# PLHINO: Water to Green Mexico's Farmland

*by Alberto Vizcarra Osuna*

In the south, runoff from Mexico's high mountains delivers abundant water to land of low agricultural potential in a tropical climate. In the north, vast expanses of open land lack sufficient water to realize their great potential for growing grains and other crops to feed the nation. So, in the 1950s and 1960s, inspired by the earlier successes of the United States under Franklin Delano Roosevelt, Mexico drew up plans for great engineering projects which would transfer the water from the rainy south to the drier, agricultural north.

The outlook was shaped by the can-do attitude of the neighbor to the north, where FDR's use of public investment in economic structure, dams and waterways in particular, had been crucial to reversing the Great Depression. Under Roosevelt, entities such as the Columbia River, Colorado River, and Tennessee Valley authorities, had transformed flood plains threatened by uncontrolled rivers into productive farms, and allowed the growth of cities and factories in areas where water had been scarce. At one point during the Roosevelt years, 20 great infrastructure projects were under way simultaneously.

*Mexico's great project, PLHINO, The Water Plan of the Northwest, as depicted in a video produced by the LaRouche Youth Movement and available at http://www.larouchepac.com/node/9257. The 40-minute video, "NAWAPA-PLHINO: The Future of the Americas," reports on the history of these water projects and the current political movement to bring them to life.*

*A great infrastructure project to move water from the mountains of the south to nourish the abundant farmland of Mexico's dry north.*

In the 1950s, under a system of collaboration between the government and private sectors, the United States drew up a plan for transferring huge volumes of water from the rivers of Alaska and northern Canada to the vast expanses that comprise the Great American Desert, covering the entire southern border of the United States. This project was known as the North American Water and Power Alliance, or NAWAPA.

The economic success of these policies inspired a similar impulse in Mexico, and there arose a generation of young engineers, inspired to create great infrastructure projects for the transference of water. It was in this way that projects like the Northwest Hydraulic Plan (*Plan Hidraulico Noroeste,* or PLHINO) and the Northern Gulf Hydraulic Plan (*Plan Hidraulico del Golfo Norte,* or PLHIGON) were conceived.

**The Water Projects Take Shape**

Since the 1940s, in the Northwest region of the country, Mexican engineers of the then National Irrigation Commission had the idea of interconnecting two basins, one with an abundance of water and scarcity of soil, and the other with a greater amount of soil and lesser availability of water. They conceived of conveying water from the Humaya River, in the state of Sinaloa, to irrigate the land on the right bank of the Mocorito River, in the same state.

In the 1960s, the first approximation of the idea of the PLHINO was born, which proposed the interconnection of the hydrological basins included between the Piaxtla River in Sinaloa and the Sonora River in the state of Sonora.

In 1968, the idea of interconnecting the rivers in Nayarit, which possess large volumes of water (the Santiago, San Pedro, and Acaponeta) was consolidated, thus endowing the project with extraordinary potential, inasmuch as it put forward the concept that interconnecting the 16 consecutive rivers and 7 streams of the states of Nayarit, Sinaloa, and Sonora, would allow the use of a total annual run-off of 28 billion cubic meters.

This would provide the region with the means to efficiently sustain itself, generating productive jobs, water for urban and industrial usage, and water for electric energy. It would enable the region to develop fish farming and tour-

The maps and description of the PLHINO, PHLIGON, and NAWAPA below can be found in greater detail in *Executive Intelligence Review*, Dec. 7, 2007, in an article by Dennis Small, "U.S. and Mexico: Cooperate on Great Water Projects."


Source: INEGI (Mexico).

**Figure 1**
**MEXICO'S MAJOR RIVERS**

Mexico's great challenge has been to take water from where it is abundant, and transfer it to where it is not. In the most recent design for the PLHINO, Mexican engineer Manuel Frías Alcaraz makes use of about 75 percent of the runoff from five underutilized rivers on the central Pacific Coast of Mexico to feed a canal running northwest along the Pacific Coast. These rivers are San Pedro, Acaponeta, Baluarte, Presido, and Piaxtla, as shown here.

Each of these rivers would have new dams constructed upstream, and would be connected by a series of four tunnels, (ranging from 21 to 33 km in length, with 7-meter-diameter tubing). The tunnels would gradually bring the water down by gravity from 570 meters above sea level at the first dam, to 370 meters above sea level at the last one.

From the Piaxtla reservoir, at 370 meters above sea level, Frías has proposed a series of canals, pumping stations, and smaller dams and tunnels that would transfer the accumulated 220 cubic meters/second of water to Sonora's Yaqui River in the north.

The 10-year project would cost about $1 billion per year—"monetary resources equivalent to [Mexico's] purchase of food for only one year," Frías said. The transferred water would open up 800,000 hectares of new farmland in the states of Sinaloa and Sonora, made possible by PLHINO's irrigation.

ism, regularize the pattern of crop cycles, and increase the hydrologic cycle, which would increase the chances of rain in the region. In this way, it would improve the ecology and growth of life in general; as well as significantly increase the land under cultivation for producing the basic grains that the nation so urgently needs.

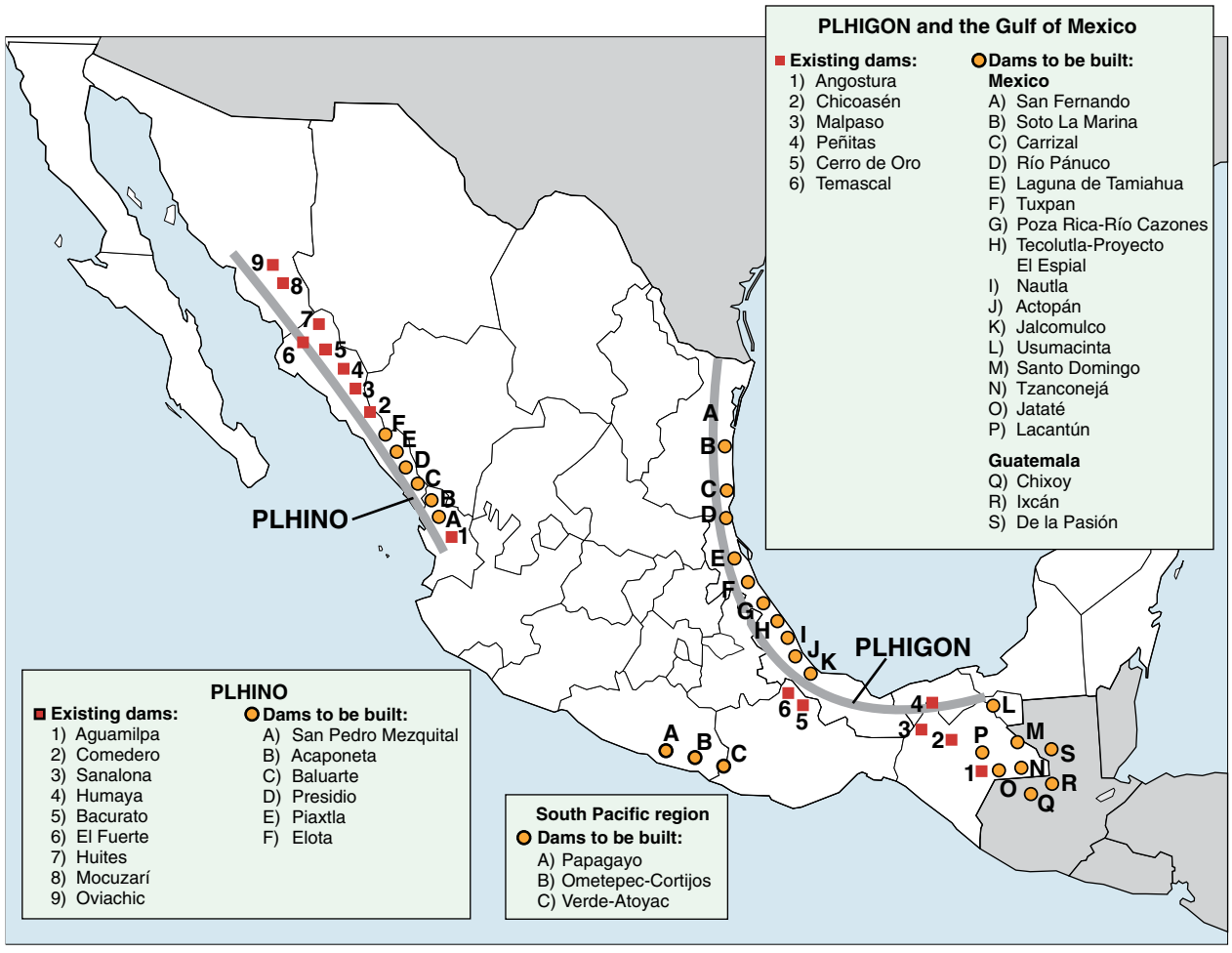
The prevailing criteria of political economy over the last 25 years, however, held to the idea that the strengthening of public finance is achieved with a simple scheme of "balanced-budgeting," and placing the fate of economic growth in the so-called "foreign sector." This caused governments to substantially decrease investment in basic economic infrastructure. It is because of this, that projects as important as the PLHINO were abandoned, and governments went along with a public investment policy of austerity, which disregards the economic necessities of the country.

Today we are faced with a national and international economic reality, which by its very nature demands that we again take up a vigorous policy of public investment directed towards great infrastructure projects. There is no other route for reestablishing the rates of growth that the country has lost throughout all these years, leaving dramatic unemployment and poverty in its wake.

### A Matter of National Security

Under these adverse circumstances, one of the principal vulnerabilities of the national economy is our marked dependency on food imports. International financial instability is causing a hyperinflationary escalation of food prices. This is a situation made even worse by the fact that the United States, the principal grain-exporting nation, decided to use corn for the production of bio-fuels, thus converting it into material for the energy speculation markets.

We have entered a critical phase on the food front, such that worldwide, we face a moment in which grain reserves have fallen significantly, at the same time




Source: *EIR*, January 7, 2000.

**Figure 2**
**THE PLHINO AND THE PLHIGON**

On the Gulf of Mexico, the Northern Gulf Hydraulic Plan, PLHIGON, is designed to control the historic flooding problem in the southeast region, produce significant amounts of hydroelectric power, and move vast quantities of fresh water northward, along the Gulf Coast of Mexico, with complementary projects to pump it up to Mexico's north-central plateau, which is part of the Great American Desert.

The southeast's four large rivers, Grijalva-Usumacinta, Papaloapan, Coatzacoalcos, and Tonalá (which are the first, second, third, and sixth largest in the country, respectively), jointly produce 204 cubic kilometers of runoff, of which only 15 percent will be used in the PLHIGON.

The six major dams planned on the Usumacinta River and its tributaries will create hydroelectric installed capacity of about 9.5 gigawatts, out of a national total of 50 gigawatts from all sources. In addition to producing electricity, the dams will be designed to control the rivers' runoff and prevent future flooding. This will allow the recovery of more than 1.5 million hectares of the vast coastal flood plain in Tabasco and Campeche states for agricultural production, both crops and pastureland.

that the tendency of the North American market is to reduce its massive exports, mainly of grains such as corn, of which we are the chief importer worldwide.

What a dramatic convergence this is for Mexico: scarce and expensive food! We must take heed of reality with a sense of urgency, in order to avoid the problems of shortage and the inherent threat of social instability which this represents.

With all of this in mind, defining a strategy of public investment with a sense of emergency for completing projects such as the PLHINO becomes a matter of state and of national security.

*The author is a longtime leader of the LaRouche movement in Mexico, and currently the coordinator of the Pro-PLHINO Committee, which brings together dozens of groups and associations in the state of Sonora, including peasant groups, trade unions, producers, and others. His article was translated from Spanish by Tarrajna Dorsey of the LaRouche Youth Movement, who visited Mexico to campaign for the PLHINO program.*

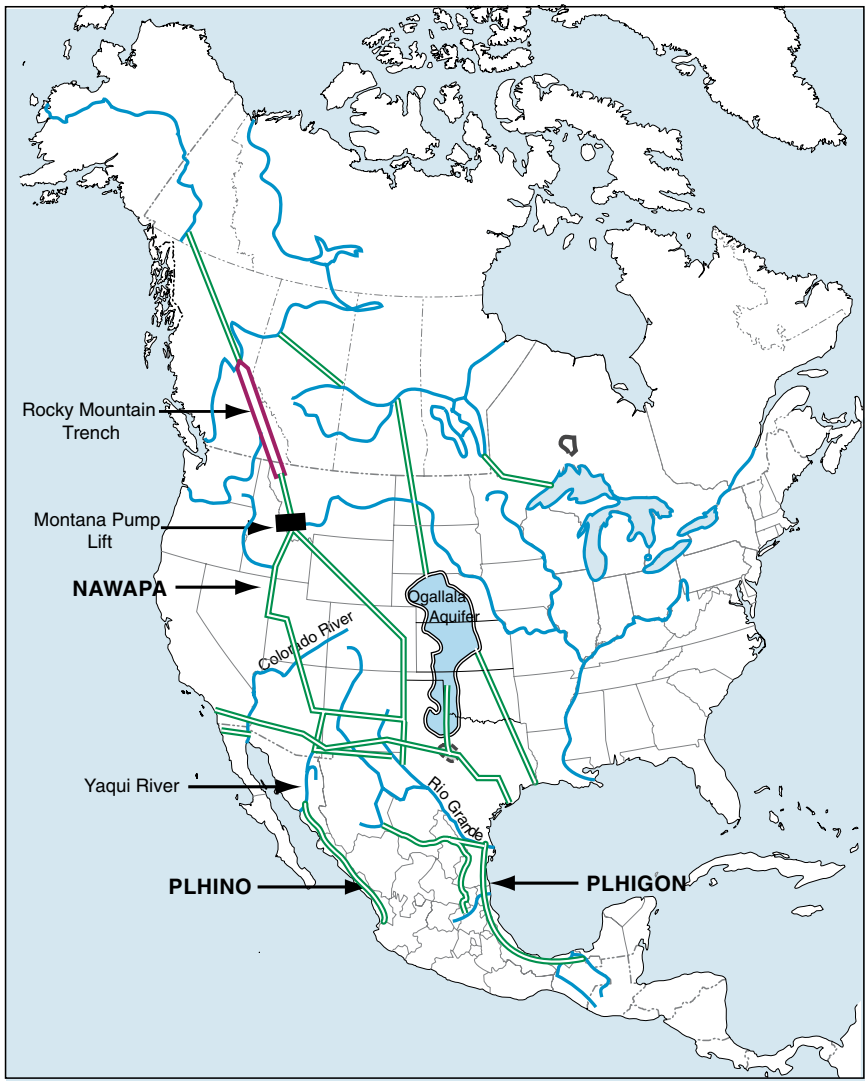
**Figure 3**
**NORTH AMERICA: 'NAWAPA-PLUS'**

The great North American water project, the North American Water and Power Alliance or NAWAPA was designed by the Parsons Engineering firm in the 1960s to harness about 17 percent of unused runoff from Alaska and northern Canada and bring it southward. Most of that 1,000 cubic kilometers of runoff water now flows unused into the Arctic Ocean.

NAWAPA-Plus, as conceived by *EIR*, would extend the original NAWAPA design to link up in Mexico with both the PLHINO and the PLHIGON, creating a single, integrated North American water project.

In the original NAWAPA design by Parsons, the water would be channelled into the Rocky Mountain Trench, a natural reservoir about 800 km in length, which runs from the center of Canada down into the northern United States. It is about 15 km wide and 100 meters deep, on average, and could store some 400 to 500 cubic kilometers of water, at a height of about 900 meters above sea level.

At the northern tip of the Trench, a navigable waterway would be built in Canada, from Vancouver in the West to Lake Superior and the St. Lawrence Seaway in the East—a great waterway that would connect the Pacific with the Atlantic.




Sources: Parsons Company, *North American Water and Power Alliance Conceptual Study,* Dec. 7, 1964; Hal Cooper; Manuel Frías Alcaraz; *EIR.*

### NAWAPA's Eastern Branch

The eastern branch of NAWAPA would run south from this waterway, through the central United States, to help recharge the gigantic Ogallala Aquifer, which today is overexploited. From there the Montana Pump Lift would be built, a pumping station that would lift the water from 900 meters above sea level to some 1,500 meters above sea level, on both sides of the Continental Divide in the Rockies. This would require some 80 gigawatts of power, to be supplied by the numerous hydroelectric dams planned along NAWAPA's entire route, which would produce a total of 180 gigawatts of power.

The Parsons design planned a central branch of NAWAPA to run along the eastern side of the Rockies, cutting across the Great American Desert, through Wyoming, Colorado, New Mexico, and Texas. It would connect with the tributaries of the Rio Grande, which forms the border between the United States and Mexico at that point. In all, according to the Parsons design, it would transfer some 6.8 cubic kilometers of fresh water to the arid Center-North of Mexico.

NAWAPA and the PLHIGON meet at the Rio Grande.

### NAWAPA's Western Branch

The western branch of NAWAPA would also cut through the Great American Desert, crossing Nevada, Utah, Arizona, and New Mexico, where it would also feed into the Rio Grande and reconnect with NAWAPA's central branch. From Arizona, a canal would be built to carry water across the border to Mexico. This is where NAWAPA and PLHINO meet.

The western stretch of NAWAPA would also supply water to the north and center of California, and to the Colorado River, which, in turn, would carry more than 5 cubic kilometers of water a year to northern Baja California.