

# Water for México's agriculture

*A political decision has been made to move ahead on the northwest canal and irrigation project, report Patricio Estevez and Eduardo Quiroga.*

*Executive Intelligence Review* presents here Part II of an ongoing series on the development potential of Sonora, one of Mexico's richest and most advanced states. Coverage of the preparations for Sonora 81, a state-sponsored industrial/agricultural fair set for this October led off the series in last week's issue of *EIR* (May 12, 1981).

One of the principal themes of that fair is the science and technology of water management and irrigation. The detailed program for upgrading the PLHINO, a proposed central hydraulic plan for the entire northwest region of Mexico, presented below, was prepared by two engineers of the Mexican Association for Fusion Energy (AMEF), and exemplifies the "think big" planning that is now dominating in Mexico.

One month ago, the governors of the Mexican states of Sonora and Sinaloa, in the northwest of the country, agreed to immediately implement one of the most ambitious water resource projects in Mexico's history. Called the Northwest Irrigation Plan or PLHINO for its Spanish acronym, the project will bring substantial quantities of water to the arid northwest, permitting the conversion of the entire region into Mexico's breadbasket. Already, Sonoran agriculture leads the country with its yields in the areas where modern irrigation and other high-technology inputs have been introduced; but with the PLHINO in place, a vast expansion of such modern agriculture will now occur.

This is good news for Mexico, whose backward subsistence-agriculture sector is the most severe drain on its economy, and whose government is urgently trying to achieve self-sufficiency in food production. But it is also good news for American agriculture and industry, which has the modern technological inputs the PLHINO and related projects will call for.

The major political break to achieve the PLHINO's implementation came last April 6. "You and I, before our terms are up, will link the water systems of Sonora and Sinaloa to make the PLHINO a reality," Sinaloa Governor Antonio Toledo told his Sonoran counterpart, Dr. Samuel Ocaña, at a summit meeting between the two.

But within days, political opponents to the plan,

including environmentalists ensconced in Mexico's Ministry of Agriculture and Water Resources (SARH), tried to put a damper on the enthusiasm with which the news was received by the state's agricultural sector. Top officials of the SARH launched the counterattack against the PLHINO by putting out a deliberately narrowed version of the program in an attempt to sabotage its implementation. Leonardo Aguilar, the technical secretary to the SARH's representative in Sonora, told a local paper, *Información*, that "if it is possible for the PLHINO to reach Sonora, it would only reach the Fuerte-Mayo zone" in the southern part of the state, arguing that the surplus water in Sinaloa was insufficient for the scope of the plan as announced. His boss, Roberto Osoyo from the SARH, repeated Aguilar's limited formulation and prognosis for the plan.

The governor of Sonora, Ocaña García, responded immediately, giving a strong interview in the state's largest circulation daily, *El Imparcial*. President José López Portillo has given instructions, Ocaña García pointed out, that the planned PLHINO water works be "carried out vigorously," extending from Nayarit on north.

The "pessimistic" projections of the SARH officials are not based on technical, but *political* objections to the PLHINO. Unfortunately not an isolated or accidental case, the SARH officials' opposition represents the viewpoint of a Malthusian political current in the country which extends into the Mexican government bureaucracy. Usually operating under a "radical" cover, like the so-called Committee for the Promotion of Rural Development led by radical Maoist Gustavo Estéva, these Malthusians oppose outright the modernization of Mexico's agriculture because it would expand the country's food production—and then its population.

## What is the PLHINO?

Even many Mexicans are not aware of the full scope of the PLHINO, nor what its effects on food production will be, thinking of it as a mere regional public works project.

The scarcity of water is the most severe limit on

Mexican food production today. The efficient utilization of water resources must, therefore, be treated as a matter of highest national importance. Through the proper combination of the capture of major river runoff, the application of modern technologies for irrigation, such as closed piping, aspersion, or drop-by-drop irrigation, and the adequate purification and recycling of water, can be implemented in the National Irrigation Plan so that the country's use of water resources is maximized. The PLHINO, by massively expanding water utilization in the agriculturally rich lands of the northwest, must play a central part in such an overall irrigation plan.

The PLHINO is a hydraulic system which will collect and distribute the waters of more than 20 rivers and streams in the states of Sinaloa and Sonora. Its construction will provide thousands of jobs in steel, cement, and construction. The effect on agricultural production will be stunning.

For example, in Sinaloa's El Fuerte Valley, a practically unused underground aquifer could provide ap-

proximately 200 million cubic meters of water a year, and if added to the water to be stored in the Huites Dam, could open up a total of 180,000 new hectares for cultivation in the area between the upper El Fuerte Valley and the Mayo Valley in Sonora.

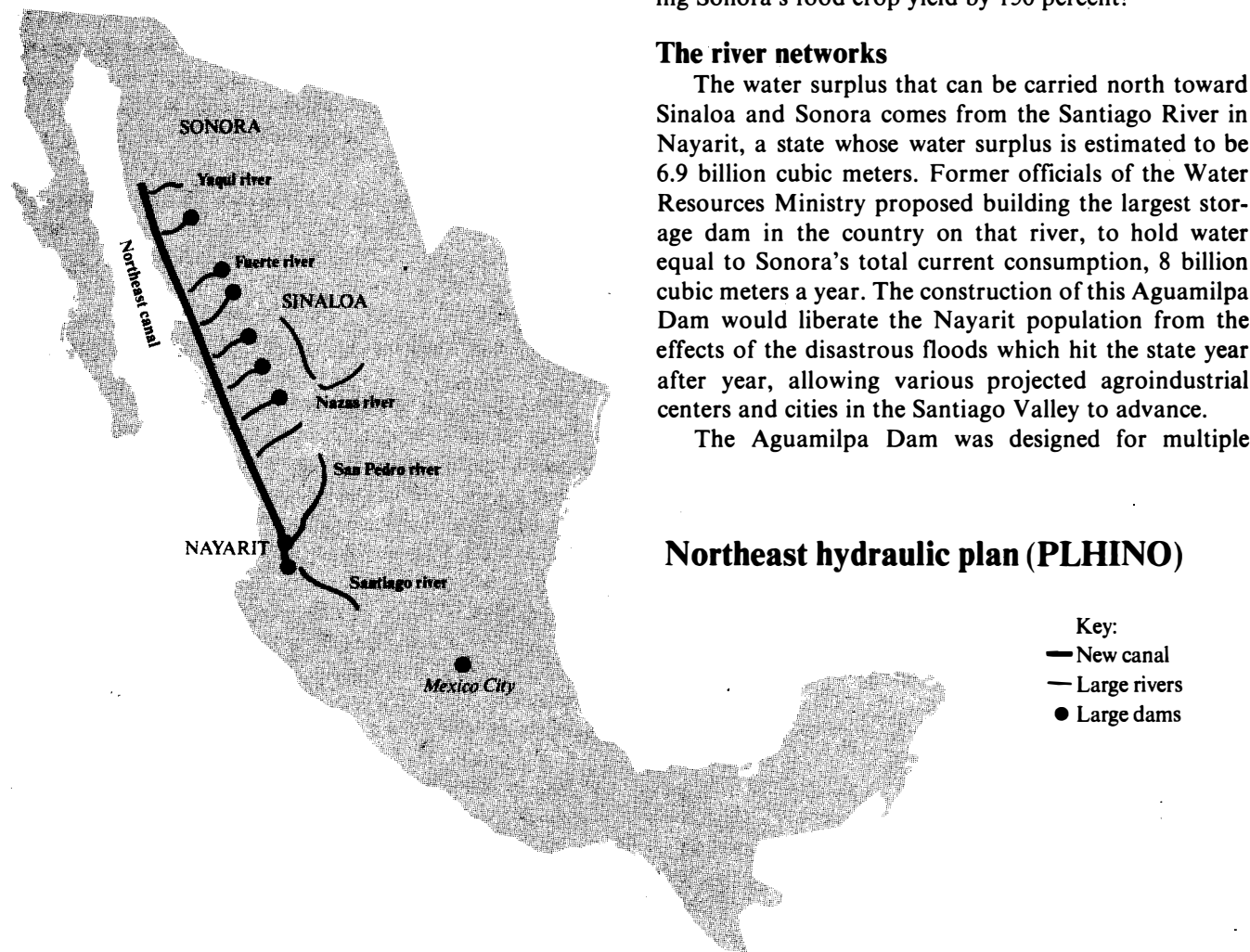
Efficiency of water use in the northwest, at the same time, is still very low, even though it is the most productive agricultural area of the country. A study prepared by the Water Resources Ministry concluded that 2.3 billion cubic meters of water could be saved in the presently irrigated areas of Sonora and Sinaloa just by cutting seepage in canals, and wastage in the irrigation process—a figure equal to *all* the water currently stored in the Alvaro Obregón Dam which irrigates the Yaqui Valley, one of the biggest water districts in the country!

If the water surpluses from Nayarit, southern Sinaloa, the new Huites Dam, the underground aquifer of El Fuerte Valley, and the gains from increased efficiency in Sinaloa and Sonora are added up, there would be enough water to irrigate an area one-and-one-half times the presently irrigated fields of Sonora, thereby increasing Sonora's food crop yield by 150 percent!

### The river networks

The water surplus that can be carried north toward Sinaloa and Sonora comes from the Santiago River in Nayarit, a state whose water surplus is estimated to be 6.9 billion cubic meters. Former officials of the Water Resources Ministry proposed building the largest storage dam in the country on that river, to hold water equal to Sonora's total current consumption, 8 billion cubic meters a year. The construction of this Aguamilpa Dam would liberate the Nayarit population from the effects of the disastrous floods which hit the state year after year, allowing various projected agroindustrial centers and cities in the Santiago Valley to advance.

The Aguamilpa Dam was designed for multiple



**Northeast hydraulic plan (PLHINO)**

- Key:
- New canal
  - Large rivers
  - Large dams

uses, ranging from flood control to electricity generation, urban-industrial water supply, irrigation, and aquaculture, as well as the transfer of water to the northern part of the Pacific Coast. But since Mexico has an abundance of energy and a shortage of food, priority should clearly be given to the flood control and irrigation functions of the dam.

This dam will be completed in 1985, provided that its construction, which has been stalled, is resumed immediately: Over \$5 million has already gone into studies and site preparation.

Northward into southern Sinaloa, dams on the Presidio, Baluarte, Elota and Piaxtla Rivers are scheduled to come on line in 1983. These will be the most important dams in Sinaloa when completed, scheduled to dispatch a billion cubic meters of water per year to the arid plains of central and northern Sinaloa. Combined with the 6.9 billion cubic meters in surplus water from Nayarit, a total surplus of 7.8 billion cubic meters would be available at the level of the city of Culiacán, Sinaloa.

Dams nearing completion on the San Lorenzo and Sinaloa River will then finish the northward linking of irrigation systems—tying together northern Sinaloa to the Sonora border.

Since the PLHINO requires that the water needs be met first in the states through which the irrigation system passes, not all the surplus water will reach Sonora. But even including a 20 percent evaporation loss from the 8 billion cubic meters of surplus in the system, some 6.4 billion cubic meters will be available to irrigate new lands in Sonora and Sinaloa.

### The Pro-PLHINO Front

Despite the vocal enemies of the PLHINO, the plan has the support of most people in the region. To ensure the governors stick to their promise, a "Pro-PLHINO Front" has been organized among area peasants and farmers to build the support required to see the project through.

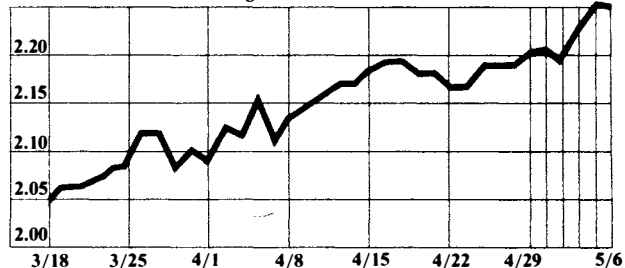
The founding meeting of the Front was attended by representatives of 15 ejidos (cooperative farms) from the Mayo and Yaqui irrigation districts and from the National Peasants Union. The meeting passed a resolution to organize the authorities and population of Nayarit to support the Pact of Palapa agreed on by the Sonora and Sinaloa governors.

A second resolution called upon the governor of Sonora to found an Institute for the Study of New Water Resources, at which teams of specialists in hydrodynamics, hydrology, irrigation, and related fields could conduct the most advanced studies in hydrodynamics, including finding more efficient ways to desalinate sea water, so that Mexico's huge deserts can one day become new food sources.

## Currency Rates

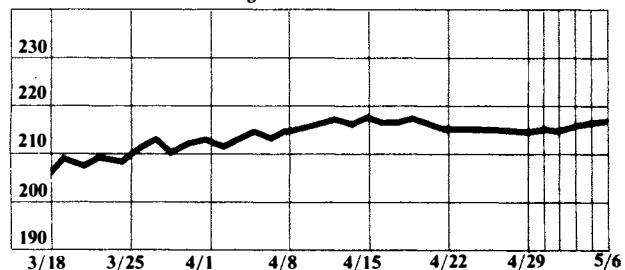
### The dollar in deutschemarks

New York late afternoon fixing



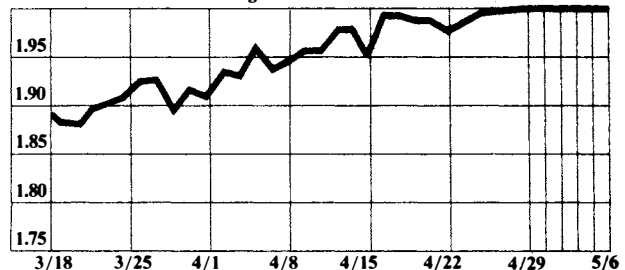
### The dollar in yen

New York late afternoon fixing



### The dollar in Swiss francs

New York late afternoon fixing



### The British pound in dollars

New York late afternoon fixing

