partner in the river and we must plan together." And that, to me, is the most important thing that we can do.

We cannot say, "You can't plant this and we can plant that." What we have do is say, "Let us work together and see how we can all benefit each other and still have water for the whole basin of the Rio Grande Valley because—and we're talking about the Mexican basin as well as ours, because we share that river, and there is no line down the middle of the river, and yet we know that each of us are dependent upon it.

The farmers of Tamaulipas are hurting as much as our farmers are. I went to a symposium recently held by Congressman Hinojosa that was held in Weslaco, and at that symposium were two gentlemen from Tamaulipas who said, "Let us work with you. Let us see what we can do together." And that was a very encouraging thing to hear.

I'm not talking about State Department level. I'm talking about people-on-people level, because that's what we do best in the Valley is work with others. Otherwise, I, as a conservationist, would not be asked to be here today to tell you about why we depend upon agriculture and agriculture depends upon us.

Many of the farmers and ranchers are looking at the wildlife and saying, "There is an opportunity here. We'll have hunting, whitetail deer. For long times we have hunted whitewing, and we've looked after that crop, if you will, and it is almost an annual crop in Texas. But, also, people are looking at bow hunting, wild hogs. They're looking at a variety of things, wildlife. Not only wildlife but wild flowers and butterflies.

Every town and village has a festival built around wildlife, from Willacy County, which they call Wild in Willacy, to Mission where there is a butterfly festival. There is birding on the Island and in other spots.

Also, a farmer, rancher and his wife have discovered something else, that these people make great guests, and so there are family enterprises built around bed and breakfasts. And sometimes it's mistakenly called—or maybe not—bird and breakfast. But, at any rate, those are the ways that we can work together to conserve.

Now, to talk about the bill, which is 2990, I think it very, very important that we have that. About 6 years ago the four counties got together for water planning, Willacy, Cameron, Hidalgo, and Starr County. And at that time we said we have to have on-farm water conservation and we need the ability to get the water to the farmers through the irrigation systems in a way that is not wasteful and in a way that will be cost effective, and we don't charge—we don't charge nearly what water is worth because water is the one thing that man cannot do without, water and air.

But in order to make the connection between agriculture and water, we can't make it too expensive either or the farmer couldn't afford to grow. So that is why we're coming to Congress with H.R. 2990—well, the amendments to the Resources Act, to ask for money so that we may be able to retrofit the irrigation systems.

Many of the municipalities have already done this. The city of Brownsville has put in new pipes. They had old leaky pipes. They

found they were losing a terrific amount of water doing that, having those pipes. So they have done that type of work. We need improvements in the irrigation districts. Many people cannot afford them or think that they cannot. Also, there is training to be done because how will we use these new irrigation systems? And the technology is developing a lot in other countries, and also in California I know that there is much work being done with using low flow to get the same effect that you might get from flood irrigation, and that's not to say that everyone in the Valley uses flood irrigation, but it's very popular, and if you don't have the means to do something else, you may do that.

When I talk about—and I really want to talk about conserving the river. And you may think that's funny if you've been down to the mouth of the river now, because the mouth of the river is blocked. The Rio Grande no longer flows. And to us it is a tragedy because it was once a mighty river, and now—partly because of the dams in Mexico because that's where we get our water. We do not get our water from the Sangre de Cristo range. That's all used up before we get it down here.

So we get almost all of our water from Mexico. So there is two reasons why the treaty is very important and also there is two reasons why we need, again, to have water planning. I can't stress that too much. I think if you do anything or if you take home anything today, think about planning for the future for our children and our grandchildren, if not, the Valley will simply not be as it once was. It's no longer as it once was, but as we live here and we see it develop, we want it to develop in a way that we can leave it to our children and to our grandchildren, and I think you who live here realize that. You in California have your areas.

All of us wish that we could leave something better for our children. So we need to look at better ways to manage water, better ways to use water. We need to look at desalination, both groundwater and seawater. We have a vast reservoir out here in the Gulf of Mexico, and many of the cities and towns are banding together to talk about desal and having a desalination plant that will serve various communities.

You say, "Well, that won't help the farmers," but it will because it will free up water for farm use. The municipalities have first call on the water in the Valley. They are supposed to get it no matter what else happens. But if they will go more and more toward desalination, that means that the farmers will have that much more water. Groundwater is the same way.

So I appreciate your coming. I appreciate your listening to me. I do want you to take home a thought that what the whitewing says, it says, "Who cooks for me?" And that is what the farmers and ranchers have been hearing when they see the bird and breakfast people come, "Who cooks for me?" So there you are. Thank you for being here.

[The prepared statement of Ms. Campbell follows:]

Statement of Mary Lou Campbell, Mercedes. Texas

It is my privilege and duty to come before you today to share my thoughts on the subject at hand—Lower Rio Grande River Water Security—Opportunities and Challenges. I am speaking today on behalf of Sierra Club and Frontera Audubon Society, although I am a member of many local, state and national organizations having the

well-being of our environment as their goal. It is important to note that I represent the environmental community on Region M, Rio Grande Regional Water Planning Group.

The Rio Grande River rises in the Sangre de Christo Mountains and flows through the San Luis Valley. Here in the Lower Valley of Texas the once mighty Rio Grande has been reduced to a mere trickle that cannot reach the Gulf of Mexico. A sand bar has closed the mouth of this river estuary. The torrent that once carried sand and gravel, yes, even flecks of gold ore, to build and replenish our Gulf of Mexico beaches is no more. The Rio has been dammed and diverted, over-used and blocked by invasive, introduced varieties of plants and trees. The water that once flowed from the Sangre de Cristo Range of Colorado and New Mexico no longer reaches the Valley. We must depend on the Pecos and a few small tributaries from the United States. The principal source of water for the Lower Rio Grande comes from Mexico—the Rios Conchos, San Juan, Salado and others. The major rivers have dams on them to supply Mexico's burgeoning population and industrial growth. (Much of it the result of NAFTA policies.) This growth, compounded by a major drought in Northern Mexico, leaves little water for South Texas. Even if Mexico would or could pay the due portion of the Treaty of 1944 debt, this water would not solve our long term problems. I would like to join others who have suggested that we turn this seeming impasse into an opportunity to work with Mexico on water planning for the future of both nations.

Although Texas Senate Bill One suggests a fifty-year horizon for the purpose of water planning for Texans, the members of the committee of Region M must deal with the realities of here and now. We are in the process of amending our original plan to more properly reflect the changes and challenges that we see. To be effective the plan must be a living document. The municipalities have first call on water so long as it is available, in reality the municipal and irrigation users must depend on each other. The cities and towns do not all have pump stations on the river, so some must rely on irrigation transport to get their water to them. The Region M plan calls for an aggressive approach to water conservation and use and reuse by municipalities, thus making more water available in the system. Part of conservation is also the updating of lines and meters within the towns so that the system can operate with minimal water loss.

Not only must we think of water conservation, we must look for new sources of water. This strategy must include desalination of both ground water and sea water. There are several small programs running on desalination of ground water, with more planned as we learn about sources of supply. The Texas Water Development Board is currently working on a Ground Water Availability Report for our area. The coastal regional water planning groups, in order to optimize available resources, are working together to plan for desalination of sea water. Certainly, desalination of sea water is a viable option. The region is located on the Gulf of Mexico. We believe that problems of cost and waste disposal can be worked out for an efficient and bountiful supply of water not only for our coastal communities, but, in time, for the entire Valley.

Prior to Senate Bill One, which established the regional planning groups, the lower Rio Grande Valley formed a water planning group. That group was the nucleus for Region M. Key to the plan were improvements to the irrigation canal delivery system and on farm conservation. This is as true today as it was in 1996, when the group first met. Some of the improvements identified were:

- Improvements to irrigation canals, many are very old with cracked concrete linings, leaks, breaks etc
- Application of region-wide on-farm metering and volumetric pricing
- Installation of on-farm high-tech application methods
- Training for on-farm high-tech management
- Non-agricultural water conservation
- Impacts of urbanization on irrigation water requirements
- Region-wide water accounting system for accurate measurement of the Water Conservation Projects
- SCADA System to more effectively monitor and manage the delivery of water from the Falcon–Amistad Reservoir system to the Lower Rio Grande Valley

While we recognize that this is a very impressive list of improvements, we believe that they are essential to the long term viability of agriculture in the Lower Rio Grande Valley. We have been noted and still are a "bread-basket" to the world. However, without water-saving improvements to our water systems, we will no longer be able to sustain that place and honor. The committee acknowledges the help of the United States Agricultural Research Center in Weslaco, the Texas Agricultural Extension Service of the Texas A&M University System in Weslaco and the Department of Agricultural Sciences of Texas A&M University of College Station,

Texas in planning. We will depend upon them for help in training for the implementation of these water saving methods.

I ask for your support of H.R.2990 and the amendments thereto that pertain to the viability of agriculture in the Rio Grande Valley of Texas.

As a volunteer for the environment, I believe that human and wildlife values for water are of equal importance. Some of our plants and animals live in a water dependent locale, others need only access to water for drinking or food source and yet others can thrive in an arid atmosphere. Yet, they all need some type of moisture, if only limited to the occasional drop of dew. We must consider wildlife and their habitat in our planning for water. One thought would be to ensure adequate freshwater flows in the river. On the United States side almost none of the water taken from the river is returned whether for domestic or on-farm use. In Mexico, much of what is returned is not treated and may even prove a risk to both man and animals. The (once and future) estuary at the mouth of the river is an important nursery for white shrimp, bait fish and sportsfish, namely snook. The bays and estuaries of Texas are a multimillion dollar nursery ground for the Gulf of Mexico.

In the past the leaking canals and wide-spread use of "flood irrigation", proved to be a source of water for wildlife. Other than the Rio Grande and the Arroyo Colorado, we do not have springs and streams in the lower valley, so the wildlife has become dependent on canals, livestock tanks and overflow of antiquated irrigation towers. Many of our species have "moved to town" where a source of fresh water is often the runoff from lawn watering and car washing. Recognition is growing throughout the valley of the value of native birds, plants and animals. Nature parks and nature trails are being established. Texas Parks and Wildlife has established the regional birding trails. Again under the umbrella of Texas Parks and Wildlife a Texas Birding Center is being built in the Valley with satellite centers in seven valley cities. A National Butterfly Center is planned for Mission.

The U.S. Fish and Wildlife Service manages three National Wildlife Refuges: Santa Ana, Laguna Atascosa and Lower Rio Grande.

These refuges, when completed, will establish a wildlife corridor along the Rio Grande from Boca Chica Beach to Roma and Rio Grande City. In addition Laguna Atascosa has both beach and bay habitat for bird and animal and plant species. These three refuges represent millions of dollars worth of expenditures both to buy and maintain. They are an important part of the economy to the Valley. We are learning that hunters and fishers, birders and hikers bring new dollars.

Tourism is the third largest industry in Texas. Nature tourism is the fastest growing sector of the tourism industry. Wildlife watching is the Number One sport in the United States, with birding the fastest growing hobby. Texas is the Number One birding destination in the United States. The Rio Grande Valley is the Number One birding destination in Texas, with over 500 species sighted, including more than 40 rare or endangered species. Over 200,000 people come to watch birds and wildlife every year, accounting for more than $100 million in spending. Using a multiplier effect of 1.7, wildlife watching accounts for over $170 million in local economic impact annually. Nature tourism in the Valley sustains over 2,000 jobs and accounts for approximately $100,000 per year in local spending. It is essential that we have enough water to maintain habitat.

For the above and other good reasons that others will testify to, we ask for funding so that the Valley will continue to thrive and that we who live here can use our resource both wisely and well.

Thank you for the opportunity to testify, Mary Lou Campbell

Mr. CALVERT. Mr. Feild, from Brownsville Chamber of Commerce.

STATEMENT OF FRANK FEILD, PRESIDENT, CEO, OF THE BROWNSVILLE CHAMBER OF COMMERCE

Mr. FEILD. Good morning, Mr. Chairman and members of the Committee. Welcome to the end of the river. Thank you for taking time from your families and busy schedules to visit us.

Water issues in our area are extremely complicated. There are a lot of agencies and players involved. Many claim to be in charge while few want to accept responsibility. Our water source is an international boundary, and anything we do requires agreement

with Mexico, who has the same problem with their own agencies, players, and responsibility.

Brownsville's National Weather Bureau chief says we're in the third or fourth year of a seven to 9-year drought. Our water reserves are dangerously low. In Brownsville, we pray for hurricanes, since their rains will fill our reservoirs.

Mexican farmers in the Rio Conchos basin are using water that belongs to Rio Grande Valley farmers and then using their increasing wealth and political muscle to keep Mexico from releasing our water in compliance with the 1944 treaty.

What water we do have coming down the river is blocked by aquatic plants, requiring the watermaster to use our farmers' water just to push the municipal water downstream. This aggravates an already desperate situation.

When the water reaches municipalities, particularly on the Mexican side of the river, they don't have reservoirs for storing the excess. So we watch as millions of gallons rush past us toward the ocean every day.

Finally, the mouth of the Rio Grande River has been plugged by a sandbar for most of the last 15 months, obscuring the international boundary and causing unimaginable environmental consequences.

I wish I could offer you a package of silver bullets to fix these problems. What I can offer is the assurance that we're not going to just whine about our lot in life, but we're going to do all we can to ensure that we have a reliable, cost-efficient, quality water supply for municipal, industrial, and agricultural use. If we fail, not only will our crops and landscape dry up and blow away, but so will our economy.

But at the end of the river we're blessed with creative leadership in this time of crisis. Brownsville's Public Utility Board has spent years developing strategies to efficiently use water and move away from reliance on the river.

I've provided fact sheets on four of their key programs. The Brownsville Weir and Reservoir Project is an in-river reservoir designed to catch and hold some of this excess water. Our brackish groundwater desalination plant will provide nearly half of the city's daily water needs when it becomes operational. The resaca restoration project will give us additional water storage capacity and protection from flooding during future hurricanes. The water reclamation project will use treated effluent for landscaping and agriculture.

Congressman Salomon Ortiz is intimately familiar with each of these critical projects and will be asking for your help to move them along. Please support our Congressman and you'll be helping this community.

We also need to modernize our agricultural water delivery systems, which currently use 85 percent of the water taken from the river. Even modest savings here could equal more water than municipalities use. We support 2990 legislation.

Experts tell us the solution of choice for the aquatic plant blockage is chemicals. However, the Mexicans are afraid their water processing plants can't filter out the chemicals. We may have to as-

sist them with technical and financial support to upgrade their capabilities, or even begin selling them treated water.

Another alternative might be a major Corps of Engineers dredging operation to remove aquatic plants from the river. Our problems are mild compared to what the 600,000 plus inhabitants of our sister city, Matamoros, Mexico, are facing. They're trying to run an antiquated water processing and distribution system for a population that is growing by leaps and bounds. They are also victims of the Mexican agriculturalists in the Rio Conchos basin who are withholding water. But Matamoros is our neighbor, and we have a moral obligation to help them if we can.

The Cross Border Institute for Regional Development, known by the acronym CBIRD, is a binational public/private initiative to promote regional partnerships, introduce new technologies, and encourage strategic economic development visions. It was conceived by Dr. George Kozmetsky, architect of Silicone Valley and the Austin Telecommunications Corridor.

CBIRD recognizes that unless we solve the water and telecommunications problems in our region, we will never move forward. CBIRD is currently developing a binational, regional program to address our water issues. This is not just another agency trying to take charge, but an honest broker and facilitator who can pull together diverse players to communicate, cooperate, and collaborate. Thank you for the opportunity to testify.

[The prepared statement of Mr. Feild follows:]

Statement of Frank E. Feild, President & CEO, Brownsville Chamber of Commerce

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Thank you for the opportunity to testify.

Mr. CALVERT. I thank you, gentleman. Mr. White, I understand your anger, and I understand your frustration. Before I got into this kind of work, I was a businessman, and I dealt with daily problems, regulations, and payroll, and the rest of it.

You can deal with issues that you can control, but it's difficult to deal with things that are outside of your control. And that's what you're faced with, something that's not the fault of your own, but you're placed into a situation that is extremely frustrating.

I want to assure you, though, that this President—and I'm certainly going to convey the message to him, and all of us, certainly our colleagues, Mr. Bonilla, and all to the President the suffering that's taking place here and the problems that will only grow in severity in the next number of weeks and months if this isn't addressed immediately.

Unfortunately, I'm sitting here looking at a senate resolution that apparently was passed Wednesday, calling on Vicente Fox not to give anymore water to the United States that's not part of the previous bilateral agreement. Of course, this is a part of the bilateral agreement, but I would like to get the authority of the President to make sure the water is delivered to the United States as per the treaty.

But I can imagine that you're representing not only yourself and your irrigation district and the farmers that take place, but all of the farmers in this entire Valley, and the reason we're here, at Mr. Ortiz' insistence—and he didn't have to insist too hard, because I understand. I, unfortunately, have to go around the country, and I've heard problems within our own country, but we can deal with

those generally. It's difficult to deal, as I mentioned earlier, with things that are outside the province of the Congress. But the State Department certainly can, essentially, and we'll do everything we can to help.

Mr. WHITE. I appreciate that, sir. I would like to say, obviously, due to the situations that we face now, unless we don't get some immediate relief soon and continued relief monthly, this is going to become a boiling point down here, and it's going to be very unfortunate if incidents take place that would be detrimental to both the United States and Mexico.

Mr. CALVERT. I understand. And I'll certainly work with the people represented here on this panel, who—to work toward appropriations on public law 106-576 and to work with Mr. Ortiz on his legislation. We have legislation throughout the United States and we need to have better water policy through the country, certainly in the west and in the southwest, on water because these crises are going to grow throughout this country and we need to address it more specifically in our priorities.

Ms. Campbell and Mr. Feild mentioned this also in his testimony the issue of nonnative species of plants that have entered into this system. This, obviously, is taking up a lot of water. This is something that's happening throughout the United States, by the way, Orlando, and now this other species that apparently is not only blocking the river, but I'm sure absorbed up a lot of water in the process.

I don't know how the environmental community feels about this, and so I guess I'm going to ask you, since you're here, about using extraordinary ways to try to rid the river of this species. Sometimes it takes extraordinary means to do something like this. Has there been talk in the environmental community of using chemicals that in the short run may seem somewhat odious, but in the long run could provide for better and more healthy river systems?

Ms. CAMPBELL. There are problems, yes, I'll be frank with you. We are dealing, though, with an invasive species, nonnative species, exotic species, if you will. Never mind how it got there.

Yes, it is an exotic species. It is not native. It is not something—we prize our native plants, but this is not a native plant. We have been attending the meetings. Right now it is in the hands of Mexico. It is not in the hands of the environmentalists.

We, as a rule, do not believe that spraying should be introduced into the river. There are, however, some products that are more short-lived than others, and so we have—we are looking at it. We're not saying that we do—across the board do not approve. We are saying that there is a question in our minds because the Rio Grande, when it is open, is a very important estuary to the Gulf of Mexico. It is terrifically productive, particularly for white shrimp, for snook, which is a game fish. The only place that snook breed, other than Florida, is at the mouth of the river.

So we need to be very, very careful about what we do. Sometimes we think, "Well, this is for a very good reason, so let's go ahead and do it," but then we don't think of the consequences. And these invasive species were introduced, quote, unquote, for a good reason, perhaps, but without looking at the consequences of how they might block the river. And, yes, we are aware that they use water,

and, yes, we are aware that they are there, and, yes, we have been down to the river. So we will try our best to work within the parameters that we are given, but we will also be there to advise or to point out problems that may arise.

And Mexico is right to question because they don't want to poison their people by something. And, you know, I can't speak for Mexico except to say that I have been in meetings. They do want biological studies. And that appears to me to be what is holding up the poison, if you will, of the invasive species.

Mr. CALVERT. Appreciate your help. Thank you. Mr. Ortiz.

Ms. CAMPBELL. By the way, I do have written testimony, and I would ask that that be—

Mr. CALVERT. It will be entered into the record, and we will keep the hearing open to enter any testimony into the record.

Ms. CAMPBELL. Very well. Thank you.

Mr. ORTIZ. Thank you, Mr. Chairman, and I want to thank the witnesses for their eloquent testimony this morning. I feel like my good friend Mr. White. We've been working on this issue for many years. I am angered by what has transpired in the past, and I can assure you these members who are here will not let you down. We're going to fight for you, and we're going to fight for our community, and I have in the last few weeks considered maybe imposing sanctions on Mexico. And this is only on my own personal. We need to be sure that they get our attention, and trade is very important because it's two countries, and maybe formulate a plan that those areas where they are using or utilizing some of this water, prohibit their exports from coming into this country. This is only a consideration now. I hope that we can in a very amicable way arrive soon at a solution.

Do you think, Mr. White, that sanctions might work?

Mr. WHITE. Congressman, I don't know. Obviously, any type of punitive actions possibly could do some good. The problem we have now, we're so behind the eight-ball in time that by the time those sanctions take effect and would force Mexico to the table, we might be out of business. That's our concern right now.

Obviously, though, for the future, they're going to have to be considered. Short time approaches. I really don't know with the limited supply of water Mexico has. They do have some water, though. They can give us some water that will help alleviate our position right now and can do that continually at least through the growing season.

No, it will not meet all of our needs, but it will reduce a lot of our losses. One thing that might be considered is actual economic reparations to these people that have suffered down here because of the inability or the unwillingness of our Federal Government to protect us. It is the State Department's responsibility to protect U.S. Constituents who are impacted by this treaty. If they are not going to do that, then these people should be entitled to reparations for the damages that inactivity has cost them. So that could be something else also considered.

Mr. ORTIZ. We'll look at that because I think that we have the responsibilities—sometimes those of us, you know, might not have the votes to get things done.

Mr. WHITE. I understand.

Mr. ORTIZ. But, as you can see, this is a bipartisan committee. And I love my Chairman. He's a great guy. No, we have worked—not only do we—are we members of this National Resources Committee and a member of this Subcommittee, but we're also members of the Armed Services Committee. And you'll see that most of the members serve on both committees, as Mr. Rodriguez, myself, and my Chairman here.

But I think that they understand the frustration that this community and other communities are going through, and we want for you to give us your recommendations as to how you see or what we need to do to repair this damage. And I agree with like when the gentleman in the State Department said, "Maybe by September we'll get the water." Well, this is not going to help the farmers. There is a season for planting. September is not the season to begin planting at all.

And I know that this is one of the second—next to Las Vegas, Nevada, this is the second largest populated place in the nation, growing by leaps and bounds.

Mr. Feild, how is that impacting now, you know, that since we're growing so much, and, economically, has this community felt the impact?

Mr. FEILD. This community has not really felt the impact yet, Mr. Congressman. I think we're just beginning to wake up. Some of the leadership here has seen the problem coming and has tried to plan for it. I—without appearing to throw bricks, our media has not kept our people informed of the problem and, all of a sudden, we have a crisis thrust upon us which has created a lot of fear and panic in the community.

Realistically, we constantly have to be looking for solutions. Not just solutions for today's problems, but 5 years, 10 years, 20 years down the road. Those are the things that we need to be looking at. All we can do right now is react. We—the factor of being able to plan has been taken away from us. We can plan for what's going to happen in 10 years, and that's where we need to be.

As far as what impact that this is going to have on our economy, obviously, there is a great deal of uncertainty now as to what our water futures are. That impacts on recruitment of new industries. It impacts on expansion of existing industries. And the fact that we are tied at the hip with Mexico, Matamoros, and sister city relationships all up and down the border means that what happens in one area is going to impact dramatically in the other area.

So we can't look at this just as the U.S.'s problem. We can't look at it just as U.S. Farmers' problem. It also involves the municipalities. It also involves Mexico, their farmers, their municipalities. It's a regional problem for all of the people who drink from the river.

Mr. ORTIZ. Thank you. You know, somebody told me one time that they had developed a herbicide by the name of Komeen or something like that. Has that been tested? Is that a safe chemical?

Mr. WHITE. Yes, sir. We use it all the time on our interior canal systems. It's used widely throughout the Valley, even in a lot of water treatment plants in your—you know, in the reservoirs and everything. It's just a copper-based product that basically the plant will take up and will fragment its cells. It's used quite commonly everywhere.

Mr. ORTIZ. Because, if I understand correctly, Ms. Campbell, the hydrilla is eating up the native plants. Am I correct when I say that, or is it not?

Ms. CAMPBELL. I really wouldn't say that. That's not my understanding of the hydrilla eating up the native plants. What it is doing is taking up space in the river and taking up water, and that is the problem, and blocking the flow of water.

Komeen is something that is being studied, and it can be used if properly applied. It does have a rather short life. It just needs to be—it should be applied in flowing areas, which right now the river is not. But, there again, I would leave that to other people, except tell you what I know about it. I am neither a chemist nor a scientist.

Mr. ORTIZ. But if I understand correctly, Mexico government is against utilizing these chemicals. Is that a problem?

Ms. CAMPBELL. They are against using the chemicals, yes, sir, mainly because many of their processing—they do not in many places have water processing testing plants that might screen out chemicals. Some people even use the water directly from the river for domestic purposes.

Mr. WHITE. Congressman, the Mexican border towns now realize that this is a tremendous, tremendous problem and something has to be done. They have agreed now to have a chemical treatment as a experimental project done below the intake of Matamoros, which is the last, you know, draining water intake on the Mexico side.

So there is going to be a test pilot, so to speak, where they will use some different chemicals to see how they will work and also what the end results will be. They will be monitored and everything. So they realize that the problem is just as—it's probably greater for them than it is for us in certain situations. So they want to do something just as much as we do.

Mr. ORTIZ. Do they have an effective date when they might start doing such a thing?

Mr. WHITE. Supposedly, all this has to be arranged through the IBWC, and let me tell you, as you can see from our experiences with IBWC on this water issue, there is no telling how long it will take.

Mr. ORTIZ. We'll put a little fire under that. Thank you, Mr. Chairman.

Mr. CALVERT. Mr. Rodriguez.

Mr. RODRIGUEZ. Thank you, Mr. Chairman, Mr. Feilds, and I guess all three of you, I wanted to ask you one question and I'll also make some comments. But one basic question. And I gather from some of your comments that the seriousness of the situation has not filtered down to the grass roots, and at least maybe some indications of that are that we still have some segments of the community that might not understand how serious this situation is.

And I would want maybe to get some feedback from all three of you as to what else we might be able to do, informing coalitions or other groups or working with the other side, in helping to educate each other as to what needs to happen on both sides in order for it to occur.

And I know that, you know, from my perspective, I've worked real hard to get a World Birding Center in Starr and Hidalgo, and

I don't know if people understand the importance of the—what the Audubon Society has done for the birds. Two-thirds of all the species of North America—Mr. Chairman, two-thirds of all the bird species of North America come through Cameron, Hidalgo, and Starr, those three counties, and most people don't realize that. And we—it's not only in terms of the importance of those species, but also the importance of the tourism and the dollars that it brings.

And I know Mr. Feilds realizes the resource that it brings. A lot of people think of, "Well, birds, what does that mean to me?" But it means dollars. It means a lot of other things, and I know that it's difficult. I reside in an urban area and I have a—and I also represent rural area, and I have a rough time explaining to urbanites the importance of farmers and the fact that we all have a stake in farming, and we all eat, and we all have a stake. If the farmers are having trouble, we're all having trouble.

And so I also want to just indicate that I heard all three of you loud and clear. I also heard, Mr. White, your frustrations with both the State Department and any Federal administration, and I would say that that occurs also not only with the Democrats but Republicans aside. We always—we seem to have as a Congress from the legislative branch, you know, have difficulty with the bureaucrats, and we sometimes share that same frustration from that perspective, but I wanted to get your feedback as to what else we might be able to do to help educate, help coordinate, and help get support both from Mexico and from this side on the subject.

Mr. WHITE. Congressman Rodriguez, I'd like to say one thing. The A&M report out now shows that the lack of having this treaty obligated water, this 1,500,000 acre feet of water, has cost this region $1 billion, and that's with a "B.".

We are the lowest per capita income region in all of the United States. You can't tell me that it hasn't affected everybody indirectly in this whole region when you take $1 billion out of the economy. That's from Brownsville all the way to McAllen, whatever. Everybody has been affected.

Mr. RODRIGUEZ. If I can interrupt you right there, for the Chairman and for Grace Napolitano, Starr County, which I represent, in the 2000 census was one of the poorest counties in the entire United States.

Mr. WHITE. Yes, sir. And taking this amount of revenue out of our economy has been a huge hickey, and right now the sad thing is this is the worst year that we're facing. What the damages are going to be this year could far overshadow what that $1 billion did from each of the other past years. It could very well double or triple individual years within that $1 billion timeframe. It's very scary, very, very scary.

Mr. RODRIGUEZ. I want to get some feedback from all three of you as to maybe what other recommendations you might have as to what else we could do to reach out to the other side, those people that might feel the same way that we do in terms of kind of making things happen.

Mr. WHITE. Well, Congressman, I'll shut up after one other thing, but I know we have had a conservative effort to get with the Mexican growers on the Tamaulipas side, and this is getting to be a very good union now. We're holding our hands because we realize

that the problem to our whole situation—their water comes from our same source, this Rio Grande River, and for every drop that we're supposed to get from the treaty, they get two drops. Well, since we haven't gotten our one drop, it's been a double impact on them.

They know that the State of Chihuahua has been illegally hoarding and using this water. We are in agreement on that and we have reached out to them. So in the sense of making it known throughout the community, we have gotten that working now in a binational sense where we're going arm in arm together.

Ms. CAMPBELL. I think regional water planning is very important, and by the region I'm talking about the whole basin. But I would also say that perhaps we might look at the—the Texas experience with Senate Bill 1 where we were divided into regions and each of us in the regions where we lived then studied those problems and those good things that we had and are coming up with recommendations.

Now, the Senate Bill 1 has a 50-year life-span, if you will, and most of us won't be around at the end of that time. But we do feel that we are looking ahead and that we are planning ahead. How we might make a sovereign country come to the table and do that type of planning with us, I can't give you that answer. But I can say that perhaps through diplomatic sources we might get them to look at similar problems that we have had in Texas and then to look at planning with Mexico.

Now, in our region and committee, which I sit as an environmental representative, strangely enough, we always have an interpreter present. People from Mexico and from the Mexican water authorities are always welcome. And that is part of our plan.

We have had to revise our plan over what it was because we did not get the water from Mexico, and it does not look as if we are going to have it in the conceivable future. So we are looking then at other more innovative ways, which I spoke about, and also we are looking, and the farmers and ranchers are looking, at ways to augment their income by tourism and that nature tourism that I spoke about, and that you spoke about the World Birding Center, which was one of the entities of this whole nature tourism in the Valley because now almost every little town has a nature center and they invite birds and they put out feed for them and they leave native plants for them.

And I have a little bit of just a few suggestions that I'll bother you with, but it is in my testimony also. Over 200,000 people come to the Valley to watch birds and wildlife every year, every year, accounting for more than 100 million in spending.

Now, I'm not saying that that should surpass agriculture. I'm not saying that at all, and I don't want to leave that impression. What I am saying is that we can work together on this and that we can look at agriculture to go on, because we've been known as a bread basket since the '20's. At any rate, we want to continue to be a bread basket. We're proud of that.

We do not want to see our Valley become a parking lot, if you will. And that is what may very well happen if we do not keep agriculture alive. If our growers cannot continue to grow and work, then that land will have to be sold at some time. And where will

it go? It will go to that urban sprawl, and that's what scares a lot of us. And that would also dry up one of the life bloods of the Valley, which is nature tourism. Thank you.

Mr. CALVERT. Thank you. Gentleman, time has expired. Ms. Napolitano.

Mrs. NAPOLITANO. Thank you, Mr. Chair. There were comments by Mr. White that I also was questioning who and why the State Department hadn't moved forward on this years ago since they know—and I know I was briefed by Congressman—my colleague, Solomon Ortiz a year and a half ago, who called me to his office, "The water commissioner is here, why don't you talk to him?" And so we sat and talked about it.

Well, you kind of expect agencies to take care of things, but, somehow, it's been lacking. For whatever reason they have not moved forward. That's why I had suggested earlier that maybe a congressional inquiry, as was brought up, might move it forward. But even that, that's not going to help now. The crisis is here now.

Is there any movement by the affected communities, their mayors, to appeal to the Governor for emergency legislation to be able to draw Federal funds, declare it an emergency area, and at least begin the process of being able to address this? We do it for hurricanes. We do it for fires. We do it for other things. Why not—I mean, you're in dire straits.

You're losing not only money, you're losing habitat, you're losing a lot of businesses. The economy and the people are being affected, not just on this side, but on the other side. How do we maybe get some of these folks to sit and understand how critical—how important this is? Then the other—and I'm sorry that my friends from the Bureau and from the State Department left because one of the things—

Mr. WHITE. I'm not surprised.

Mrs. NAPOLITANO. Well, we really should have them sit and answer some questions because one of the questions I have is dredging. What can they do? And my specific question to the lady was "Are you funded?" And, of course, they're not.

Well, excuse me, then how do you expect to be able to help the region be able to address some of the issues if you don't have the funds to carry out projects?

Dredging is essential. Now, if it's choking the lifeline out of the river, then we need to get the Bureau to move on that, and that's some of the things that I was hoping that somebody would—they're still here? No? OK. But both agencies. And one of the other things is do the agencies talk to each other?

Mr. WHITE. I don't know that. I really don't know.

Mrs. NAPOLITANO. Do they communicate? And especially for this area as regards this region, any idea?

Mr. WHITE. The only thing I can tell you is over 4 years ago I was in Washington. We were sitting in the State Department, we had some very high State Department people in there. And after we pled our case to them, they said, "I want you to know this is of the highest priority, of the highest priority." And, I mean, they hit the table, "This is of the highest priority to get this thing resolved.".

Mrs. NAPOLITANO. How long? For 5 minutes maybe.

Mr. WHITE. Oh, yeah, but just kept hammering, "It is the highest priority." Well, by God, that was 4 years ago. I wonder what has happened to the low priority items. That was 4 years ago.

Mrs. NAPOLITANO. And one of the things is the Administration has changed. Sometimes with leadership changes they take different priorities. But maybe if we find out who in the State Department to talk to and we start with them and bring them to the table and say, "OK. What have you done in 4 years?".

Now, one of the other things that I wanted to ask are the water districts in the communities prepared to take action if the Federal assistance comes down? Anybody?

Mr. WHITE. In what way, ma'am? I don't quite follow you.

Mrs. NAPOLITANO. In dealing with trying to address the immediate need.

Mr. WHITE. Economically?

Mrs. NAPOLITANO. Economically. Of course, water deliveries and other things. But, I mean, if you—and I'm not saying about release of water because that's still very contentious.

Mr. WHITE. Well, obviously, what I was referring to a while ago about economic reparations, that would go more or less to the ag community. As it is now, the cities in a sense have not been impacted by this water shortage because of the unique way we run the Rio Grande System. Their water supplies are protected. They have not had a shortage.

Mrs. NAPOLITANO. But if you were able to take some of that muni water and transfer it to water, wouldn't that be of some help if you had ability to deal with additional water supply to the muni?

Mr. WHITE. Oh, yes. I mean, any type of water supply would help.

Mrs. NAPOLITANO. I mean, putting everything into a puzzle, fitting a puzzle, it isn't just one thing that's going to help address this, it's many things, and it's all agencies working together. Am I correct?

Mr. WHITE. That's correct. As a matter of fact, the next panel coming up, they're going to address that in depth.

Mrs. NAPOLITANO. Then with Ms. Campbell, I agree with you, we need to look at desalination. We need to be able to look not only at desal, but conservation, which California has done, also storage, because you apparently don't have aquifers. So maybe storages.

Ms. CAMPBELL. Well, we do have some aquifers. But some of that water is not potable. And so we're looking at desalination of groundwater also as well as seawater. So, yes, and we have some—we do use some wells in the Valley. I myself have three wells. So we look at everything, or try to.

And as far as dredging in the river, there has been some dredging. A cutter dredge has been used to work the hydrilla. But one of the things about it is it makes small particles and then they go off and grow more. It kind of acts like a mother and lets it go every place. So it would have to be a dredging—a large dredging operation. I'm not sure.

Mrs. NAPOLITANO. With some pesticide added to it so it doesn't come back.

Ms. CAMPBELL. Perhaps. And I'm not advocating that, you understand. We're just brainstorming here. Because I would have to look at all the measures to see—to support that.

Mrs. NAPOLITANO. Thank you very much.

Mr. CALVERT. Thank you, gentlelady. OK. I certainly thank this panel for your testimony and for answering our questions. We appreciate it very much. Mr. White, I can tell you have a final comment.

Mr. WHITE. Mr. Chairman, there is one grower sitting right behind me that came up and wants to know if he could just make one brief comment during this segment.

Mr. CALVERT. We'll make an exception here, and we'll have this gentleman make a brief comment so we can move on to the last panel. Please, for the record, please state your name.

STATEMENT OF SAM SPARKS, PRESIDENT, VALLEY WATER DISTRICT AND IRRIGATION DISTRICT

Mr. SPARKS. My name is Sam Sparks, and I'm president of Valley Water District and Irrigation District. We have released our manager. We let him go because we have no water to sell so we had no income, and, as a result, we have paced the district way down.

But as far as seeking out support in Mexico to help us as we deal with this, I think the political ramifications would spark tremendous movement on behalf of Mexican interest if we just said, "Look, a million and a half acre feet of water that's flowing down to you from Colorado—the Arizona and the California interest can do that and put in new lands and do with that water and will make great use of it. Now, you're getting a million and a half there and you're getting 60,000 for Juarez, and you owe us 450,000 and you can't pay us 450,000 while we're delivering a million and a half plus 60,000 to you?".

Just take that water and say to Mexico—the beneficial users over in Mexico, if they saw they were going to lose Colorado water, don't think they wouldn't put pressure on Fox to deliver water out of the Rio Conchos down here to this area. But we could just say, "Look, we're going to take the Colorado water and we're going to sell it to the Arizona and the California interest, and we're going to take that money and come to the Rio Grande Valley and we're going to shrink the irrigation districts down to 40 percent of the size they are now, and we're going to only count on water that originates in the United States to meet this need."

Mr. CALVERT. Thank you. Thank you, gentleman. I thank this panel.

Mr. CANTU. May I have permission to address you?

Mr. CALVERT. Just a very quick statement. Please state your name and occupation for the record.

STATEMENT OF ARNOLDO CANTU, FARMER

Mr. CANTU. My name is Arnoldo Cantu. I'm a retired teacher, retired lieutenant coronal from the Air Force. I'm farming and doing a beautiful job of planting seed in dry land. I wish you would—before I start, how many of you are farming on the panel? Are you a farmer?

Mr. CALVERT. No, sir.

Mr. CANTU. Well, only a farmer can tell you right now the problems that we have. Not one farmer would cease planting to feed the people in the United States. We do not have the water to even make our money. We have been for 5 years we had a horrible time. Who do we talk to?

For the last few years a tremendous amount of people have tried to help us. We cannot keep on blaming the lack of water. It's a whole situation. In Oregon and California a little sardine kept the farmer from getting the water. Here we have a lot of things keeping us from getting the irrigated water. We need help and we need help yesterday, not today.

Congressman Ortiz will verify that I was in Washington in April, and we addressed a Hispanic group of congressmen out there, and yet—they're wonderful people, but being wonderful doesn't help to survive. The dinosaurs disappeared. We don't know now why. Farmers will disappear from this area if we do not get help.

And I want to thank you people for being here, and look closer to what we're doing. We're all trying to help one another. We need help now, not tomorrow. Thank you very much.

Mr. CALVERT. Thank you, gentleman. I appreciate your comments, and that's why we're here. And I'm going to introduce the last panel, Mr. Ken Jones, executive director, Lower Rio Grande Valley Development Council; Carlos Rubinstein, the Rio Grande Watermaster, Texas Natural Resources Conservation Commission; and Wayne Albert, General Manager, Harlingen Irrigation District; and James McCarthy, rancher and farmer.

Mr. CALVERT. I thank the witnesses. You've probably—you've been in the audience and heard our request. Please keep your testimony to within 5 minutes. Any additional comments, exhibits, et cetera, will be entered into the record. And with that, Mr. Jones, you may begin your testimony.

STATEMENT OF KEN JONES, EXECUTIVE DIRECTOR, LOWER RIO GRANDE VALLEY DEVELOPMENT COUNCIL

Mr. JONES. Mr. Chairman, members, good afternoon. It's good to have each of you here. It's a pleasure to be here with you today.

For the record, my name is Ken Jones, and I'm the executive director of the Lower Rio Grande Valley Development Council, the regional council of government serving Cameron, Hidalgo, and Willacy County.

My testimony today will focus on H.R. 2990 and how this legislation relates to the regional water supply plan completed for this region.

In addition to the Development Council, I'm also representing today the Rio Grande Regional Water Planning Group that is comprised of eight counties. These counties included, in addition to the aforementioned three, Starr, Zapata, Jim Hogg, Webb, and Maverick.

Region Water Planning Group was created as a part of implementing Senate Bill 1 as approved by the Texas legislature in response to the statewide drought conditions that occurred here in the late 1990's. There are 16 water regional planning groups in

Texas charged with the development of the statewide water supply plant.

The development council was selected by the Water Planning Group as the designated political subdivision to provide the administrative support and physical accountability for the planning for within the same county region.

Prior to the passage of SB1, the Rio Grande Valley took the initiative to seek and receive funding to develop an integrated water resource plant. Referenced on page 2 of my written testimony are the detailed recommendations cited within that particular plan. And for the purposes of saving time, I want to focus on the first one, which states the irrigation canal system must be improved to reduce the transmission losses to the maximum extent possible.

This recommendation was the basis for the Lower Rio Grande Valley Water Resources Conservation and Improvement Act of 2000, which H.R. 2990 proposes to amend.

As the Texas statewide process got under way, the Rio Grande Regional Water Planning Group built on this prior planning for all eight counties within this region. This expanded planning was completed in January of 2001 and later approved by the Texas Water Development Board.

On page 3 of my written testimony is the outlining of the water management goals identified within this most recent plan, and I want to focus briefly on the first two priorities that occurred in more recent regional planning. That is to optimize the supply of water available from the Rio Grande and minimize irrigation shortages through the implementation of agricultural water conservation measures.

As noted in the recommendations of both of these plans, improving the infrastructure for water conveyance systems and on-farm conservation measures provide the maximum water yield for every dollar spent. And that's worth repeating.

As noted in the recommendation of both of these plans, improving the infrastructure for water conveyance systems and on-farm conservation measures provides a maximum yield for every dollar spent.

So, in conclusion, as a region we have united to assess our water supply needs. Priorities have been set, and plans have been completed. And with your support of H.R. 2990 we'll be one step closer to plan implementation. Thank you for the opportunity to be here.

Mr. CALVERT. Thank you, gentleman.

[The prepared statement of Mr. Jones follows:]

Statement of Kenneth N. Jones, Jr., Executive Director, Lower Rio Grande Valley Development Council

My name is Kenneth N. Jones, Jr., Executive Director of the Lower Rio Grande Valley Development Council (LRGVDC). The LRGVDC is the Regional Council of Governments representing the three (3) southernmost counties in Texas: Cameron, Hidalgo and Willacy Counties. The LRGVDC is a voluntary association of local governments created in 1967 to deal with the regional planning needs that cross the boundaries of individual local governments, and this is accomplished through cooperative action by Cameron, Hidalgo, and Willacy counties. The LRGVDC provides an effective link between both federal and state government programs and the cities and counties where people are served. Membership in the LRGVDC include cities, counties, school districts, educational institutions, special purpose districts and others. The LRGVDC has more than 35 years of experience and performance in intergovernmental cooperation.

My testimony today will focus on the extensive planning that has taken place in the region to address water supply needs, and to provide supporting documentation as to the critical importance and urgent need for the passage of H.R. 2990.

REGIONAL WATER PLANNING EFFORTS

1995 - 2002

In late 1995 at the conclusion of the hurricane season, it became painfully evident that inflows into the Amistad and Falcon Reservoir system were continuing to decline with no relief in sight. As reservoir levels were rapidly approaching the lowest levels since the construction of Falcon Dam in the late 1950's, water rights holders within this region rallied together to assess the situation and determine the next steps that should be taken.

Through these initial meetings and deliberations, a general consensus was reached that a comprehensive water supply plan was needed to evaluate the current and projected water supply situation for all water users and provide recommendations for meeting the water supply demands for the region.

As support expanded for the development of this water supply plan, the LRGVDC was successful in 1997 to secure federal, state and local funding to prepare an "Integrated Water Resource Plan" (IWRP) for Cameron, Hidalgo and Willacy Counties. To guide this process, a Policy Management Committee was created comprising representatives of municipal, agricultural, industrial, private and environmental interests. This planning process was successfully completed in February 1999 with final Plan approval by the Region. Recommendations cited for immediate action included the following:

The Irrigation Canal System must be improved to reduce the transmission losses to the maximum extent possible.

Justification—The irrigation canal system delivers untreated water to both irrigators and domestic customers throughout most of the Lower Rio Grande Valley. The study revealed significant water losses in this aging delivery system. Also, the full benefit of the on-farm water savings cannot be achieved without these canals improvements. A program to reduce these loses will provide a greater quantity of water for beneficial use.

Economic incentives must be established to encourage irrigators to implement on-farm water conservation measures such as, metering, poly or gated pipe and drip or micro jet systems and to provide education to receive maximum benefit.

Justification—Since approximately 85% of the current water consumption in the Lower Rio Grande Valley is in agricultural production, water conservation will have a significant impact. Additionally, agricultural economics is marginal for many crops produced.

An enhanced region-wide municipal and industrial water conservation program must be established.

Justification—Water conservation programs have been adopted by many of the municipalities and water supply corporations. The "Water Smart" program has been pursued Valle-wide.

A region-wide water accounting system must be established to permit the accurate measurement of the efforts of implementation of water conservation projects.

Justification—In the development of the technical analysis for these recommendations, a number of water related data sets available from sources in the Valley and at the State level were reviewed and utilized. In many cases, inconsistencies were noted between the data sets and the level of accuracy was inadequate. To measure water conservation actions recommended, a reliable and complete region-wide water accounting system is needed.

As the region's IWRP process was getting underway, there was also a statewide drought occurring. During 1997, the 75th Texas Legislature enacted Senate Bill 1 (SB 1). S.B. 1 established a "grass roots" approach to plan for the State's future water supply. This approach called for the preparation of regional water plans by appointed Regional Water Planning Groups (RWPG's). The IWRP process took place during the development of the S.B. 1 legislation which incorporated many aspects of the Lower Rio Grande Valley's planning efforts.

The Rio Grande Regional Water Planning Group (RGRWPG) for Region "M", is one of 16 local bodies established by the Texas Water Development Board (TWDB). The RGRWPG consists of 19 voting members representing 10 of the 11 interest group categories specified in S.B. 1. Only one category was excluded which is, river authorities, since no river authority exists in this region. The RGRWPG also consists of non-voting members representing federal and state agencies and Mexican representatives.

Eight counties are represented within the RGRWPG which are: Cameron, Hidalgo,, Jim Hogg, Maverick, Starr, Webb, Willacy and Zapata Counties. The objec-

tives of these regional water plans was to assess future water demands against current and projected water supplies and include specific recommendations for meeting identified water needs through the year 2030, and longer term needs through the year 2050. The Regional Plan was adopted by the RGRWPG in December of 2001 and adopted by the TWDB in April 2002.

The RGRWPG Plan noted five (5) Water Management Goals to meet the region's water supply needs. These goals are:

- Optimize the supply of water available from the Rio Grande;
- Minimize irrigation shortages through the implementation of agricultural water conservation measures and other measures;
- Reduce projected municipal water supply needs through expanded water conservation programs;
- Diversify water supply sources for domestic, municipal and industrial (DMI) uses through the appropriate development of alternative water sources (e.g., reuse of reclaimed water, groundwater and desalination;
- Recognize that the acquisition of additional Rio Grande water supplies will be the preferred strategy of many DMI users for meeting future water supply needs.

As it is clearly noted in the recommendations of the RGRWPG Plan and the earlier IWRP, priority emphasis is placed upon improving infrastructure in both the water conveyance systems and on-farm conservation measures. When considering achieving the maximum water yield for every dollar spent, these infrastructure improvements rise to the top. If these Plan recommended improvements are fully implemented, a water savings of approximately 260,000 ac-ft/yr could be achieved which is an amount equivalent to meeting the current raw water DMI needs of Cameron, Hidalgo and Willacy Counties. These three counties comprise over 80 percent of the total population in the RGRWPG's eight (8) County region. This amount is also approximately equivalent to the additional DMI water demand projected for the year 2050.

In summary, it is clear that H.R. 2990 is in direct support of, and consistent with, the water supply planning that has been conducted for this region. Additionally, H.R. 2290 is crucial to the economic survival of the agricultural community in our Region. Further, this Bill provides for a major step in the implementation of the IWRP and RGRWPG Plans. The drought coupled with Mexico's non-payment of water consistent to meet that country's obligations under the terms of the 1944 Treaty, heightens the urgency for approval of H.R. 2990. As a region we have united to access our water supply needs, to set priorities and to complete the plans. Now, as a region, we are seeking your support for H.R. 2990 to take a positive step towards Plan implementation.

Thank You.

Mr. CALVERT. Mr. Rubinstein.

STATEMENT OF CARLOS RUBINSTEIN, RIO GRANDE WATERMASTER, TEXAS NATURAL RESOURCES CONSERVATION COMMISSION

Mr. RUBENSTEIN. Mr. Chairman, more extensive comments were submitted to the Committee, and I'll be as brief as I can.

The United States began the year with the least amount of water for January at Amistad and Falcon as compared to any year within the current 10-year cycle. Texas water utilization and markedly reduced inflows over the past few months, coupled with Mexico's low reserves have caused water levels at Falcon Lake to drop rapidly.

We have increased our releases from the upstream reservoir, Amistad, to maintain Falcon and meet our water demands in the lower Rio Grande. Given current conditions, we are predicting that by the end of May or mid-June, both Amistad and Falcon will reach new low levels. This will not only impact recreational activities, but they also impact power generation capabilities at both international reservoirs.

Lack of water inflows to the Rio Grande, be it from drought or lack of water deliveries by Mexico, directly and singularly affect ir-

rigation water use. Within the court mandated system we operate from the Rio Grande, irrigation water rights have a lower priority of use as compared to municipal.

Irrigation, however, remains a critical and integral part of our local economy. Impacts due to lack of irrigation water over the past 10 years includes the following: Average irrigation diversions from the Rio Grande below Amistad for the United States just prior to cycle 25, or 1992, total 1,333,000 acre feet per year. Average irrigation use from 1997 to 2001 was reduced to 770,000 acre feet, a 563,000 acre-foot or 42 percent reduction on average.

Irrigation districts in the lower Rio Grande began April 2002 with 266,000 acre feet less water than they had in April 2001. This deficit equates to slightly over 1 month of total peak irrigation water use.

All of this has contributed to a loss of approximately 103,000 acres of irrigated land in Cameron and Hidalgo counties alone as compared to 1992 totals.

The highest priority pool held by the TNRCC's Rio Grande Watermaster program at the Amistad and Falcon is the water reserved for all municipal uses. It is reestablished monthly to cover roughly 1 year's average municipal diversions. Municipal releases from Falcon, downstream along the Rio Grande and it's conveyance through irrigation districts rely heavily on irrigation water being in the conveyance channels. In essence, municipal water rides on top of irrigation water.

As irrigation districts run out of irrigation water, they will require pushwater to simply convey municipal water to end users. Authorizing the use of pushwater represents an additional in-system loss that directly affects all irrigation water right accounts.

At least three irrigation districts in the lower Rio Grande are likely to run out of irrigation water in the coming weeks—in the coming months. Each of these districts serve various municipalities.

While present before the drought, growth of noxious aquatic vegetation, particularly water hyacinth and hydrilla, has been aided by the lower than normal flows and warmer weather and water temperatures. The growth of these non-native aquatic weeds has inhibited water flows, increased water use as well as water loss due to increased plant consumption as well as evaporation.

Additionally, the weed mats have reduced channel capacity for water conveyance and affected telemetry flow measurement stations.

Of principal concern to the Rio Grande Watermaster program is the amount of water in excess of actual demand that at times has been released from Anzalduas Dam to push the demand water to the end users. At times the release has been increased by as much as 500 cubic feet per second above calculated demand to ensure timely delivery of water within travel time estimates.

The amount of water over demand released to meet U.S. Needs approached 1,000 acre feet per day during the spring and summer months of 2001.

Over a peak 1-week period, the amount released in excess of demand roughly represents the total amount of water that many of our small and medium-size municipalities utilize in an entire year.

These releases over demand result in an overall system loss that is to the detriment of the entire system and to irrigation water right holders and accounts in particular.

Many Federal and state funded remedial actions have been implemented over the past few years to include mechanical removal of the weeds as well as introduction of predatory insects. A pilot project, the introduction of predatory fish, or triploid carp, is nearing completion. Once approved, as many as 20,000 triploid carp, costing between $5 and $10 apiece, will be required to address weed infestation.

Other folks have already testified about our efforts to use chemicals in the Rio Grande to combat this problem. Thank you.

Mr. CALVERT. Thank you, gentleman.

[The prepared statement of Mr. Rubinstein follows:]

Statement of Carlos Rubinstein, Rio Grande Watermaster, Texas Natural Resource Conservation Commission

BACKGROUND

The Rio Grande Watermaster is responsible for allocating, monitoring and controlling the use of surface water in the Rio Grande Basin from Fort Quitman to the mouth of the Rio Grande. The jurisdiction covers 1173 miles of Rio Grande, 382 miles of U.S. tributaries and approximately 1600 water right accounts.

Unlike elsewhere in Texas where water is a flow resource, surface water in the Rio Grande below Amistad is a stock resource meaning that water accumulates in Amistad and Falcon reservoirs and is released on demand. Amistad and Falcon reservoirs are considered one system with water frequently released from the upstream dam (Amistad) to replenish Falcon reservoir and meet the demands in the Lower Rio Grande Valley. The watermaster is the authorized agent allowed to request releases of United States water held in storage at Amistad/Falcon.

Water rights and distribution in the Rio Grande are based on two factors: 1. the maximum volume assigned by law to each water right holder, by use, and 2. priority of the use. All water rights have a maximum annual allowable, but because the total legal demand for water always exceeds the supply, only the highest priority uses receive the full amount of their water right. The following are the weighted priorities:1) Domestic Municipal and Industrial (DMI) uses (highest priority), 2) operational, and 3) carry over balances for irrigation water accounts. In order to provide for and protect this municipal based priority system the watermaster divides all U.S. waters held in storage at Amistad/Falcon into three distinct pools. The highest priority pool is the water reserved for all municipal uses. It is reestablished monthly to cover roughly one year's average municipal diversions (225,000 acre-feet). The second highest priority pool, reestablished monthly, is water held in reserve (75,000 acre-feet) to cover in system losses and ensure conveyance of water even in periods of low flow and drought. The lowest priority pool is reserved for agricultural interests and consists of leftover water after the Municipal and Operating pools have been reestablished. This irrigation water pool consists of leftover irrigation storage that has not been used and new net inflows. Consequently, it is the irrigation reserve that is directly affected by in system losses exceeding inflows and lack of water deliveries. This priority based system also mandates that municipal water be treated differently from irrigation in the allocation process. At the beginning of the calendar year, each municipal water right holder's account is replenished to its full amount. No leftover water is rolled over to the new year. Agricultural accounts on the other hand are replenished only when monthly inflows are in excess of losses and the water needed to reestablish the Municipal and Operating reserves.

CURRENT CONDITIONS

Lake Levels

The United States began the year with the least amount of water for January at Amistad/Falcon (32.49% or 1,080,676 acre-feet) as compared to any year within the current 10 year drought cycle. Mexico's storage balances at Amistad/Falcon have, since late 2000, consistently remained at or near record low levels. Texas water utilization and markedly reduced inflows over the past few months coupled with Mexico's reserves have caused water levels at Falcon lake to drop rapidly. We have increased our releases from the upstream reservoir (Amistad) to maintain Falcon and

meet our water demands in the lower Rio Grande. It is however evident that absent a significant weather pattern change resulting in beneficial inflows, both Amistad and Falcon reservoirs will hit new low levels this year.

Amistad's previous low level was recorded on August 4, 1998 at an elevation of 1058.4' consisting of 763,121 acre-feet. Falcon's low level was recorded on August 3, 2001 at 246.98' or 199,434 acre-feet. On 4/24/02 Amistad was at 30.92% capacity with an elevation of 1067.47' or 974,471 acre-feet, while Falcon was at 9.62% capacity with an elevation of 250.62' or 255,373 acre-feet. The United States reserves have consistently remained below previous levels for this time of the year, now having dropped to 30.1% or just slightly over 1,000,000 acre-feet. (At conservation capacity the United States can store 3.3 million acre-feet at Amistad/Falcon).

Given current conditions we are predicting that by the end of May or mid June both Amistad and Falcon will reach new lows. This will not only impact recreational activities but may also impact power generation capabilities at both international reservoirs.

Irrigation Water Supply

Lack of water inflows to the Rio Grande, be it from drought or lack of water deliveries by Mexico, directly and singularly affects irrigation water use. Within the court mandated system we operate for the Rio Grande, irrigation water rights have the lowest priority use. Irrigation however remains a critical and integral part of the local economy.

Impacts due to lack of irrigation water over the past 10 years include the following:

- Average irrigation diversions from the Rio Grande below Amistad for the United States just prior to cycle 25 (1992–97) totaled 1,333,071 AF. Average irrigation use from 1997 - 2001 was reduced to 770,036 AF, a 563,035 AF or 42% reduction.
- Irrigation Districts in the Lower Rio Grande began April 2002 with 266,000 acre-feet less water than they had in April 2001. This deficit equates to slightly over one month of total peak irrigation water use.
- The estimated loss of approximately 103,120 acres of irrigated land in Cameron and Hidalgo counties as compared to 1992 totals.

Municipal Water Supply

The highest priority pool held by the TNRCC's Rio Grande Watermaster program at Amistad/Falcon is the water reserved for all municipal uses. It is reestablished monthly to cover roughly one year's average municipal diversions (225,000 acre-feet). Municipal releases from Falcon, downstream along the Rio Grande and its conveyance through irrigation districts rely heavily on irrigation water being in the conveyance channels. In essence, municipal water "rides" on top of irrigation water. As irrigation districts run out of irrigation water they will require "pushwater" to simply convey municipal water to end users.

Authorizing the use of pushwater represents an additional in-system loss that directly affects all irrigation water right accounts below Amistad, to the benefit of the accounts that use pushwater and the detriment of all others, particularly in reduced allocations and increasing the possibility that negative allocations may have to be implemented from the irrigation accounts further reducing the amount of water available for irrigation.

At least three irrigation districts in the lower Rio Grande are likely to run out of irrigation water in the coming summer months. Each of these districts serve various municipalities.

Aquatic Weeds

While present before the drought, growth of noxious aquatic vegetation (i.e. water hyacinth and hydrilla) has been aided by the lower than normal flows and warmer weather and water temperatures. The growth of these non-native aquatic weeds has inhibited water flows, increased water use as well as water loss due to increased plant consumption as well as via evaporation. Additionally, the weed mats have reduced channel capacity for water conveyance and affected telemetry flow measurement stations at Anzalduas pool near Mission, Texas and downstream to the Gulf of Mexico.

Of principal concern to the Rio Grande Watermaster program is the amount of water, in excess of actual demand, that at times has been released from Anzalduas dam to "push" the demand water to the end user. At times the releases have been increased by as much as 500 cfs above demand to ensure timely delivery of water within travel time estimates. The amount of water over demand released to meet U.S. needs approached 1,000 acre-feet per day during spring and summer months of 2001. Over a peak week's period the amount released in excess of demand rough-

ly represents the total amount of water that many of our small to medium size municipalities utilize in one year. These releases, over demand, result in an overall system loss that is to the detriment of the entire system and to irrigation and mining water right holders and accounts in particular.

Many federal and state funded remedial actions have been implemented over the past few years to include mechanical removal of the weeds as well as introduction of predatory insects. A pilot project, the introduction of predatory fish (triploid carp), is nearing completion. Once approved as many as 20,000 triploid carp costing $5-$10 per fish will be required to address the weed infestation.

Discussions continue with Mexico regarding the use of approved aquatic herbicides to further combat the noted explosive growths along the lower reaches of the Rio Grande.

Mr. CALVERT. Mr. Halbert.

STATEMENT OF WAYNE HALBERT, GENERAL MANAGER, HARLINGEN IRRIGATION DISTRICT

Mr. HALBERT. Mr. Chairman, Committee members, we, again, appreciate the opportunity to be here and speak to you. My name is Wayne Halbert. I'm general manager of the Harlingen Irrigation District, and I represent irrigation districts that supply water to over a million acres of farmland and raw water to municipalities that service 1.5 million people.

Our testimony is in support of H.R. 2990, and that's what I will try to stick to mostly, and I will—I have submitted full testimony, and I'll try to summarize that at this time.

For the past several years, as has already been testified, the Rio Grande Valley and the border region has been involved in integrated resource management studies that have tried to determine what our resource is, what our resource potentials are going to be over the years, and where we can get to from—through conservation efforts and through whatever efforts might be out there to make our resource stretch through the year 2050.

The Rio Grande Valley districts have partnered with Bureau of Reclamation since the 1950's doing conservation projects, and we have—so we have some idea of what projects we might could do in the future to fit into this integrated resource management program.

This program has revealed some very important things to us and has showed us that what projects are—give us the most bang for the buck and how we might—how we might seek other ways to supply our water needs. Many developed projects that we worked on back in the '50's and '60's and '70's remain undone and are still very viable projects, but they remain undone simply because there was not enough funds to accomplish them and the funding chain through BOR dried up as far as the loans were concerned.

Various changes in water resource conditions have made this slow process of trying to each district develop its conservation work. It's made that slow process unworkable and unacceptable. Dryer than normal conditions over the past 9 years have exhausted much of our water supplies, explosive developments in Mexico which have utilized much of the water that we expected to get over the years, that explosive development has taken away much of that water and deprived the U.S. Of greater amounts of water resource and accelerating the crisis.

Admittedly, part of the Mexico issue may be drought related, but the greater part is a change in Mexico's operations of their system that's deprived the U.S. Users of that water.

Population explosion of the Rio Grande Valley is something that we've already experienced and something that these studies tells us is even going to be much, much worse. Expect to double our population over the next several years, and, obviously, the need for that type of water is on an all-time increase.

All of these pressures have turned up the heat on the water resource for the Rio Grande. Today you've heard Valley concerns and frustrations over various issues, and we're pleased that you're here to hear these issues. But what we really want to offer you is a blueprint for at least some of the solutions. We know that many of these issues are going to be very difficult issues to work through, and though I'm as frustrated as anyone else, and being a farmer myself, we need water today just like everyone else does, but we also have to look to see where we're going to be tomorrow, next week, or next year irregardless of what happens today. And we want to give you a blueprint of some of the solutions for that.

The comprehensive water resource studies that you've been provided through the testimony and through other means show us that we do have solutions that could provide a balance to the fragile economy and environment of the border region.

We know that through conservation projects that have been listed and have shown—been shown—a part of which have been shown to you and a part of which are in this bill could supply at least the amount of water that the municipalities use in any given year.

Now, our 2990 does not provide that much water, but 2990 is a significant beginning for being able to do that. And we know that—we know that through projects like the ones that are in 2990 that we have the opportunity to get there through conservation projects.

You all saw the slides this morning that showed some of the amounts of money that were needed for us to be able to get there in 2050, and, obviously, we're talking about a portion of that in these projects, but it is a beginning.

Agriculture use is 85 percent of the water today that's available in our system. And, therefore, agriculture has to be the target for the major conservation projects. 2990 provides that means by which we can get there, and most of the irrigation systems that are listed in 2990 are projects that would greatly improve their ability to deliver water not only to farmers, but free up water for them to be—to utilize to spread that throughout the farming community and also make available water for urban growth in the area.

Most of the irrigation systems, as I said, were built in the early 1900's, and many of the delivery systems that are the life blood of these municipalities and irrigation districts also need to be and must be renovated. There has been in a lot of cases very little improvements done to much of that irrigation system since that particular time.

The agricultural economy is extremely important to our region. A large portion of the workforce is dependent on the agricultural industry. The border aspects of the region only increases this problem and the agricultural layoffs create immediate social problems

far beyond the normal expectations, social problems that affect both sides of the river because much of our work force is so dependent on agriculture.

We testified a couple of years ago that an undependable water supply could do irreparable damage and would push our local unemployment figures out of sight. And now you have a Texas A&M report that estimates that as many as 30,000 jobs have been lost over the past 9 years, and that's directly related to the Mexico shortfall alone.

We have a greater shortfall than just the Mexico issue that the conservation issues could address. But just the Mexico issue alone is involved in that A&M study.

The importance of this legislation has been escalated and accelerated, obviously, by the past several years of drought, Mexico's use of the water resource without complying with the treaty. And we recognize that we may have to live and grow in the future on less water than what we've been accustomed to.

The latest work at A&M University economy has documented losses approaching $1 billion. You've heard all that testimony before over the past 9 years, again, attributed solely to the Mexico withholding of water. But I think there is a greater story here than just the Mexico withholding of water. We are actually using—we are actually using approximately 5 to 600,000 acre feet less per year than we were accustomed to before, and, obviously, the 350,000 acre feet that we're not getting from Mexico is a great portion of that, but it's not the total problem.

We have a problem here that's far beyond just the Mexico issue. It's a problem of conservation that we have to deal with in our issues also, and I think we need to say that.

We continue to lose farms and businesses that have been a part of the Rio Grande Valley heritage for over a hundred years, mostly because the water resource demands the past 7 years have been inadequate. The greatest impacts of these losses today are to our agricultural community. However, associated impacts are obviously beginning to crop up in our communities also. We're seeing community businesses that have a problem with their businesses simply because of the overflow from the agricultural problem.

Water shortages, shortages to the general populace have been held to a minimum, but we are rapidly approaching a crisis in this arena. As I told you all this morning, that when we take the Mexico issue out of the water, we all of a sudden increase our municipal use from 15 percent to about 50 percent of our water, and that puts agriculture in an extremely critical position even quicker.

This legislation allows us to turn these tragic losses around and provide new life and new hope to the whole Rio Grande border region. The infrastructure that is needed to solve these problems is apparent. Districts have planned these needed projects for years and anticipated accomplishing them over the next 20 or so years.

Testimony today has shown you that we do not have that luxury. We have to get to where we thought we were going to get to 20 years down the road, we have to get to there as quickly as possible. Every few acre feet of water not conserved is another family farm gone, another few jobs lost, another business who had to close their doors. Our future, I must tell you again, is in your hands. We ap-

preciate your support of H.R. 2990. And thank you for the opportunity.

Mr. CALVERT. Thank you, gentleman.

[The prepared statement of Mr. Halbert follows:]

Statement of Wayne Halbert, General Manager, Harlingen Irrigation District Cameron County 1, President, Texas Water Conservation Association, Vice President, Texas Irrigation Council

Mr. Chairman, Committee Members and staff, thank you for the opportunity to testify before you today on behalf of the communities and water districts along the Texas Border. I am Wayne Halbert, General Manager of the Harlingen Irrigation District and represent irrigation districts that supply irrigation water to over a million acres of farmland and raw water to municipalities for over 1.5 million people. Our testimony is in support of H.R. 2990, which amends the Lower Rio Grande Valley Resources Conservation and Improvement Act of 2000, to authorize additional projects under that Act, and for other purposes.

For the past several years the Border Region has been deeply involved in Integrated Resource Management studies to determine a direction for our communities to take in water resource management. The State of Texas gave direction to these studies in 1997 with legislation that required even more comprehensive determinations of water resource status. These studies have given us some stark revelations as to unprecedented predictions in population growth and needs for water resources over the next few years. The Rio Grande Valley Irrigation Districts have partnered with the Bureau of Reclamation on projects since the early 1950's. Most of the Districts have utilized BOR loan programs to do conservation projects. Many developed projects remain undone due to a lack of funding available to meet the needs. Districts have systematically chipped away at these projects within their budget restraints.

Various changes in the water resource condition have made this slow progress unacceptable and has placed the agricultural and municipal supply needs in peril. Drier than normal conditions over the past nine years have exhausted water supplies and caused thousands of acres of land to become unproductive and unable to sustain the industry that depends on that production. Explosive developments in Mexico, which share the waters of the Rio Grande, have deprived the United States of a greater amount of the water resource, accelerating the crisis. Admittedly a part of the Mexico issue is drought related but a greater part is a change in Mexico's operations of their system that has deprived the U.S. users of over a year's supply of water and placed Mexico in violation of the terms of the 1944 Water Treaty.

The population explosion in the Rio Grande Valley area is escalated by the massive legal and illegal migration from Mexico for which Congress continues to struggle with solutions even today. As if our population problems are not enough, Mexico's along the border are many times worse and they draw from the same resource.

All of these pressures turn up the heat on the water resources for the Rio Grande. Today you have heard valid concerns and frustrations over various issues that we desperately need congressional help with, but we also want to offer you a blue print for at least some of the solutions.

In the comprehensive water resource studies of which you have been provided testimony today, an emphasis was made to seek solutions that would provide balance to the fragile economy and environment of the border region. The committees and consultants were charged with the responsibility of finding ways to provide an adequate water supply for the least amount of impact, both financial and physical. Our goal was to find enough firm yield water to provide for the municipal, industrial, environmental and agricultural needs of the region and to dovetail that plan into the expected growth needs of the Valley.

The studies looked at desalinization, reverse osmosis, runoff reuse, groundwater recovery, new dam sites, long distance pipelines and any other opportunity that presented any semblance of credible water supply. After several years of study it has become apparent that because agriculture uses 85% of the water available, agriculture must be the target for the major water conservation projects.

H.R. 2990 provides the authorization for the Bureau of Reclamation to implement the programs and projects that surfaced as the most cost effective way to provide for the water resource needs of the Texas Border region. Most of the irrigation systems were built in the early 1900's and many of the delivery systems that are the lifeblood of the municipalities as well as agriculture must be renovated. Improvements to these canals would provide annually one half of a years current municipal needs in saved water. Other conservation projects that include volumetric account-

ing of the water and new technologies in water delivery could save another 75% of the municipal current annual needs. All of these projects can be accomplished for construction costs of from $0.02 to $3.07 per 1000 gallons which projects on a debt service basis from a fraction of a cent to $0.23 per 1000 gallons of water saved. The projects outlined in this legislation could more than double the water available for municipal and industrial use without collapsing the agricultural economy.

The agricultural economy is extremely important to our region as a large portion of the workforce is dependent on the agriculture industry. The Border aspects of the region only increases this problem and agricultural layoffs create immediate social problems far beyond the normal expectations. We testified a couple of years ago that an undependable water supply could do irreparable damage and would push our local unemployment figures out of sight. We now have a report from Texas A&M that estimates as many as 30,000 jobs have been lost over the past nine years directly related to the water shortage on the Mexico shortfall alone.

The importance of this legislation has only been accelerated by the past several years drought condition and recent information that indicate explosive demands in Mexico on the water resource. We recognize that we may have to live and grow on less water than we have been accustomed to. The latest work by Texas A&M University economist have documented losses approaching one billion dollars over the past nine years attributable solely to Mexico's withholding of water from the four county region of the Lower Rio Grande Valley. We continue to lose farms and businesses that have been a part of the Rio Grande Valley heritage for over a hundred years, mostly because water resource demands the past seven years have been inadequate. The greatest impacts of these losses today are to our agricultural community; however, the associated impacts are beginning to take their toll to the Border Region as a whole. The cost of water to the general public is on the rise and will continue to do so as the scarcity of the resource manifests itself. Water shortages to the general populace have been held to a minimum but we are rapidly approaching a crisis in this arena also.

This legislation allows us to turn these tragic losses around and provide new life and new hope to the whole Rio Grande Border Region. The infrastructure that is needed to solve these problems is apparent. Districts have planned these needed projects for years and anticipated accomplishing them over the next twenty or so years. Testimony today has shown you that we do not have that luxury. Every few acre feet of water not conserved is another family farm gone, another few jobs lost, another business who had to close their doors. Our future is in your hands.

We appreciate your support for H.R. 2990. Thank you for your attention.

Mr. CALVERT. Mr. McCarthy.

STATEMENT OF JAMES McCARTHY, RANCHER AND FARMER

Mr. MCCARTHY. Thank you, Mr. Chairman and members of the Committee. I appreciate the opportunity to speak here on behalf of the people and the agricultural communities of Texas Border Region in support of H.R. 2990.

My name is James McCarthy. I'm a member and former chairman of the board of directors of the Farm Credit Bank of Texas, which is the headquarters bank of the Tenth District of the Farm Credit System, a nationwide network of cooperative lending institutions that provide credit and financially related services to farmers, ranchers, and their cooperatives.

I am also—I'm not totally active right now, but I was a farmer and rancher all my life. I've operated farms and ranches in the Rio Hondo area of the Rio Grande Valley for over fifty years producing cotton, sugar cane, cattle, and children, not necessarily in that order.

Both as a director for the Farm Credit Bank of Texas and as a farmer and rancher, I'm very concerned about the critical water shortages facing southern Texas. I applaud you good folks for your introducing 2990 to amend the Lower Rio Grande Valley Water Resources Conservation and Improvement Act of 2000 to authorize

additional projects to conserve and improve the supply of water in the Valley.

Likewise, I applaud you for holding this legislation hearing here today and all the members of the Texas delegation and the Chairman and the little lady from California. Appreciate you for being here too.

Mrs. NAPOLITANO. Also a Texan.

Mr. MCCARTHY. Especially my friend Solomon Ortiz for this work you do for your constituents. We who live and farm along the border of Texas are very fortunate to have Members of Congress who work so hard with our best interest at heart to improve the infrastructure to which we depend on for our livelihood and quality of life.

Agriculture is a critically important part of the economy of the Texas border region. Every year it produces tens of millions of dollars worth of food and fiber and amounts to one in five jobs in the region.

Agriculture needs water to survive. Along the border agriculture makes up over 80 percent of the area's demand for water, as you've heard a good bit of testimony here today.

However, the region is also experiencing tremendous growth in its municipal populations and other industries. As a result, the municipal and industry water use, which now amounts to a little over 15 percent of total water consumption, is projected to double to 30 percent by midpoint of the century. And my colleague, Mr. Halbert, has already made mention of 50 percent, and I imagine he's closer to right than I am.

Unless efforts are undertaken to improve the region's supply of water, the only way to meet the increased demand for municipal and industrial growth in the region will be to reduce the amount available to agriculture, which would be devastating.

The 2000 Act is clearly a step in the right direction, but more must be done to enable agriculture to survive in the region and to ensure that burgeoning municipal water needs are met.

What H.R. 2990 does is to authorize funding for 15 additional projects, which we definitely sorely need, that will repair and improve canals, install needed pipelines, pumping equipment, and other water conservation improvements all up and down the river. It also increases the funding authorization for these projects from 10 million to 47 million, and there is no question that these projects are needed because of the water crisis in this region. Thus, I urge the Committee to report the bill favorably to the house.

In addition, Mr. Chairman, you should know that there is another serious situation that has made a bad agricultural water shortage in the Texas Border Region even worse, the failure of Mexico to honor its obligation to deliver the water to the area that they have agreed to by treaty. The problems we now face would not be so critical if they had done what they're supposed to do.

I would like to address this matter while I'm here because a resolution of this problem will determine just as much as the good work you and the Administration will do with this legislation, whether our region can overcome our water crisis. After all, water conservation measures are meaningful only when we have water to conserve.

Under the treaty Mexico has a duty to make up deficits, and there is no justifiable reason for Mexico not to do so. Despite water shortages in Texas in the 1990's, Mexico in the area of six tributaries received 90 percent of normal rainfall and has stored water available to begin eliminating the deficit.

In 2000 our government pressed Mexico for action on the deficit, and Mexico agreed to take some steps to correct the problem. However, since then Mexico has only partially complied with the promises. In July of 2000 I testified before this same Committee on water shortage problems. At that time it was brought to your attention to this problem with Mexico's failure to honor its treaty obligations. I asked them for Federal action on Mexico's failure and specifically suggested withholding U.S. Obligated agricultural and industrial water from Mexico on the Colorado River System or the upper Rio Grande System as a way of forcing Mexico to honor its obligations on the lower and Middle Rio Grande. A number of congressmen at the hearing agreed with my recommendation. Unfortunately, the government never took action.

Let's look where we are now. Almost 2 years later, the deficit has only increased. Quiet diplomacy on the part of the United States has failed. Also, I understand from the news reports and from talking to people involved that Mexican President Vicente Fox has made every effort he can to solve this problem. However, he has encountered incredibly stiff resistance from entrenched political machines in some of the northern Mexican states. These forces don't care about Mexico's legal obligations nor the harm their actions might cause to U.S./Mexico relations. And they can care less about their people in the state of Tamaulipas, across the border from us, who are suffering equally as much as we are from the water shortage. They ignore everything—they ignore everything but their own selfish political agenda.

In summation, the people of the Texas Border Region along with their counterparts across the Rio Grande, the farmers in the state of Tamaulipas in Mexico, can survive only if the treaty is honored. President Fox has done all he can. It's time now for the U.S. Government to take real action. Close the gate on the Colorado River and the treaty will be honored. Thank you.

[The prepared statement of Mr. McCarthy follows:]

Statement of James A. McCarthy, Farm Credit Bank of Texas

Mr. Chairman and members of the Committee on Resources, thank you for this opportunity to speak to you on behalf of the people and agricultural communities of the Texas Border Region in support of H.R. 2990.

My name is James McCarthy. I am a member and former Chairman of the Board of the Farm Credit Bank of Texas, which is the headquarters bank of the Tenth District of the Farm Credit System, a nationwide network of cooperative lending institutions that provide credit and financially related services to farmers, ranchers, and their cooperatives.

I am also a farmer and rancher. I have operated farms and ranches in the Rio Hondo area of the Rio Grande Valley of Texas for over fifty years producing cotton, sugar cane, cattle, and other commodities.

Both as a director for the Farm Credit Bank of Texas and as a farmer/rancher, I am very concerned about the critical water shortages facing Southern Texas. I applaud Congressmen Ortiz along with Representatives Bonilla, Gonzalez, Reyes, Rodriguez, and Hinojosa for introducing H.R. 2990, to amend the Lower Rio Grande Valley Water Resources Conservation and Improvement Act of 2000 to authorize additional projects to conserve and improve the supply of water in the Valley.

Likewise, I applaud you for holding this legislative hearing today, and all the members of the Texas delegation, especially my close friend, Solomon Ortiz, for the work you do for your constituents. We who live and farm along the border of Texas are very fortunate to have Members of Congress who work so hard with our best interests at heart to improve the infrastructure on which we depend for our livelihood and quality of life.

Agriculture is a critically important part of the economy of the Texas Border Region. Every year, it produces tens of millions of dollars worth of food and fiber and accounts for one in five jobs in the region. And, agriculture needs water to survive. Along the Border, agriculture makes up over 80 percent of the area's demand for water.

However, the region is also experiencing tremendous growth in its municipal populations and other industries. As a result, the municipal and industry water use, which now accounts for a little over 15 percent of the region's total water consumption, is projected to double to 30 percent by the midpoint of this century.

Unless efforts are undertaken to improve the region's supply of water, the only way to meet the increased demand for municipal and industrial growth in the region will be to reduce the amount available to agriculture, which would be devastating.

Agriculture doesn't have enough water now to begin with. In recent years, we have experienced severe droughts that have devastated the region's farmers and ranchers. The massive losses of crops and livestock due to lack of water have run into the hundreds of millions of dollars, and resulted in many farm and ranch bankruptcies and foreclosures.

Thus, farmers were pleased when Congress enacted the Lower Rio Grande Valley Water Resources Conservation and Improvement Act of 2000. That Act recognizes the need to stretch our water supplies with projects that foster water conservation. Under the 2000 Act, the Department of the Interior's Bureau of Reclamation works with the State of Texas and local governments to develop and fund projects to make improvements to irrigation canals and pipe lines, to install water meters in irrigation canals, and to take other actions to improve the distribution of water to farmers and ranchers.

The 2000 Act is clearly a step in the right direction, but more must be done to enable agriculture to survive in the region and to ensure that burgeoning municipal water needs are met.

The 2000 Act only authorized the funding of four water management improvement projects, and the potential for additional water conservation in the region is so much greater. For example, most of the irrigation systems in the region were built in the early 1900s, are inefficient in conserving water, and still are waiting to be renovated, even with the 2000 Act in place.

What H.R. 2990 does is to authorize funding for 15 additional projects, projects that will repair and improve canals, install needed pipe lines and pumping equipment, and make other water conservation improvements all up and down the river. It also increases the funding authorization for these projects from $10,000,000 to $47,000,000. There is no question that these projects are needed because of the water crisis in this region, and thus I urge the Committee to report the bill favorably to the House.

In addition, Mr. Chairman, you should know that there is another serious situation that has made a bad agricultural water shortage in the Texas Border Region even worse the failure of Mexico to honor its obligation to deliver the water to the area that was agreed to by treaty. The problems we now face would not be quite so critical as they are if that water were to be made available to us.

I would like to address this matter while I am here because a resolution of that problem will determine just as much as the good work you and the Administration will do with this legislation whether our region can overcome our water crisis. After all, water conservation measures are meaningful only when we have the water to conserve.

In 1944, a treaty was signed by the United States and Mexico called the "Utilization of the Colorado and Tijuana River and of the Rio Grande," February 3, 1944, 59 Stat. 1219. The intent of this treaty, which is still in effect, is to allocate the surface waters of the Rio Grande and Colorado Rivers between Mexico and the United States. The two countries agreed that, in exchange for Mexico drawing 1,5000,000 acre feet of water annually from the Colorado river (which lies primarily in the United States), we would receive 350,000 acre feet of water annually from six measured tributaries of the Rio Grande that lie in Mexico.

However, as has been recognized by the Mexican and U.S. Sections of the International Boundary Water Commission, which oversees implementation of the treaty,

Mexico for almost a decade now has been in a state of deficit with respect to its obligations under the treaty to deliver Rio Grande water to the United States.

During the 1992 through 1997 cycle, Mexico accumulated a deficit of 1,023,849 acre-feet of water it was supposed to provide (at the rate of 350,000 acre feet a year) from the six Rio Grande tributaries. During the current five-year cycle, beginning October 1, 1997, through September 30, 2001, the deficit is an additional 279,970 acre-feet, for a total deficit of 1,303,819 acre-feet. Of more immediate concern, so far this fiscal year (through April 6, 2002), Mexico has only provided 7,912 acre feet of the 350,000 it is supposed to provide during the year.

Under the treaty, Mexico has the duty to make up its deficits, and there is no justifiable reason for Mexico not to do so now. Despite water shortages in Texas in the 1990s, Mexico in the area of the six tributaries received 90 percent of normal rainfall, and has stored water available to begin eliminating the deficit.

In 2000, our government pressed Mexico for action on the deficit, and Mexico agreed to take some steps to correct the problem. However, since then Mexico has only partially complied with its promises the deficit continues to be over 1,300,000 acre-feet.

In July 2000, I testified before this same committee on the water shortage problem, and at that time brought your attention to this problem with Mexico's failure to honor its treaty obligations. I asked then for Federal action on Mexico's failure, and specifically suggested withholding U.S. obligated agricultural and industrial water for Mexico on the Colorado River system or the Upper Rio Grande System, as a way of forcing Mexico to honor its obligations on the Lower and Middle Rio Grande. A number of the congressman at that hearing agreed with my recommendation. Unfortunately, the Government never took that action.

Look where we are now, almost two years later the deficit has only increased. Quiet diplomacy on the part of the United States has failed. Also, I understand from news reports and from talking to the people involved that Mexican President Vicente Fox has made every effort he could to solve this problem. However, he has encountered incredibly stiff resistance from the entrenched political machine in some of the northern Mexican states. These forces don't care about Mexico's legal obligations nor the harm their actions might cause to U.S.–Mexico relations. And, they could care less about their people in the State of Tamulipas across the border from us who are suffering equally as much as we are from the water shortage. They ignore everything but their own selfish political agenda.

In summation, the people of the Texas Border Region along with our counterparts across the Rio Grande, the farmers in the State of Tamulipas in Mexico can survive only if the treaty is honored. President Fox has done all he can. The time is now for the U.S. Government to take real action. Close the gate on the Colorado River, and the treaty will be honored.

Thank you for allowing me to present this testimony today.

Mr. CALVERT. Thank you, gentleman. Regarding the issue of H.R. 2990 and to approve public law 105-676, which I'm sure I'll be working with my colleagues to initiate some appropriations for hopefully in this budget year, lining canals, improving your irrigation system, have you calculated how much water you can conserve doing that?

Mr. HALBERT. Yes, we have. We have calculated—well, I don't have the figures right here in front of me for how much just the canal lining or pipelines, but through the total projects that we have we've calculated that we can save approximately the amount of water that's—hold on. Maybe I do have that. Ken, why didn't you speak up?

OK. Here it says that improvements to irrigation canals cumulative cost of $98,000 would create a water savings of 119,700 acre feet of water per year.

Mr. JONES. I wish it was $98,000. It's $98 million.

Mr. HALBERT. $98 million. I'm sorry. Just a few decimal points will make that work. $98,400,000 will give us 119,700 acre feet per year, and there is an additional 139,600 acre feet for our own farm improvements, which also include some stuff that's within districts.

That has not been split out actually to what we may most traditionally think of as on-farm improvements.

Mr. CALVERT. You've got a 120,000 acre feet of additional yield plus an additional—

Mr. HALBERT. 139,000 acre feet of yield for an additional 105 million. That was the figures that we gave you this morning. Approximately 203 million will produce approximately 259,000 acre feet per year.

Mr. CALVERT. And what's your—just for the record, again, what's your present consumption on water in the Valley right now?

Mr. RUBENSTEIN. Consumption of water for municipalities downstream from Amistad is roughly 225,000 acre feet per year. Irrigation typically would need 1,300,000. Because of the water shortage that's been on average reduced to 770,000.

Mr. CALVERT. So this would literally double the amount of water as far as domestic—

Mr. RUBENSTEIN. And half make up the average deficit for irrigation.

Mr. Jones The approximately 260,000 acre feet, put in another perspective, looking at year 2050 on the increased water supply demands for municipal industrial use, that annual amount would more than adequately cover the year 2050 projected growth and demand for M&I water use. That's pretty significant.

Mr. CALVERT. Mr. Ortiz.

Mr. ORTIZ. Thank you, Mr. Chairman I'm just curious, you know, Congressman Bonilla and I introduced legislation to commission the Agricultural Department to conduct an impact study as to how this has impacted not only the agricultural community but all the community here. And, Mr. McCarthy, you are—have been a farmer for many years, a president of the Farm Bureau or whatever for many years. Did they ever call you?

Mr. MCCARTHY. No.

Mr. ORTIZ. Did they contact any of you?

Mr. JONES. No, sir.

Mr. HALBERT. No, they didn't contact us. We did send inquiries telling them that information—we could give them information or point them toward information, and we received no effort whatsoever back from them to do so.

Mr. RUBENSTEIN. Congressman, we provided the water use data that I've testified to here today.

Mr. ORTIZ. Have you had a chance to read the report?

Mr. RUBENSTEIN. I have not.

Mr. ORTIZ. Not much to read. It's inconclusive. 2990, you know, this is our bill. Most of us who represent South Texas co-sponsored this bill. We support it. We're going to go back. We're going to talk to our Chairman, continue to talk to him. He's receptive. And I think we can get some of the other members to support this bill. This is very, very important report. To be able to conserve some of the water and, of course, you need some of the money to be able to do that.

And, that's right. Mr. McCarthy appeared before our Committee in Washington and this was his recommendation, shut off the water from the Colorado River, and nothing was done about that.

And maybe this is the time, Mr. McCarthy, that we need to do that and be serious about that this time.

Mr. MCCARTHY. Get them off the dime.

Mr. ORTIZ. I'll tell you what, this has been great testimony today, and we appreciate your testimony, and I know that my other great friend, Mr. Rodriguez, has a question.

Mr. RODRIGUEZ. Thank you. Thank you, Mr. Chairman. Let me—you indicated in terms of the bill is, I think, 55 million, and is that based on—I think it's based on some kind of match; is that correct?

Mr. HALBERT. That's correct. The bill is based on a 50 percent cost share.

Mr. ORTIZ. This other 98 million that you talked about, that's in addition above that, or part of that?

Mr. HALBERT. No, no, it's a part of that. It's a part of that. Yes, sir. We—the problem that we ran into when we first originally submitted or began to work on the legislation, the prior legislation, we ran into problems with—I don't want to say problems, but we ran into the concerns with the Bureau of Reclamation that we did not have—though we felt comfortable with the projects, that we did not have enough information on each one of those projects to submit them in the bill.

So what we did was we carried it down to the ones that we had sufficient planning already done to be able to document what was needed. And there is—there is continued—there is other projects that are in the planning stage now that will be able to be submitted in an amendment in a year from now.

Mr. ORTIZ. But in order for us to either yield or save 259,000 acre feet, we were saying that we need that $98 million from the fed and then you do the match?

Mr. HALBERT. That's correct.

Mr. ORTIZ. So it's not 55, but 98?

Mr. HALBERT. That's correct. On the—right. Now, that's not—that wouldn't—that will cover more projects that are listed in the bill.

Mr. ORTIZ. I understand, but it's projects that would yield—that let me get one other clarification. Of the 350,000 acre feet that they owe us per year, that now it's over 1.5 million acre feet, two-thirds of that goes to the other side?

Mr. RUBENSTEIN. That's correct.

Mr. ORTIZ. So it's only about 100—

Mr. RUBENSTEIN. No, no, no. Mexico is required to deliver to the United States 350,000 acre feet on average per year. However, where it comes from is the Mexican tributaries. The water that enters the Rio Grande from those tributaries is split, two-thirds to Mexico, one-third to the U.S. So Mexico would have to release or deliver to the Rio Grande three times that amount of water for us to get the 350.

Mr. ORTIZ. But we only yield that 350?

Mr. RUBENSTEIN. That's correct.

Mr. ORTIZ. On our side?

Mr. RUBENSTEIN. Minimum.

Mr. ORTIZ. Is that correct?

Mr. HALBERT. I think there is a misunderstanding in what you're saying and what Carlos is saying. The 350,000 is what they are re-

quired to give or one-third of the inflows that reach the Rio Grande, but at a minimum 350. In other words, if the inflows into the Rio Grande out of those six major tributaries amounts to more than a million acre feet, for instance, then our portion of that would be greater than the 350, but they are required to give us the 350.

Now, other waters from the Rio Grande from our side are included—we get other inflows from our side that raise the amount. The 350 is not all that we have a yield of from us.

Mr. ORTIZ. And I know—as a rancher, I know that you have to plan for, you know, what to plant. As farmers you have to plan what you have to do next year. And I recall we had a meeting with President Fox, and one of the things he told us, Mr. Chairman, was that as we talked about oil, you know, most of their revenues from Mexico, 80 percent, come from the oil revenues that we purchase from them.

And one of the things that he was asking of us was that he would prefer a constant price on the oil versus the fluctuation. And, of course, he likes it when it's up, but he doesn't like it when it's down. But he would prefer a deal that would be constant because of the fact that that allows him to run the government and the flow of resources.

But the same applies to the rancher and farmer. You need to know the flow that's coming in in anticipation of what's going to occur next year, and I think that's very key. If we look at some negotiations that we establish at least some understanding for the next so many years that this amount is going to be coming in so that the farmer can plan on that and assume that that's the amount of water that's going to be there, otherwise, you find a situation that you can't afford to plant if you don't know what is expected and that doesn't come in.

Mr. HALBERT. Can I respond a little bit to that? The reason for the fluctuation was that originally it was more difficult for Mexico to—it was more difficult for Mexico to determine how much that water would be because under flood conditions or excess water, there would be more water coming to the system.

There has been a lot of talk about in previous conversations about the dams that Mexico has built. The reality is the dams are not the problem. The dams should make it easier for Mexico to do exactly what you said. They can even out the amount of flow that they allowed the U.S. To have and still plan for their own management, but they've refused to do this. But the dams are not the problem. They should be a tool for them to use, not a tool to use against us.

Mr. CALVERT. Ms. Napolitano.

Mrs. NAPOLITANO. Thank you, Mr. Chair. A couple of things. Mr. Rubinstein, what is the No. 1 priority project to address the water issues in the basin, and how can the government help?

Mr. RUBENSTEIN. Again, as has been testified by Mr. Jones, the biggest bang for the buck to actually generate additional water for us is the irrigation improvements that have already been identified in the regional water plan.

Mrs. NAPOLITANO. Is there a coalition to begin moving forward on that, on those projects?

Mr. RUBENSTEIN. The regional water plan is mandated by the state. It gets state approval for those projects to carry forward. It represents the interest of this region, so, obviously, you have at least that advocacy group being carried forward, and also the irrigation districts that are represented here today.

Mrs. NAPOLITANO. Is it being funded?

Mr. JONES. Through a reclamation at this time, no. That's why the appropriations are needed to make it happen. At the state level the regional water planning groups are in the process of submitting an infrastructure financing report to the state probably to this next state legislative session to look at the actual situation within each of the regions on what the water providers are able to pay for and what they're not able to pay for. So we're hopeful that at this next state session that we'll have some financial assistance opportunities at the state level to assist in whatever appropriations may be available at the Federal level to make some of these things happen.

Mrs. NAPOLITANO. Has there been a coalition formed to move forward with all the parties that are concerned that are affected?

Mr. JONES. In terms of—I think so, yes. In terms of 2990 and the—

Mrs. NAPOLITANO. I'm not talking about 2990. I'm talking overall the issues to—I believe to get not only the release of water, but also all the different things that you're supposed to look at that are purportedly in the study that was released.

Mr. JONES. Yes, and many of the players are here in this room today.

Mrs. NAPOLITANO. OK. Mr. Halbert, in your report you talk about many developed projects remain undone for lack of funding. Is that state funding, Federal match? What are you referring to?

Mr. HALBERT. Back in the 1950's, '60's, and '70's, the Bureau of Reclamation had a small projects program where the districts were able to receive funding from the Bureau of Reclamation on loans. They were loaned fundings that they were able to use those fundings to do these projects. Those funds ran out, and when those funds ran out, the districts were no longer able to finance the projects so that a lot of those projects have remained undone.

Mrs. NAPOLITANO. Do we know why the Bureau has not continued funding these projects, and has there been a push to be able to get them refunded or funded again?

Mr. HALBERT. We've made the effort. I guess we're asking you to make that push. We've made the effort definitely from this end. But we have had a very difficult time getting the Bureau funding.

Mrs. NAPOLITANO. In looking at some of the testimony you have presented to us, you indicated that studies looked at desal, reverse osmosis, et cetera, et cetera, and all those, and yet, as stated before, 80 percent of the water available is used by ag. In not having the studies before me or having the synopsis of them to being able to understand what they are recommending, what out of those can help be able to work with moving this forward?

Mr. HALBERT. Well, the studies—what the studies will tell you is that there is—that you can do certain projects for so many cents a thousand gallons, say, and you can do other projects for so many cents a thousand, and so on down the road. And what the studies actually tell you is that these projects that we're talking about for

the construction projects on irrigation on irrigation facilities give you the greatest yield of water for the dollars spent, and that's what those studies tell us.

They don't tell us that desal and these other projects are bad projects. They just tell us that they don't return to us the amount of water per dollar spent that the irrigation project returns to us. So that's the reason that we're pushing so hard for—

Mrs. NAPOLITANO. Are they broken down in short-term, long-term?

Mr. JONES. In terms of the water planning and two components to the year 2030 considered as near term and for the year 2050 as long-term.

Mr. RUBENSTEIN. And if I may add, the principal water management strategy for meeting our needs for municipalities goes through the year 2050. The acquisition of water rights within the Rio Grande System. That assumes, obviously, a conversion of irrigation water rights to municipal use and that comes at a price within the system we operate in. The sooner you can make the improvements to conserve the water to actually increase the yield in irrigation, the more feasible it will become for municipalities to be able to implement that management strategy.

Mrs. NAPOLITANO. Which brings to mind another question. What are you doing for conservation? Are you doing municipal-wide water conservation? Are you retrofitting tanks? Are you retrofitting the shower heads? What's going on? Are you at least moving in that direction?

Mr. RUBENSTEIN. Yes, ma'am. In fact, this morning we had representatives from PUB with us, and I'll mention that they are but one example of municipalities that are looking at their water conservation ordinances. They've reduced the thresholds for when mandatory—in other words, the amount of water that a household will have to use before increased rates kick in to promote conservation, promotion of water conservation systems within the city, looking at reuse of waste water as a conservation measure.

Mrs. NAPOLITANO. I'd like to ask has the Bureau of Reclamation been helpful in getting funding for the replacement of low flush toilets? That has saved us an inordinate amount of money.

Mr. JONES. That particular issue I'm not aware of any participation.

Mrs. NAPOLITANO. Thank you, sir.

Mr. CALVERT. Thank you, lady. I want to thank this panel. Back in 1973—we mentioned the Colorado River—I wrote my term paper on the issue of the Colorado River as it entered into Mexico, and that was the year of the big drought, if everybody remembers, back then in 1972, and a huge issue of Mexico. Of course, it wasn't the quantity of water because, as mentioned in earlier testimony, we have always met our treaty obligation to Mexico. We had a quality issues back that day as far as the water because of solidity of the river because of the drought. But it's worth noting that this year is the lowest level that community has ever been at in the last 30 years since the year 1970. And so we are potentially facing another drought condition on the Colorado River.

And, by the way, the Colorado River, as you probably all know, is the most adjudicated river in the United States and maybe in

the world. And I'm in the mist of right now trying to work out some agreements on it. So it's an interesting concept to take a look at using the Colorado River and, certainly, I'm sure we'll get some publicity in Nevada, and Arizona and other states, and California, and it's certainly something the State Department, I'm sure—that would get the attention of Mexico. No doubt about it. I certainly thank this panel. I appreciate your being here, and you're excused, and we hope to see you again soon. Mr. Ortiz, I understand that you have—

Mr. ORTIZ. Mr. Chairman, we have with us today a young man who understands the seriousness of the problem we're facing today, the critical situation we're in. His name is Ingeniero Salvador Trevino Garza. Mr. Trevino Garza is the general manager of the Junta de Aguas y Drenaje. And we've been talking about the possibility of maybe having an open alliance between our two countries, and you have some time now, Mr. Trevino Garza, to say something to this panel.

STATEMENT OF SALVADOR TREVINO GARZA, GENERAL MANAGER, JUNTA DE AGUAS Y DRENAJE

Mr. TREVINO GARZA. Thank you very much, Mr. Chairman and members of the board. Thank you for the brief time to say something. Matamoros is, of course, the friendship, that Mr. Ortiz said, city here with Brownsville. We're the last city of the river.

For the last 2 years we've been without water for the citizens in our city. There are some things that you've been saying here, and probably one of them was from Mrs. Campbell, if I can recall correctly the name, about working together, working with people.

We have been really working very good with the people here in the Valley, with PUB, with the watermaster, and Texas Natural Resources to even help our city of Matamoros. And part of the situation that we feel it will help the lack of water that not only the farmers or the city of the—let's say the Rio Grande Valley or Texas area, but also in Tamaulipas we're suffering, is, of course, because of the lack of water or maybe because it's not getting into the river from the people that it should take it over there.

Maybe we can work together on different issues, planning, you know, our infrastructure. Mr. Feild, I think, from the Brownsville Chamber of Commerce said whatever happens to Matamoros is going to affect Brownsville. Well, whatever happens to Brownsville is going to affect Matamoros. Whatever the Rio Grande Valley gets affected is going to affect us.

But if we can work something together for planning for infrastructure on both sides of the border, planning for conservation—I mean, we did already have a visit from the Texas Natural Resources & Conservation of what do we do in our city for us to make some conservation of water to try to also talk to our agriculture farm people, you know, to don't waste much water.

So I think we can try to work together with all these issues also, of course, with the compliance of the treaty between both countries. I mean, our Governor is working on Tamaulipas, and we do have a group that is fighting, of course, but we don't have water.

Farms are with zero the last 2 years. They haven't been able to get water from their irrigation systems. And, like I told you also,

the city has already suffered. But if there is a possibility for you as members of the board to also try to look for some kind of an alliance work between Mexico and the U.S., not just at higher levels, but here, like Ms. Campbell said, you know, we're very good to work with people, and there is few people here from Brownsville and the area can say that, to also make a force, and I'll take it also to our mayor and our Governor to try to work together because this lack of water is not just hurting like I've been hearing, you know, on the U.S. Side. It's also the Mexican side.

Mr. CALVERT. Question. And I certainly appreciate the gentleman coming forward. Obviously, your community is suffering as much as Brownsville. And so you're suffering if, in fact, this treaty obligation is not being met by Mexico, it seems, based upon earlier testimony. And maybe you can help me understand the political reality of what's going on in Mexico today. Is it true—we have a Governor of one particular state that is—that said he's not going to release water. And that not only affects Brownsville, but that affects you. And I believe we heard testimony for every gallon of water that's released, that you're supposed to get two gallons of that. Is that basically correct?

Mr. TREVINO GARZA. Well, Matamoros is, let's say, four times bigger than Brownsville, our population. And, yes, in this case not just Matamoros, but the state is suffering if the water is not released. We do our work, and we do have the statistics, like I heard Mr. Ortiz say, we have the satellite picture of the irrigation on Chihuahua state, you know, what's going on.

We also have the precipitation that has been going on for the last 10 years, and there is a drought, but it has rained. So what I'm saying is I think that if we work something together between both Governors, not just at the higher level, but also here with the community, the Valley and also, in this case, Tamaulipas, can get the benefit because right now whatever water, even if it's not being complied with the treaty that they've been giving to the U.S., basically it's not getting to Tamaulipas.

So it's not really just Matamoros. It's not just the U.S., it's also Tamaulipas. So I've been willing to take what I've heard very interesting this day to my mayor and to my Governor, and with the Governor we do have already all the community or different representative areas from the citizens to get involved for the water issues to maybe work something out also together with the people.

Mr. CALVERT. Mr. Ortiz.

Mr. ORTIZ. I think that it would be important for you to—and you know most of the players in this room, am I correct when I say that?

Mr. TREVINO GARZA. That's correct.

Mr. ORTIZ. For you to get together and maybe start from the grass roots and move up and get our Governor, our friend Yarrington on the Mexican side of Tamaulipas. He understands the seriousness of the problem as well because it is impacting on his constituents.

Mr. TREVINO GARZA. That's correct.

Mr. ORTIZ. And I'll be willing to work with you, and I know most of the members of this Subcommittee, and we talked to President Fox—this is why it's very frustrating, because we've been to the top

levels. But maybe since we've been to the top levels, let's begin with a grass roots movement and look at the different angles, including sanctions and all.

You know, I worked very hard to get money for two substations to inspect vehicles coming in from Mexico to this country, and they have to realize that this is a two-way street, not a one-way street. We're going to put a lot of fire up maybe after this hearing this morning.

Carlos, you know what we can do. Let's get together and I think that this would be an open alliance to let people in both countries know that we mean business, and that we're going to do something about it.

Mr. TREVINO GARZA. And one of the reasons that I came to ask you if I could come forward was, you know, when you mentioned penalties, we already have a penalty over there without water. And, of course, it would be tougher to have another one.

There are some things to be looked at, and that is one of those. But there were some other simple issues, you know, Jo White mentioned here about the chemicals on the river and all that. Matamoros, we're already using those chemicals. The hydrilla is on my lagoon now. It's not only on the river. So those are some things that we can work out with our people here and see if we can get the support from higher levels to some kind of work, an alliance to push for the whole area, not just—it's a region, like they said.

Mr. ORTIZ. Thank you very much.

Mr. CALVERT. Thank you. I want to close this by thanking all the witnesses that came forward today, certainly the audience and the members of the media that hopefully will report this story far and wide, because, obviously, attention needs to be brought to this issue. I want to thank our host, Mr. Solomon Ortiz, for his hospitality in hosting our Committee here in the community and we look forward to working with you and this administration.

Mr. ORTIZ. Thank you, Mr. Chairman, for making time for us in this community, and we hope that this will not be the last visit.

We thank Congresswoman Napolitano, Congressman Rodriguez, the staff did a fine job, and all the witnesses and the audience who were with us this morning. Thank you so much.

Mr. CALVERT. Thank you. We are adjourned.

[Whereupon, the Subcommittee was adjourned].

The following information was submitted for the record:

- Blankinship, David R., Texas Parks and Wildlife, Statement submitted for the record
- Carpenter, George W., General Manager, Hidalgo County Irrigation District Number One, Statement submitted for the record
- Combs, Susan, Texas Agriculture Commissioner, Statement submitted for the record
- Lucio, Hon. Eddie Jr., State Senator, Texas State Senate, Letter submitted for the record
- Maley, Joe, Director of Organization, Texas Farm Bureau, Statement submitted for the record
- Oliveira, Hon. Rene O., Texas House of Representatives, Statement submitted for the record

- Prewett, Ray, Texas Citrus Mutual and Texas Vegetable Association, Statement submitted for the record
- Rosson, C. Parr III, Aaron Hobbs and Flynn Adcock, Department of Agricultural Economics, Center for North American Studies, Texas A&M University, Statement submitted for the record

[A statement submitted for the record by Mr. Blankinship follows:]

Statement of David R. Blankinship, Texas Parks & Wildlife Department

In February 2001, the estuary of the lower Rio Grande was separated from the Gulf of Mexico by a sand bar. The confluence of the Rio Grande with the Gulf of Mexico has been lost since this date except for a 3-month period from the end of July to the first week of November 2001 when a channel was opened using machinery. The formation of the sand bar resulted from the normal sand transport process along the western Gulf of Mexico and low flows in the Rio Grande. Since the mid–1990's, flows from the Rio Grande to the Gulf have been low enough to result in a gradual closing of the river mouth. Today, the river mouth remains closed even though water flows past the last gauge near Brownsville. The net amount of water that reaches the mouth of the river is not enough to reconnect or maintain a confluence with the Gulf of Mexico.

As a result of the loss of the estuary of the Rio Grande, estuarine dependent organisms that normally utilize the habitat during part of their life cycles have been unable to do so. Studies conducted in the months following the closing of the river mouth have shown that some economically and ecologically important species have been impacted. Production of white shrimp (Litopenaeus setiferus), common snook (Centropomus undecimalis), and striped mullet (Mugil cephalus) have been drastically reduced.

The estuary of the lower Rio Grande is unique in this arid region despite its relatively small size. There is not another river that flows into the Gulf of Mexico for more than 100 miles to the north or south making the Rio Grande all the more important for the production of some estuarine dependent species. One of these species is the common snook mentioned above. Common snook do not reproduce in large numbers farther north than the mouth of the Rio Grande yet its relative abundance in the estuary of the Rio Grande has shown that the estuary is an important habitat for juvenile production.

The loss of habitat such as the estuary of the Rio Grande is potentially disturbing to the marine ecosystem of south Texas and northern Tamaulipas. The loss of such an estuary due to reduction of freshwater inflows might also give us warning of the potential for similar occurrences in other regions of the United States if freshwater inflows are not insured. Freshwater inflows are the lifeblood of our bays and estuaries.

[A statement submitted for the record by Mr. Carpenter follows:]

HIDALGO COUNTY IRRIGATION DISTRICT NO. ONE

P.O. BOX 870

EDINBURG, TX. 78540 WILLARD FIKE, PRESIDENT

D.L. MCGUFFIN, VICE PRESIDENT

MARK J. FRYER, SECRETARY

R.L. (BOBBY) BELL,JR, DIRECTOR

LAWRENCE RICE, DIRECTOR

KIRBY CAVIN, ATTORNEY

GEORGE W. CARPENTER, DISTRICT MANAGER

ESTELLA GARZA, TAX ASSESSOR/COLLECTOR

The Honorable Solomon Ortiz
U.S. House of Representatives
3505 Boca Chica Blvd. Suite 200
Brownsville, Texas 78523

Re: Written Testimony -- Congressional Field Hearing

Dear Congressman Ortiz,

On behalf of Hidalgo County Irrigation District Number One, its Board of Directors and farmers, I want to express our gratitude for your untiring and aggressive efforts to resolve the water crisis in the Lower Rio Grande Valley.

HCID 1 has a project (Curry Main Pipeline Project) approved under Public Law 106–576.

A more extensive project (North Branch East Main Project) is included as a part of H.R. 2990.

The Congressional Subcommittee Field Hearing held on May 3, 2002, in Brownsville included testimony regarding H.R. 2990.

Although, I was not appointed to give oral testimony at the hearing, your staff thought that written testimony might be accepted which was in fact delivered to the subcommittee staff at the beginning of the hearing.

Because our testimony was not officially accepted for the record by the chairman, I am sending you a copy to either be submitted or used by you in any way which may be beneficial in passing this amendment.

Thanking you again for your efforts,

George W. Carpenter
District Manager

cc: Larry Meyers, Meyers and Associates

[A statement submitted for the record by Ms. Combs follows:]

Statement of Texas Agriculture Commissioner Susan Combs

I want to thank U.S. Rep. Solomon P. Ortiz for convening this timely hearing today examining the growing water crisis in the Lower Rio Grande Valley and ways to assist the region with water conservation projects included in H.R. 2990. The water crisis in this region has been fueled by Mexico's failure to completely abide by the 1944 U.S.–Mexico Water Treaty. This failure has had a dramatic impact on the entire Lower Rio Grande Valley economy but especially agriculture. I am hopeful this hearing will demonstrate to Congress the importance of H.R. 2990 and other such efforts to ensure the Lower Rio Grande Valley has an adequate water supply.

All the empirical evidence available to us indicates that water is available to meet the terms of this treaty, and that drought is not an issue. We have satellite photos showing reservoir shoreline changes during high irrigation periods in Chihuahua starting in March and ending in September and October. In addition, a recent Texas A&M University Extension Service analysis of acreage, yields and crops in Chihuahua from Mexico's agricultural agency, SAGARPA, demonstrates that the region has been changing its crop profile. Over the last decade, agricultural production in

Chihuahua has moved from low-value crops that require lower amounts of water, such as barley, wheat and soybeans to higher-value crops that require more water, such as alfalfa, peanuts, tree fruits, cantaloupes and onions. Interestingly enough, this changeover has occurred during a drought. In fact, the same Texas A&M University report found that 1997—a drought year—was a record year for acreage and production of irrigated crops in Chihuahua. The report also has found that overall, Chihuahua crop yields are up 8 percent during the drought years of 1995–99.

In contrast, it is estimated that the aggregate value of the 1.5 million acre-foot water debt to the United States since 1992 has amounted to a nearly $1 billion net loss to the Lower Rio Grande Valley's overall economy. This damage includes lost wages, rents, interest, profits and other net income, along with 30,000 jobs eliminated from 1992–2002, according to another Texas A&M University study on the value of Rio Grande Valley irrigation water.

Based on Mexico not providing its annual 350,000 acre-feet of water, the direct loss in crop sales in this region is approximately $11 million per year. Based on the entire debt of 1.5 million-acre feet of water, the overall direct loss in crop sales is approximately $477 million. A minimum of 1,720 farmers in Cameron, Hidalgo, Maverick, Starr, Webb, Willacy and Zapata counties are estimated to be affected by the water debt to the United States.

On behalf of these farmers, Texas agriculture and the Lower Rio Grande Valley's economy, I urge you to consider all means available to bring relief to those affected, including H.R. 2990 and S.1577, and to develop a resolution to this dispute that is acceptable to all parties.

[A letter submitted for the record by Mr. Lucio follows:]

Submitted for the record
5-3-02

The Senate of The State of Texas

Senator Eddie Lucio, Jr.

May 3, 2002

The Honorable Ken Calvert
Chairman-Subcommittee on Water and Power
US House of Representatives
1334 Longworth House Office Building
Washington, D.C. 20515

Dear Chairman Calvert:

First of all, let me thank the members of the U.S. House Subcommittee on Water and Power, officials from the US Bureau of Reclamation, and others from federal and state agencies for being in Brownsville today to see--first hand-- the plight of the Rio Grande Farmers because of Mexico's refusal to honor the 1944 water treaty.

Our farmers are facing a tremendous crisis and something must be done NOW.

I am appalled, as are the farmers, at the reports that have been released these last few days from the International Water and Boundary Commission and the U.S. Department of Agriculture. Reports that blatantly downplay the impact of Mexico's failure to live up to, to **HONOR**, and the subsequent ramifications of that failure that can be felt throughout South Texas.

At the same time I am shocked at the reports coming out of Mexico which indicate that Mexico has had more than enough water to repay the debt in full and still refused and continues to refuse to do so. Not only refusing to pay the debt but releasing water that rightfully belongs the farmers of South Texas to their farmers further up the Rio Grande River.

Mexico can continue to say they don't have the water--but facts and figures supported by satellite images and technology do not lie.

There should be no question as to the impact felt in South Texas and the irreparable damage that is being done because of Mexico's refusal to honor the 1944 treaty.

Committee Membership: Chairman, Subcommittee on Border Affairs ★ Finance ★ Business and Commerce ★ Natural Resources ★ Sunset Advisory Commission
P.O. Box 12068 ★ Austin, Texas 78711 ★ 512/463-0127 ★ Fax: 512/463-0061 ★ TDD: 1-800-735-2989
100 E. Cano, Suite 101 ★ Edinburg, Texas 78539 ★ 956/387-0445 ★ Fax: 956/387-0443
7 North Park Plaza ★ Brownsville, Texas 78521 ★ 956/548-0227 ★ Fax: 956/548-0440

79-006

The report completed by the International Boundary and Water Commission, despite its soft recommendations for enforcing the treaty, clearly indicates that Mexico in general, and the state of Chihuahua in particular, have not lacked the resources to meet their obligation to Texas. Instead, the Mexican government has sanctioned the misappropriation of water by the state of Chihuahua. The state of Chihuahua has distributed to its own farmers more water than is due to them. This mismanagement has effectively decimated the crop-growing capabilities of Rio Grande Valley farmers on both sides of the border.

At this point, the water debt reaches approximately 1.5 million acre-feet, and those millions of acre-feet translate into a crippling loss of millions of dollars in agricultural output.

At a recent town hall meeting, constituents representing the sugar cane industry estimated that their yearly output reaches $600 million per year. If the Rio Grande Valley were a state, the region's output would rank it as the nation's second highest producer of citrus crops. These figures paint a clear picture. The issue is not one-dimensional: The impact of Mexico's failure to honor its word will reverberate across many levels of the economy, dealing a massive blow to regions of both nations that are experiencing record population growth.

I commend the state and federal officials who have in the last couple of weeks proposed long-term solutions to this problem.

Improved irrigation projects and desalination plants are great ideas and rest assured that I, as a state senator from South Texas, will hold those officials accountable for the implementation of new water producing and saving projects. These officials need to be ready to fund these programs as promised in the upcoming 78th Legislative Session.

But long-term solutions will not solve the immediate problems caused by Mexico's refusal to honor the 1944 treaty.

By the time the irrigation projects or the desalination plants come on line, how many of our farmers will have lost their farms? Farms that have been in their families for hundreds of years, owned by their grandparents and fathers and mothers who fought for this great country in World War I, World War II, and the Korea Conflict.

And every battle that this great nation has fought to ensure the American way of life.

Farmers whose children are now in the battle fields of Afghanistan fighting the cancer called terrorism.

All the while, back home, their parents are losing the battle to keep their farms because of Mexico's refusal to honor the 1944 water treaty.

I am saddened that the commissioner of the IWBC is from El Paso, Texas and should have first hand knowledge of the devastation that this issue is having on the people of the border and how eventually it will effect all of Texas. Yet the IWBC's report lacks the necessary edge to compel compliance.

I am saddened that, even though the President of the United States is a Texan, and as Governor of our great state he was always considered a dear friend of the border, we get nothing but silence from Washington, D.C.

I do not agree with the proposed blockade of the international bridges as a solution to this problem. But the farmers have tried everything else and now have been pushed against a wall. For this reason I will stand shoulder to shoulder with them in a peaceful demonstration to raise awareness for their struggle.

I implore you, after today's hearing, go back to Washington and carry the message of these wonderful men women who are not only great Texans, but great Americans. They need help **NOW.**

Again, thank you and God willing we will get the water so our farmers can continue to do what they have always done best: Put food on the tables of all Americans.

Sincerely,

Eddie Lucio, Jr.
State Senator

cc: Members-Subcommittee on Water and Power

ELJ/str

[A statement submitted for the record by Mr. Maley follows:]

Statement of Joe Maley, Director of Organization, Texas Farm Bureau

Texas Farm Bureau greatly appreciates Congressman Ortiz and Chairman Calvert for arranging this field hearing on this important issue. It is an honor to have the U.S. House of Representatives Committee on Resources, Subcommittee on Energy and Water, in the Rio Grande Valley of Texas.

The U.S.-Mexico Water Treaty of 1944 has been a critical instrument in guiding the development of the Rio Grande Valley. Cities, agriculture and industry have all relied upon the assurances provided by the treaty in making long term investments in this region. While some may try to characterize this as a "local issue", it is not—it is an "International issue" for both the United States and Mexico. It is vital that both the countries honor the treaty.

The 1944 treaty obligates Mexico to allow an average of 350,000 acre feet of water flow to the Rio Grande River annually during five year cycles, while obligating the U.S. to allow an average of 1,500,000 acre feet of water flow to Mexico from the Colorado River. During the 1992–1997 cycle, Mexico accrued a deficit of 1, 024,000 acre feet. That deficit has continued to increase during the 1997–2002 cycle, and could total approximately 1,700,000 acre feet by this October. Mexico has failed to accept responsibility for this deficit or address existing problems in order to ensure future compliance.

Severe water shortages in the Rio Grande Valley have caused South Texas severe economic consequences. Many agricultural operations in the region have gone out of business, or, are in dire jeopardy due to the lack of Treaty obligated water. U.S. water reserves for use in this region are at all time lows. Even greater economic losses will occur this year unless there is a resolution to this crisis. While our focus is on U.S. producers, we understand the same crisis exists for neighbor boarder areas in Mexico which also depend upon the Rio Grande River.

The Rio Grande Valley area has experienced a decline of over 100,000 acres of irrigated farmland since 1992. This has resulted in a dramatic decline in income for many producers. Agricultural related business and industry and the communities they serve have suffered from the loss of economic activity.

Job opportunities have also suffered due to Mexico's failure to meet its obligations. Farm laborers play a vital role in the production of food and fiber. With the reduction in irrigation, and the depressing effect that has on farm production and capital, the need for farm workers has diminished. This creates hardships for these workers and their families. It also threatens the long term availability of an adequate farm labor workforce.

We need to reduce our dependence upon Mexico and the weather to supply significant portions of water resources to meet regional needs. Improvements in the irrigation canal systems need to be expedited. The proposals contained in H.R. 2990, which was introduced by Congressmen Hinojosa, Ortiz, Bonilla, Gonzalez, Reyes and Rodriguez, contain many needed improvements to the canal system. Their favorable consideration and expedient completion should be a priority.

Advances in technology and conservation need to be implemented to better utilize the limited available water. Alternative water sources need to be explored and developed, along with water quality improvement efforts.

Agricultural producers have made long term investments based upon the assurance that our government will protect those investments by enforcing the Water treaty. Producers have suffered financially from our government's failure to force Mexico to comply with the treaty. Federal compensation or support of these producers must be given serious consideration.

It is important to point out that producers may also suffer by having their normally irrigated crop land considered "dryland" for crop insurance purposes. An irrigated farm without a dryland history is assigned the county T-yield, which is dramatically lower than irrigated yields. Also, due to the greater risk involved with raising non-irrigated crops, the premium is greater. This results in irrigated producers paying more in premiums for coverage that provides less protection than they would normally have.

Texas Farm Bureau calls upon the federal government, through the State Department, to aggressively enforce compliance with the 1944 Water Treaty. Should these efforts fail, other options can and should be considered by Congress. We encourage efforts to improve efficiencies in the water system. We also call upon the federal government to provide adequate protection or compensation for producers who suffer losses caused by treaty non-compliance.

Texas Farm Bureau calls upon Mexico to make timely and diligent efforts to pay down its water debt. We also call upon Mexico to make changes in its water policy and reservoir management practices to ensure that it can and will comply with the treaty in the future.

Again, "Thank you" to the Committee for holding this hearing to bring attention to this critical issue. Thanks also to the committee for considering improvements contained in H. R. 2990 to the current water canal system. Texas Farm Bureau will continue to work to bring about a positive resolution to the treaty issue.

Summary:

Texas Farm Bureau requests that the Federal Government ensure that Mexico comes into, and stays within, compliance with the U.S.-Mexico Water Treaty of 1944, Minute No. 234 and Minute No. 307.

[A statement submitted for the record by Mr. Oliveira follows:]

Statement of The Honorable Rene O. Oliveira, Member, Texas House of Representatives

I respectfully request that this be entered as written testimony for consideration by your distinguished committee. Given the urgency of our region's water problems, and as the local state representative, I am grateful that you selected Brownsville to conduct your hearing.

The Rio Grande Valley of Texas is an area precariously caught between international agreements, unfavorable climate cycles, and the impact of the water management practices of another nation on the Rio Grande, our primary water source.

Mexico's repayment of the existing water debt, and future adherence to the 1944 treaty, are essential to the well being of local agriculture. Our problems do not stop there, however. Other long-term issues, such as improving irrigation infrastructure, the implementation of large-scale regional desalinization and reverse osmosis programs, and improving the Rio Grande's water quality, should be given careful Congressional consideration.

As you will hear today, our current irrigation system is largely outmoded, resulting in large levels of water evaporation and water losses through irrigation canal

seepage. Above ground irrigation systems also lose large amounts of water due to diminished water pressure and lack of water volume at the field pump outlet as a result of these conveyance inefficiencies. Combined, existing water conveyance systems result in a loss of an estimated 25 percent of our local water supply.

By improving water conveyance through the lining and covering of irrigation canals and using drip pipe irrigation, thousands of acre feet of water could be saved each year. Our goal must be to use less water while increasing crop yields. Federal assistance, such as the elimination of a required local match for irrigation system improvements, is essential in ensuring that these much-needed improvements are made.

To ensure the region's future water supply needs, federal assistance is also vital to the development of desalinization and reverse osmosis programs in the Rio Grande Valley which is expected to exceed a population of 2.1 million residents by 2050. In the portion of the Mexican state of Tamaulipas adjacent to the Rio Grande, where the corresponding local population currently exceeds 2 million residents, population growth is projected to be proportionately greater than in the Rio Grande Valley.

In Tamaulipas, the water use ratio of agriculture to municipal use is even greater than it is in Texas where agriculture uses the vast majority of water. This will place even greater demands on an already strained and degenerating Rio Grande River, now the principal water supply for cities on both sides of the river.

Additionally, local water experts affirm that in Brownsville's corresponding Mexican city of Matamoros, Tamaulipas, with an estimated population exceeding 500,000 residents, the municipal water delivery system is antiquated, resulting in a loss of at least half of the water that city draws from the Rio Grande. Again, management of our shared resource is impacted by factors beyond our local or state control.

Water quality is also of vital concern as usage of the Rio Grande increases. Pesticide runoff, nutrients, volatile organic compounds, dissolved solids, trace elements, and the presence of myriad chemicals from increased industrialization near the river are affecting the safety of the water source. High nutrient levels have also driven the proliferation of water hyacinth and hydrilla, plants which are obstructing river flow, depleting water oxygen levels, and negatively impacting the river's riparian habitat.

Further, because of reduced flows in the Rio Grande, salt water from the Gulf of Mexico has encroached further upriver, increasing salinity, and thereby diminishing the quality of water for both agricultural and municipal uses. Also due to decreased river flows, the mouth of the Rio Grande at the Gulf of Mexico recently closed requiring bulldozers to reopen it. Its flow to Gulf of Mexico is of great importance to shrimp estuaries and the reproductive migrations of red drum, snook and spotted sea trout.

Federal assistance in vitally needed as testimony will underscore today. The water debt and 1944 treaty compliance, federal assistance with improvements in irrigation improvements and desalinization and reverse osmosis projects, Mexico's impact on our shared water source, and attention to Rio Grande water quality should be closely examined by the federal government. Your assistance and leadership are greatly appreciated.

[A statement submitted for the record by Mr. Prewett follows:]

Statement of Ray Prewett, Texas Citrus Mutual and Texas Vegetable Association

On behalf of the Texas citrus and vegetable industries, I appreciate the opportunity to submit this statement for the record. Both of these associations have been very active in addressing this water issue. We commend this committee on holding this important hearing. We particularly appreciate the hearing being held in our area as opposed to it being in Washington D.C.

Agriculture in South Texas is on the verge of disaster. Many farmers are on the verge of going broke. The agricultural industry and the substantial number of related businesses and jobs are getting more desperate every day.

Citrus and sugar cane growers are winding up a reasonably good season, but disaster is right around the corner for them. Recently a Texas A&M representative characterized the growing conditions for cotton as "off to a very poor start". Vegetables like melons probably have enough water to finish out the season because harvest has already started. Will there be enough water to plant onions this fall? Will citrus and sugar cane have enough water for this next season? Growing cotton and grain sorghum as dry land as opposed to irrigated is a poor alternative especially

on soil that is not conditioned to growing these crops on a dry land basis. Citrus, sugar cane and vegetables cannot be produced as non-irrigated crops.

Crop insurance is supposed to be a safety net for agriculture, but the irrigation water shortage and our government's interpretation of the rules for our current water situation have dramatically reduced the usefulness of this program. We have discussed this issue with top officials in USDA, but they are not receptive to the basic notion the problem we face is beyond our control and requires "thinking outside of the box". We believe strongly that our government is at least partly responsible for this water shortage problem because they have failed to enforce the terms of an international treaty.

At least one of the 28 irrigation districts may be completely out of irrigation water in two weeks. Some farmers are already out of water. Most districts will be out or at least nearly out of irrigation water by August.

Mexico claims they do not have the water to pay back the 1.5 million acre-feet they owe. Yet irrigation usage in Chihuahua, the heart of the Rio Conchos river basin, has increased in the last 10 years while irrigated acreage in this Rio Grande Valley area has been declining. If you were a farmer in South Texas, how would these circumstances make you feel?

Texas A&M University has estimated that $652 per acre-foot of water not used is the value of that water to the regional economy. If you apply this value of water to the 1.5 million acre-feet owed, you come up with a total impact on the regional economy of $978 million. The U.S. Department of Agriculture finally released their report on the impact of the Mexico deficit 60 days late and mostly what they had to say was they had trouble finding data to determine the impact of this deficit. How can the USDA fail to find data to measure a loss of approximately $1 billion!

Producers in the Rio Grande Valley realize Mexico is not capable of paying back their debt of 1.5 million acre-feet unless there is a hurricane or similar large rain event in their watershed. Producers do not want a handout but someone needs to provide at least some "bridge" assistance in this situation. The water debt was unexpected until a few years ago and is totally out of the control of producers. Bridge assistance in terms of cash assistance is needed to tide farmers over until Mexico pays back its debt. H.R. 2990 will help conserve water in this area in may be five years if the projects are authorized and funded right away, but that may be too little too late. Farmers in this area need help in the next two months and not in five years.

Thank you for the opportunity to submit these comments. I would like to add in closing that if the federal government is serious about helping with this crisis, a number of us are willing to sit down starting tomorrow and work out the kind of assistance that would be most helpful.

[A statement submitted for the record by Mr. Rosson follows:]

A PRELIMINARY ASSESSMENT OF CROP PRODUCTION AND ESTIMATED IRRIGATION WATER USE FOR CHIHUAHUA, MEXICO

C. PARR ROSSON, III

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CENTER FOR NORTH AMERICAN STUDIES

TEXAS A&M UNIVERSITY

MAY 2, 2002A PRELIMINARY ASSESSMENT OF CROP PRODUCTION AND ESTIMATED IRRIGATION WATER USE FOR CHIHUAHUA, MEXICO

Executive Summary

In May 2002, Mexico's accumulated water debt with the United States had reached 1.5 million acre feet. Prolonged drought in South Texas and northern Mexico, trade growth and increased agricultural production spurred by NAFTA, and an increasing population and industrial base on both sides of the U.S.–Mexico border, have placed greater pressure on the Rio Conchos/Rio Grande water system. During this time, 1994–99, crop irrigation and production have continued in Chihuahua, which contains the Rio Conchos basin, a major Mexican water source of the Rio Grande River.

Irrigated production of the crops grown in the Mexican state of Chihuahua and analyzed in this study increased 200 percent between 1980 and 1999, going from 1.0 million metric tons (mmt) to 3.0 mmt. Irrigated harvested area increased 35 percent over the same period from 554,613 acres to 750,430 acres. From 1995 and 1999, irrigated production was up 11.2 percent while irrigated harvested area increased 3.3 percent. Average irrigated crop yields increased nearly eight percent over this same period, ranging from 0.4 percent for barley to 83 percent for cantaloupe.

Although the total acreage under irrigation has increased only marginally, producers in Chihuahua have reduced harvested area for the grains, soybean, and cotton crop category by 30,000 acres and forages by 3,000 acres. Vegetables, melons, fruits, and nuts, however, account for an increase of 55,700 irrigated acres, leading to a net gain of 22,700 acres under irrigation, an increase of 3.13 percent. This change in irrigated crop mix was most likely profit driven as producers switched from crops with relatively low prices, such as grain sorghum, barley, rye and soybeans, to those with higher prices, such as alfalfa, cantaloupe, peanuts, peppers, potatoes, and watermelon. It should be noted that many of these alternative crops are more water-intensive than crops previously produced in Chihuahua.

Irrigation water use, while down from its peak of 2.3 million acre feet (maf) in 1997, increased five percent from 1995–99, with the largest increase, 47 percent, between 1996 and 1997. Increased irrigation water use was due to larger acreage of water-intensive crops such as alfalfa, apples, pecans, melons, vegetables, and corn. It is estimated that irrigated alfalfa acreage increased 11 percent from 1999–2001, while production tripled, due mostly to higher yields.

Despite prolonged drought, producers in Chihuahua have continued to grow irrigated crops. Although total irrigated acreage has increased only marginally, producers have switched from crops that use less water to crops that use more water, causing total water use to rise by more than the increase in total irrigated acreage. While Mexico claims that surface water use has fallen, it appears that the use of wells for irrigation has increased. Continued groundwater irrigation in the region will likely reduce stream runoff and limit the flow of water from the Rio Conchos basin into the Rio Grande, though the precise amount is not measurable with existing data.A Preliminary Assessment of Crop Production and Estimated Irrigation Water Use for Chihuahua, Mexico

Drought in the Lower Rio Grande Valley of Texas (LRGV) and northern Mexico has focused recent attention on the importance of the Rio Conchos watershed as a major source of shared water between the two countries. Trade growth and increased agricultural production spurred by NAFTA, along with an increasing population and industrial base on both sides of the U.S.–Mexico border, have placed greater pressure on the Rio Conchos/Rio Grande water system. In the Rio Conchos basin, agricultural irrigation represented 92.7 percent of total water use in 1995 (Kelly, p. 16). In the LRGV of Texas, irrigation accounts for 85 percent of water use.

Mexican authorities claim that the drought (1994–99) has reduced available water so that they cannot deliver the 350,000 acre feet (af)/year agreed to in the Water Treaty of 1944. Mexico's accumulated water debt has reached 1.5 million acre feet (maf). Recent articles in the Austin–American Statesman document the growing water shortages in Chihuahua, where many of the tributaries draining into the Rio Conchos originate. Some authorities in Texas and the United States claim that Mexico is in violation of the treaty and are calling for a resolution of the issue. These views are documented in the Brownsville Herald and the McAllen Monitor, and most recently in major news reports by the Associated Press and Washington Post.

The purpose of this study is two-fold:

1. To document recent trends in irrigated production of major crops grown in the Mexican state of Chihuahua, focusing on the drought period 1994–99, and

2. To estimate the amount of irrigation water used in Chihuahua to sustain crop production under semi-arid conditions in the region.

All results reported in this study are preliminary and may change as additional data become available and are incorporated into the analysis.

Chihuahua and the Rio Conchos

Chihuahua is a diverse agricultural production region. Although historically known for production of apples, peaches, and pecans, more recently there has been increased production of peanuts, alfalfa, cantaloupe, and watermelon. Crops are grown under semi-arid conditions. Rainfall averages from 13.8–16.7 inches per year, with two-thirds occurring from May–October, and peak rainfall from July to September (CROPOWAT 7.0). October–January is relatively dry with less than 1.0 inch falling in most months. Since 1960, temperatures at the Chihuahua, Chihuahua weather station have averaged from a low of 50 degrees Farenheit in late November through January to a high 80.6 degrees in early June (USDA, FAS, PECAD).

It has been documented that annual inflows to La Boquilla, Chihuahua's largest reservoir, were 33 percent lower during the period 1994–99, 699,000 af, compared to the long-term historical average, 1.043 maf (Kelly and Comision Nacional del Agua–CNA). The major irrigation districts in the Rio Conchos basin reduced water use between 42 percent to 15 percent during the drought period (1994–99, Kelly). The Texas Center for Policy Studies report noted that as surface water availability has declined, the use of wells for irrigation has increased. This led to high extraction rates for some of Chihuahua's major aquifers, with use exceeding recharge by 19 to 127 percent. It is not clear that overuse of these aquifers has reduced water flows into the Rio Conchos and its tributaries, but concerns have been raised about this possibility. Some analysts believe that drought in Mexico and Texas, coupled with increased water use from wells in Chihuahua, likely exacerbated the water problem, leading to reduced water availability for irrigation in the LRGV of Texas and in the Mexican state of Tamaulipas. It was estimated that annual average rainfall in the Rio Conchos basin was 47 percent of normal in 1994 and 69 percent of normal in 1995. For 1993, 1996, and 1997 rainfall was estimated at about 80 percent of normal levels (Kelly from the Brandes Report).

Surface water represents about 20 percent of the available irrigation water supply in the Delicias irrigation district, with the major sources being the La Boquilla and Francisco Madero reservoirs (Kelly). Together, these two reservoirs account for 77 percent of storage capacity in the Rio Conchos basin (Center for North American Studies–CNAS estimate). The San Gabriel and Pico de Aguila supply the Rio Florido irrigation district, which uses primarily surface water for irrigation. The Bajo Rio Conchos district relies primarily on the Luis L. Leon reservoir. CNA estimates indicate that water use efficiency in the Rio Conchos basin is about 40 percent (Kelly). It is likely that these high rates of water loss represent system delivery inefficiencies due to seepage and evaporation in canals as well as irrigation losses due to runoff, wind, evaporation, and improper irrigation water application. It is uncertain exactly what proportion of total irrigation water is represented by surface sources and groundwater throughout the Rio Conchos basin.

Crop Production Trends

Irrigated crop production in the Mexican state of Chihuahua has increased 200 percent since 1980, from 1.0 million metric tons (mmt) to 3.0 mmt in 1999 (table 1). Irrigated harvested area increased 35 percent over the same period from 554,613 acres to 750,430 acres. Yields for all irrigated crops increased 114 percent to 4.03 mt/acre. For 1999, grains, soybeans, and cotton accounted for 41 percent of irrigated production in Chihuahua, followed by forages (22 percent), tree nuts, fruits, and peanuts (20 percent), and vegetables (17 percent). It is estimated that irrigated production represents about 82 percent of total agricultural production in the state, but this varies widely by crop.

The peak in irrigated acreage and production in Chihuahua was 1997 when 1,106,341 acres were harvested to produce 4.274 mmt of output (table 1). Since then, irrigated acreage has fallen 32 percent, production is down 29 percent, but irrigated crop yields have declined only four percent. Irrigated corn, alfalfa, cotton, pecans, apples, dry beans, and green peppers represented 73 percent of total irrigated crop acreage in Chihuahua for 1999.

Grains, Soybeans, and Cotton

Irrigated corn acreage was 38 percent of total corn acreage in 1999, but accounted for 85 percent of corn production. Since 1995 irrigated corn acreage has increased 23.2 percent, from 123,861 acres to 152,414 acres (table 1). Production of irrigated corn increased 63 percent, while yields were up by 33 percent. Peak irrigated corn production occurred in 1992 at 725,000 mt. Irrigated corn acreage, however, peaked in 1993 at 327,845, with yields peaking in 1999 at 2.784 mt/acre or about 110 bushels/acre.

Mexico's Servicio de Informacion Y Estadistica Agroalimentaria Y Pesquera (SIAP) reports that for the 2001 crop year Chihuahua's total corn for grain production was 657,120 mt while total acreage was 560,455. Center for North Americas Studies estimates of irrigated corn production and acreage are 523,987 mt and 191,115 acres, respectively. The irrigated corn yield for 2001 was calculated to be 2.74 mt/acre or 108 bushels. These estimates assume that irrigated corn acreage was 34.1 percent of total in 2001 which was the average from 1995–99 and that irrigated corn production was 79.74 percent of total corn production, reflective of the same five year average. These estimates would indicate that between 1999 and 2001 irrigated corn acreage in Chihuahua increased by 25 percent and that irrigated corn production was up 23 percent.

Irrigated cotton acreage has declined nearly 10 percent since 1995 and peaked at 158,000 acres in 1997. Irrigated production was off by the same amount, but yields held steady at about 1.43 bales per acre.

Irrigated acreage of soybeans, grain sorghum, rye grass, wheat and barley have all declined over the periods 1990–99 and 1995–99. In 1999 there were only 1,600 acres of barley for grain and 300 acres of soybeans harvested in the state.

Forages

Alfalfa is the number one irrigated forage crop produced in Chihuahua accounting for 69 percent of acreage and 64 percent of irrigated forage production in 1999 (table 1. Oats, corn, sorghum, and wheat account for a majority of the remaining output.

Alfalfa acreage has increased 14 percent since 1995, but 110 percent since 1990 and was not reported in any significant amount before 1987. Alfalfa production has expanded 64 percent since 1995, while yields have increased 44 percent over the same period. For 2001, SIAP estimates indicate that alfalfa acreage was up by 11 percent in 2001 over 1999, while production nearly tripled to 2.0 mmt with yields up 159 percent to 15.51 mt/acre. Corn, sorghum, and oats forages have all declined in acreage since 1995, but oats forage production has increased by 26 percent due to higher yields.

2. Tree Nuts, Tree Fruits and Peanuts

Irrigated apples and pecans accounted for 84 percent of tree fruit, tree nut, and peanut acreage in 1999 (table 1). Apple acreage was up nine percent since 1995 and 31 percent since 1990, while pecan acreage increased by 21 and 53 percent, respectively, over the same period. Irrigated apple output increased 17 percent, while pecan production was up 54 percent. Peanuts, the next most important irrigated crop of this category with 20,119 harvested acres in 1999, were up 303 percent in acreage and 313 percent in production since 1995. Peanut acreage also increased 20 percent from 1990–99, while output was up 71 percent over the same period.

Melons and Vegetables

Irrigated vegetable and melon acreage has increased 23 percent since 1995 and 177 percent since 1990, while production is up 41 and 255 percent for the same periods (table 1). Peak acreage and production occurred in 1997, with total acreage falling 30 percent and production off 18 percent since then. Irrigated dry beans, green peppers, and onions accounted for 73 percent of total irrigated reported vegetable acreage and 64 percent of irrigated vegetable production. Potatoes, dry peppers, watermelon, cantaloupe, and tomatoes represent the other major vegetable crops grown in the region. All other vegetable crops reported declines in acreage and production, but accounted for only 1,600 harvested acres.

The largest proportional increases in vegetable and melon acreage were for watermelon, dry peppers, potatoes, cantaloupe and onions. Acreage increases for 1995–99 ranged from eight percent for tomatoes to 116 percent for watermelon. Increases in irrigated production (1995–99) ranged from 230 percent for watermelon and 110 percent for cantaloupe to 96 percent for potatoes and 43 percent for onions. Irrigated production of tomatoes and dry peppers experienced declines of 31 and 11 percent, respectively.

Over the 1990–99 period irrigated watermelon acreage was up 600 percent, followed by tomatoes (517 percent), dry beans (151 percent), cantaloupe (132 percent), green peppers (120 percent), and onions (61 percent). Production increases over the same period were 891 percent for watermelon, 702 percent for tomatoes, 452 percent for cantaloupe, 180 percent for green peppers, 160 percent for dry beans, and 83 percent for potatoes.

Summary

From 1995–99, producers in Chihuahua have reduced harvested area for the grains, soybean, and cotton crop category by 30,000 acres and forages by 3,000 acres. Vegetables, melons, fruits, and nuts account for an increase of 55,700 irrigated acres, leading to a net gain of 22,700 acres under irrigation, an increase of 3.13 percent. This change in irrigated crop mix was likely profit driven as producers switched from crops with relatively low prices, such as grain sorghum and soybeans, to those with higher prices, such as alfalfa, cantaloupe, peanuts, peppers, potatoes, and watermelon. It should be noted that many of these alternative crops are more water-intensive than crops previously produced in Chihuahua.

Estimated Irrigation Water Use

Irrigation water use estimates were derived using irrigated acreage numbers from the above analysis and applying them to the CROPWAT model version 7 developed by the Food and Agriculture Organization of the United Nations. CROPWAT 7 calculates irrigation water use for various crops after accounting for local evapo-tran-

spiration rates, water use efficiency, rainfall, soil type, and optimum yields for each crop. To estimate water use in Chihuahua, CROPWAT was adjusted to reflect actual evapo-transpiration rates for Chihuahua based upon semi-arid climactic conditions, local rainfall amounts, a medium soil, 50 percent water use efficiency, and optimum yields for each crop analyzed. Data were lacking for four crops, potatoes, cucumbers, other fruits, and other vegetables, so the estimates in this report reflect a lower bound for the actual irrigation water used in the state. It should be emphasized that these estimates are preliminary and may change as this analysis is refined.

Total estimated irrigation water use in Chihuahua has nearly doubled since 1980 from 1.2 maf to a peak usage of 2.3 maf in 1997 (table 2). Since 1980, average annual irrigation water use increased by five percent each year up to the peak usage. The single largest year-to-year increase in the use of water for irrigation occurred from 1995 to 1996 when usage expanded by 47 percent, likely due to worsening drought conditions in the Rio Conchos basin. Since 1997, irrigation water use has fallen to 1.58 maf in 1999, a drop of 31 percent. Between 1995–99 irrigation water use increased five percent, indicating that while reservoirs in the Chihuahua may have fallen due to drought, producers switched to underground water sources for irrigation.

Five crops used 1.173 maf of irrigation water in 1999 and accounted for 74 percent of irrigation water use. In order of importance, these were: corn (293.6 thousand acre feet-taf), alfalfa (261 taf), cotton (224.2 taf), apples (193.9 maf), and pecans (174.8 taf) (table 2). Among these top five crops, water use per acre ranged from a low of 1.92 af for corn to a high of 3.38 af for apples. Due to relatively low water delivery efficiency in most of the region and to low water use efficiency on farm, these per acre usage figures could increase as this analysis is refined to more accurately reflect the actual efficiency of water use in the region. It has been estimated that 90 percent of the alfalfa and most of the pecan orchards in the region are flood irrigated, leading to relatively high rates of water loss due to runoff and evaporation (Kelly and Personal interview, Julie Watson Associated Press 5/1/02).

Green peppers, grain sorghum, and wheat together used 197.3 taf of irrigation water in 1999 (table 2). Other major crops using irrigation water were oats, dry beans, onions, peanuts, and watermelon, which together used an estimated 159.3 taf of irrigation water in 1999. Dry peppers, tomatoes, peaches, rye grass, and cantaloupe accounted for most of the remaining irrigation water use. Among these crops, peaches is the most water intensive on a per acre basis (3.38 af), followed by tomatoes (2.91 af), cantaloupe (2.03 af), dry peppers (1.76 af), and rye grass (1.03 af).

2. Conclusions

Despite prolonged drought, irrigation and agricultural production have continued in Chihuahua, Mexico. While total irrigated acreage has declined 32 percent from the peak in 1997, it has increased over the period 1995–99 by three percent, while irrigated production rose 11 percent. Producers have switched from relatively low profitability crops to alternatives that are more profitable and more water-intensive. As a result, irrigation water use, while down from its peak of 2.3 maf in 1997, increased five percent from 1995–99, with the largest increase, 47 percent, between 1996 and 1997. It is estimated that irrigated alfalfa acreage has increased 11 percent from 1999–2001, but production tripled due to higher yields. It is uncertain what proportion of total irrigation water is from surface and groundwater sources. Increased use of aquifers in the Rio Conchos basin, however, will most likely lower the water table in the region, leading to reduced runoff and less surface water availability downstream in the Rio Grande River.

Harvested Acres, Production and Yields for Irrigated Crops in Chihuahua, Mexico
1980-199 and Selected Estimates for 2001

	1980	1985	1990	1995	1996	1997	1998	1999	2001 E
GRAIN CORN									
Harvested Acres	61520	80920	126268	123861	146370	228577	176264	152614	191115
Production MT	54773	89697	255861	260377	319915	566938	436310	424770	523742
Yield	0.89	1.11	2.03	2.10	2.19	2.48	2.48	2.78	2.74
GRAIN WHEAT									
Harvested Acres	118195	140978	98828	39165	41550	79556	36009	20603	
Production MT	170340	230276	167201	63225	71425	182815	67900	38580	
Yield	1.44	1.63	1.69	1.61	1.72	2.30	1.88	1.87	
GRAIN OATS									
Harvested Acres	6627	7324	21814	13203	12244	12422	9486	17826	
Production MT	9384	9684	26134	18275	16220	17732	11533	22692	
Yield	1.42	1.32	1.20	1.38	1.32	1.43	1.23	1.27	
SOYBEANS									
Harvested Acres	45269	57784	24992	1594	74	17668	4584	314	
Production MT	40833	40660	21309	1154	73	17525	2987	316	
Yield	0.90	0.70	0.85	0.72	0.98	0.99	0.65	1.01	
GRAIN SORGUM									
Harvested Acres	42701	86922	63436	29143	39563	57107	33376	28518	
Production MT	60953	151032	126044	58352	83654	121936	78656	59707	
Yield	1.43	1.74	1.99	2.00	2.11	2.14	2.36	2.09	
RYE GRASS									
Harvested Acres	0	0	0	37609	27260	3286	3551	7203	
Production MT	0	0	0	407744	463786	65888	68771	127332	
Yield	0.00	0.00	0.00	10.84	17.01	20.05	19.37	17.68	
COTTON									
Harvested Acres	93977	71731	82163	88627	123767	157929	138838	80078	
Production MT	81523	64571	76352	85831	135095	170139	149862	77645	
Yield	0.87	0.90	0.93	0.97	1.09	1.08	1.08	0.97	
BARLEY GRAIN									
Harvested Acres	8631	8130	12745	5424	5069	7962	3039	1651	
Production MT	7120	13494	21214	9667	9246	15096	5883	2453	
Yield	2.04	4.10	4.11	4.40	4.51	4.69	4.78	3.67	
Total Grains									
Harvested Acres	376921	453789	430246	338626	395896	564507	405207	308806	
Production MT	424926	599414	694115	904625	1099417	1158069	822002	753495	
Yield	1.13	1.32	1.61	2.67	2.78	2.05	2.03	2.44	

Source: Secretary of Agriculture, Livestock, Rural Development, Fisheries and Food (SAGARPA)
2001 Estimates from Center for North American Studies using SAGARPA data.

Harvested Acres, Production and Yields for Irrigated Crops in Chihuahua, Mexico
1980-199 and Selected Estimates for 2001

	1980	1985	1990	1995	1996	1997	1998	1999	2001 E
CORN FORAGE									
Harvested Acres	12913	202078	18192	20667	13217	48720	21063	13330	
Production MT	131660	229944	236470	258749	531469	773714	316321	193486	
Yield	10.19	11.38	12.99	12.52	40.21	15.88	15.02	14.51	
SORGHUM FORAGE									
Harvested Acres	6051	9461	6869	13776	14720	6966	11157	12852	
Production MT	78368	143970	103304	187487	188460	57665	115280	199690	
Yield	12.95	15.22	15.04	13.61	12.81	8.28	10.33	9.31	
BARLEY FORAGE									
Harvested Acres	3798	0	867	0	0	541	82	25	
Production MT	1550	0	1959	0	0	1637	197	80	
Yield	0.41	0.00	2.26	0.00	0.00	3.02	2.42	3.24	
OATS FORAGE									
Harvested Acres	5379	12896	19637	34863	3005	1742	2666	6160	
Production MT	52084	67508	95893	79505	5397	3395	4924	13990	
Yield	9.68	5.24	4.89	2.28	1.80	1.95	1.85	2.27	
ALFALFA									
Harvested Acres	0	0	113629	100533	82225	128275	109008	114877	128376
Production MT	0	0	520801	416776	432312	681422	635822	684231	1990750
Yield	0.00	0.00	4.59	4.14	5.26	5.31	5.83	5.96	15.51
OATS CUT									
Harvested Acres	0	0	0	0	22832	21920	17134	18231	
Production MT	0	0	0	0	42926	64632	56969	53933	
Yield	0	0	0	0	4.65	7.29	8.22	7.31	
WHEAT FORRAGE									
Harvested Acres	5268.172	1934.793	630.105	0	0	425.012	533.736	1504.839	
Production MT	7277	4265	2550	0	0	1739	3167	10094	
Yield	3.41	5.45	10	0	0	10.11	14.66	16.57	
Total Forage									
Harvested Acres	33410	44500	159824	169839	135999	208594	161643	166985	
Production MT	270939	445687	960977	942517	1200564.44	1584204	1132680	1075504	
Yield	8.11	10.02	6.01	5.55	8.83	7.59	7.01	6.44	

Source: Secretary of Agriculture, Livestock, Rural Development, Fisheries and Food (SAGARPA)
2001 Estimates from Center for North American Studies using SAGARPA data.

Harvested Acres, Production and Yields for Irrigated Crops in Chihuahua, Mexico
1980-199 and Selected Estimates for 2001

	1980	1985	1990	1995	1996	1997	1998	1999	2001 E
GREEN PEPPERS									
Harvested Acres	14226	13464	17964	31382	31295	65501	50166	39457	
Production MT	68964	120260	120076	310881	268875	545964	433272	338001	
Yield	4.85	8.93	6.69	9.91	8.59	8.34	8.64	8.57	
ONION									
Harvested Acres	5024	9815	8495	10010	8105	10707	12960	13707	7724
Production MT	66803	133046	84319	131644	105169	163187	174284	188258	105094
Yield	13.30	13.56	9.93	13.15	12.97	15.24	13.45	13.74	13.61
BEANS									
Harvested Acres	15231	14972	15992	47416	32486	75440	43032	40090	37432
Production MT	7171	5535	6819	23790	16598	23561	20242	17701	17071
Yield	0.47	0.37	0.42	0.50	0.51	0.31	0.47	0.44	0.46
CANTALOUPE									
Harvested Acres	773	516	1465	2965	2288	2718	2958	3393	
Production MT	5160	5291	6256	16463	16562	29203	32134	34552	
Yield	6.67	10.25	4.27	5.55	7.24	10.74	10.87	10.19	
RED TOMATO									
Harvested Acres	1109	0	0	0	0	3543	2686	3842	2755
Production MT	3249	0	0	0	0	41964	27918	28757	23906
Yield	2.93	0.00	0.00	0.00	0.00	11.84	10.39	7.48	8.68
POTATOES									
Harvested Acres	2214	6385	0	6733	6528	9125	6766	11883	10056
Production MT	17142	63092	0	71305	77776	94527	80256	139458	169161
Yield	7.74	9.88	0.00	10.59	11.91	10.36	11.86	11.74	16.82
OTHER VEGETABLES									
Harvested Acres	0	0	1364	1878	2301	1307	1433	1117	
Production MT	0	0	11939	12071	13285	7113	7464	5000	
Yield	0.00	0.00	21.63	15.88	14.27	13.45	12.87	11.06	
CUCUMBER									
Harvested Acres	12	0	0	850	759	1661	783	497	
Production MT	150	0	0	6786	6198	9095	4309	2815	
Yield	30.00	0.00	0.00	19.73	20.19	13.53	13.59	14.00	
WATERMELON									
Harvested Acres	625	44	1018	3296	3524	8812	5266	7109	13240
Production MT	2410	299	8585	25771	36464	107035	59594	85058	146637
Yield	9.53	16.61	20.84	19.32	25.57	30.02	27.97	29.56	11.08
DRY PEPPERS									
Harvested Acres	912	781	0	0	0	4401	4277	7171	
Production MT	147	215	0	0	0	6691	3414	5975	
Yield	0.40	0.68	0.00	0.00	0.00	3.76	1.97	2.06	
Total Vegetables									
Harvested Acres	40127	45978	46299	104531	87286	183215	130328	128265	
Production MT	171196	327738	237994	598711	540927	1028340	842887	845575	
Yield	4.27	7.13	5.14	5.73	6.20	5.61	6.47	6.59	

Source: Secretary of Agriculture, Livestock, Rural Development, Fisheries and Food (SAGARPA)
2001 Estimates from Center for North American Studies using SAGARPA data.

Harvested Acres, Production and Yields for Irrigated Crops in Chihuahua, Mexico
1980-199 and Selected Estimates for 2001

	1980	1985	1990	1995	1996	1997	1998	1999	2001 E
APPLES									
Harvested Acres	56628	42743	43769	52689	48469	57834	44265	57416	
Production MT	134491	206076	256977	230355	234172	406216	199353	269894	
Yield	2.38	4.82	5.87	4.37	4.83	7.03	4.50	4.70	
PEACHES									
Harvested Acres	9429	4458	3425	1989	2602	2701	2147	2812	
Production MT	18091	16735	23344	12479	16327	26381	9945	21460	
Yield	1.92	3.76	6.82	6.27	6.28	9.77	4.63	7.63	
PECANS									
Harvested Acres	20616	30868	42667	54253	56423	54972	60992	65484	
Production MT	3466	12669	21308	23560	24000	27325	30515	36381	
Yield	0.17	0.41	0.50	0.43	0.42	0.50	0.50	0.55	
PEANUTS									
Harvested Acres	16533	27295	16830	4986	5481	34087	27065	20119	
Production MT	14953	20312	10982	5033	5856	41387	19823	20807	
Yield	0.90	0.74	0.65	1.01	1.07	1.21	0.73	1.04	
VARIOUS FRUIT TREES									
Harvested Acres	0	0	2014	220	0	47	0	99	
Production MT	0	0	6643	692	0	19	0	20	
Yield	0.00	0.00	8.15	7.78	0.00	1.00	0.00	0.50	
PEAR									
Harvested Acres	949	914	0	511	156	383	447	445	
Production MT	2310	1742	0	1716	1241	2069	1891	1562	
Yield	6.02	4.71	0.00	8.29	19.70	13.35	10.45	8.68	
Total Tree Fruits and Nuts									
Harvested Acres	104155	106278	108704	114649	113130	150024	134917	146375	
Production MT	173311	257534	319254	273835	281598	503397	261527	350124	
Yield	1.66	2.42	2.94	2.39	2.49	3.36	1.94	2.39	
Total All									
Harvested Acres	**554613**	**650545**	**745073**	**727645**	**732311**	**1106341**	**832094**	**750430**	
Production MT	**1040372**	**1630373**	**2212340**	**2719688**	**3122504**	**4274010**	**3059096**	**3024698**	
Yield	**1.88**	**2.51**	**2.97**	**3.74**	**4.26**	**3.86**	**3.68**	**4.03**	

Source: Secretary of Agriculture, Livestock, Rural Development, Fisheries and Food (SAGARPA)
2001 Estimates from Center for North American Studies using SAGARPA data.

	AF/Acre	1980	1985	1990	1995	1996	1997	1998	1999	2001 E*
Grain Corn	1.92	118,372	155,700	242,954	238,323	281,632	439,809	339,152	293,646	367,727
Corn Forrage	1.92	24,847	38,882	35,003	39,767	25,432	93,754	40,527	25,660	
Cotton	2.80	263,083	200,806	230,011	248,107	346,479	442,113	388,669	224,173	
Alfalfa	2.27	-	-	258,169	228,414	186,818	291,445	247,671	261,004	291,675
Pecans	2.67	55,044	82,416	113,922	144,858	150,651	146,778	162,850	174,844	
Apples	3.38	191,215	144,331	147,794	177,915	163,663	195,286	149,471	193,876	
Dry Beans	0.84	12,813	12,595	13,453	39,888	27,329	63,463	36,200	33,725	31,489
Green Peppers	1.85	26,358	24,948	33,285	58,146	57,986	121,364	92,951	73,108	93,999
Grain Wheat	2.62	309,430	369,074	258,727	102,533	108,776	208,275	94,428	53,938	
Wheat Forrage	2.52	13,274	4,875	1,588	-	-	1,071	1,345	3,792	
Grain Sorghum	1.61	68,590	139,621	101,894	46,811	63,549	91,730	53,610	45,607	
Sorghum Forrage	1.61	9,720	15,198	11,034	22,128	23,644	11,189	17,920	20,643	
Soybeans	1.01	45,934	58,634	25,359	1,617	75	17,927	4,651	318	
Barley Grain	1.13	9,719	9,154	14,351	6,107	5,707	8,965	3,422	1,859	
Barley Forrage	1.13	4,276	-	977	-	-	609	92	28	
Tomato	2.91	3,228	-	-	-	-	10,310	7,815	11,180	8,016
Peanuts	1.24	20,490	33,826	20,857	6,180	6,792	42,244	33,541	24,933	
Onions	2.10	10,538	20,588	17,820	20,998	17,001	22,459	27,187	28,752	16,202
Cantaloupe	2.03	1,573	1,050	2,980	6,030	4,654	5,528	6,015	6,900	
Pears	3.38	3,204	3,087	-	1,727	526	1,293	1,510	1,502	
Peaches	3.38	31,840	15,052	11,564	6,717	8,786	9,120	7,251	9,495	
Oats Forage	1.22	6,539	15,676	23,871	42,380	3,653	2,118	3,241	7,488	
Oats Grain	1.65	10,939	12,089	36,007	21,793	20,210	20,504	15,658	29,424	
Oats Cut	1.22	-	-	-	-	27,754	26,646	20,828	22,162	
Rye Grass	1.04	-	-	-	38,950	28,232	3,404	3,677	7,460	
Dry Peppers	1.76	1,603	1,373	-	-	-	7,738	7,521	12,609	
Watermelon	1.79	1,122	80	1,827	5,915	6,323	15,812	9,449	12,757	23,756
Total		**1,243,752**	**1,359,057**	**1,603,447**	**1,505,303**	**1,565,671**	**2,300,953**	**1,776,653**	**1,581,084**	**832,867**

* Total of six crops available

Source: CROPWAT 7.0 and Center for North American Study Estimates