

EIROperation Juárez

How Ibero-America can raise farm productivity

Part 26

Ibero-American integration

To provide a healthy diet to the 700 million Ibero-Americans who will be living in the year 2015, agriculture must be transformed from "subsistence farming" to a modern, efficient industry. Concentrating energy, capital, and modern technology into farming will double its yields, and simultaneously open up new lands for cultivation.

This installment begins Chapter 8 of the Schiller Institute book, *Ibero-American Integration: 100 Million New*

Jobs by the Year 2000! The book was published in Spanish in September 1986 and is appearing in English exclusively in *EIR*. It was commissioned from an international team of experts by the Schiller Institute's Ibero-American Trade Union Commission, to elaborate the "nuts and bolts" of the proposal by Lyndon LaRouche in 1982 for an "Operation Juárez" that will transform the huge foreign debt problem into the springboard for a regional economic boom.

Numbering of the tables and figures follows that of the book.



[The previous installment reviewed the food strategy of an Ibero-American Common Market, focusing on the need to raise consumption levels of calories and particularly, animal protein.]

Subsistence farming versus productivity

All of this presumes putting an end, as fast as possible, to subsistence farming, which takes up a considerable portion of the farmland of the region; absorbs a disproportionate amount of the agricultural workforce; and constitutes a monstrous waste of energy. Millions of peasant families are farming tiny plots in the most rudimentary way, with the mere aim of subsisting. The abysmal technological level and the almost total absence of inputs and machinery, have caused the productivity of human labor in subsistence farming to be as much as 100 times below that of modern farming zones: The per hectare consumption of energy is extremely low, but it averages four times higher per unit of product, given the enormous inefficiency of production. And in many cases, the products are of meager nutritional value.

Nevertheless, there is something even more absurd than subsistence farming: defending it. Countless ignoramuses posing as economists, with the sponsorship of the World Bank and similar institutions, contend—in so many words—that subsistence farming is, when all is said and done, more efficient because it "consumes less energy." It is enough to take any crop, such as maize, and compare its mechanized cultivation in irrigated zones with subsistence farming of the same product in unirrigated zones, to see that the argument of these "economists" is economically absurd and, in many cases, also evil in intent (see **Figure 8-7**).

High-technology maize farming, with the best possible levels of mechanization and fertilization, consumes two-and-a-half times more energy per hectare than subsistence farming. The defenders of a subsistence economy are not worried, of course, that two-thirds of the energy invested in such farming comes from the physical strength of the peasant himself, applied over long, exhausting workdays, which reduce his life to a beast of burden and shorten it. From the standpoint of production, the fact that two-thirds of the energy comes from the peasant's own body imposes an insurmountable limit to the size of the land that he can farm.

Now, the average yield of high-technology maize farming is 8 tons per hectare, while that of subsistence farming does not reach 1 ton—not even 10% of high-technology farming. Hence, “very cheap” subsistence farming wastes 4 times more energy per ton of maize and requires ten times more space. Even worse: Given that the relative quantity of human labor invested in subsistence farming is so huge, it simply cannot compare with high-technology agriculture from the standpoint of its yield per unit of work: Subsistence farming produces 100 times less per invested man hour!

There are those, as well, who use the same reasoning to contend that it is uneconomical to produce meat, milk, eggs, and other foods from animal sources, when it is possible for human beings to directly consume the grain that is eaten by livestock or to produce grains appropriate for direct human consumption instead of feedgrain for livestock. To defend this argument they explain that it requires an average of 7 tons of grain to produce 1 ton of meat—a supposed “waste” of 6 tons of grain. But the fact is, that neither in quantity of protein contained in respect to total weight, nor in the quality of these proteins, can foods of vegetable origin replace foods

of animal origin.

For example, one kilogram of maize contains 60 grams of protein, while a kilogram of beef contains 240 grams; or, a kilogram of potatoes has 20 grams of protein, while a kilogram of fresh cheese has 200. Moreover, there is a group of five amino acids which are indispensable to the human body but which it cannot synthesize. These amino acids are not found, or are extremely rare, in the vast majority of foods of vegetable origin, while they abound in foods of animal origin.

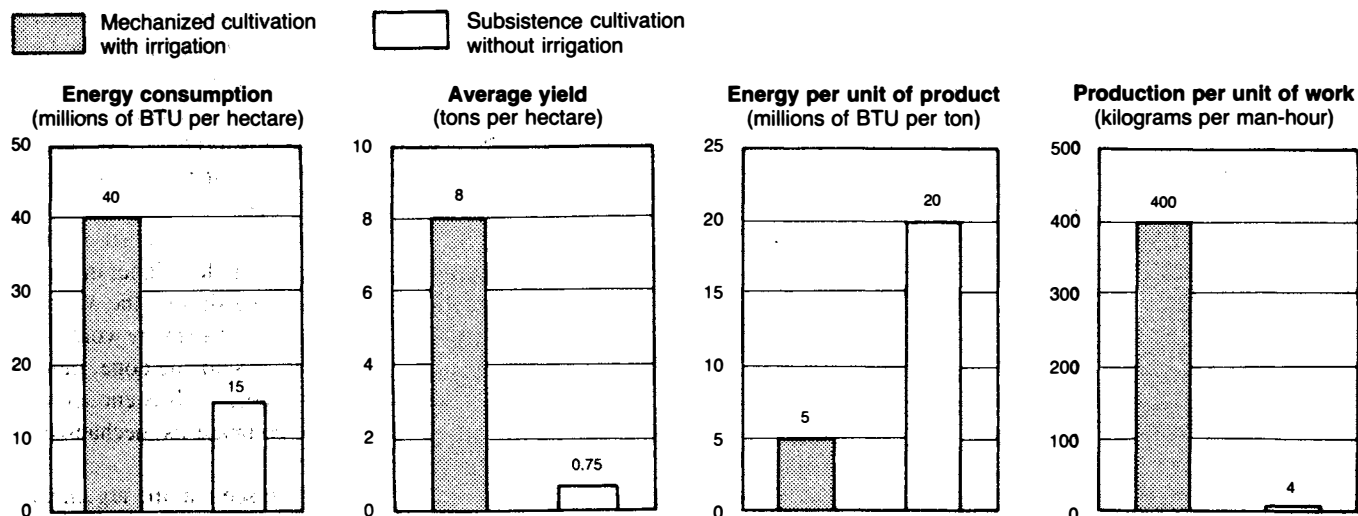
This means that the only solution for Ibero-America is to rapidly upgrade technology in the countryside.

The way to raise productivity is to determine what mix of technological resources must be applied in each zone, on what scale, and at what rate, and to guarantee them by means of the participation of all the nations capable of supplying them. Such technological resources range from irrigation to agricultural machinery, better seeds, fertilizers, pesticides, and other farm chemicals. The bringing in of these technical resources will require a broad support network that includes agronomic research centers, experimental plots, soil laboratories, equipment depots, and, in general, an agricultural extension service at least equivalent to that which gave a permanent impulse to U.S. agriculture.

To set up a magnificent farm extension service presupposes, among other things, a big research and teaching effort. A real army of experts has to be formed which would transmit continuously to the agricultural producers the criteria and scientific and technical knowledge which would turn them into experts in agronomy and skilled workers. In the course of the next 30 years, Ibero-American peasants have to free themselves definitively from their present condition, i.e.,

FIGURE 8-7

Energy productivity and efficiency in maize cultivation



Source: EIR and authors' estimates

they have to stop being peasants, to achieve the productivity, the knowledge, and the household prosperity which are common among the farmers of the United States.

In the course of the next 30 years, likewise, a series of technical advances in farming practice has to be produced. Ibero-America must directly participate in generating this, especially in fields such as tropical agriculture, the creation of new species or varieties through biotechnical methods, etc. Techniques such as hydroponics, which are applied today with good results in vegetable growing, will have to be perfected and, in combination with biotechnology, will make it possible to grow high-protein-content plants, such as those which will be needed to colonize Mars, without soil.

The raising of farm productivity will not be complete if at the same time infrastructure is not created which can guarantee the full exploitation of the farm products. Aside from a good transportation network, an aspect we already touched upon, we must guarantee that the product is not lost for lack of means of preservation. Preservation techniques such as food irradiation, which we shall describe in more detail later in this book, will have to be rapidly spread.

The zones of greatest potential

As we have indicated, Ibero-America must increase its farmland by about 55 million hectares over the next 30 years. This increase includes both the areas needed for intensive production of grains and other basic foods, as well as those to be dedicated to growing feed for livestock, with the specific purpose of freeing up the broad tracts of fertile land which are currently used for this purpose. This last aspect will be of great importance, since in order to exploit the vast agricultural potential of the subcontinent it will be necessary to move the present livestock herds to less fertile regions, in order to devote the totality of cultivatable fertile land to intensive production of grain and other basic foods.

The regions that offer the greatest potential for incorporating new farmlands are the following (see **Map 8-1**):

- The La Plata basin;
- The plains of Colombia and Venezuela;
- The Brazilian northeast;
- The edge of the Peruvian jungle;
- The two coastal regions of northern Mexico.

These five zones possess, taken together, a potential farming surface close to what will need to be added over the next three decades, but its incorporation into food growing or livestock raising will depend, in great measure, on the great water infrastructure projects which were detailed previously in this book. Part of this area already has the soil conditions and water adequate for it to be immediately incorporated, principally in the La Plata basin, but the exploitation of the total potential land area implies, to a greater or lesser degree, building a series of dams and drainage and irrigation projects, to control the big floods in the season of greatest rainfall and to bring the surplus water to the fertile lands where this resource is lacking.

The La Plata basin: This is doubtless the subcontinent's most promising farming region, with an area of about 150 million hectares of highly fertile land, which embraces both the famous Argentina Pampa, and the Gran Chaco Americano which extends across Argentina, Paraguay, and Bolivia, as well as the area comprised by Uruguay and southern Brazil. This region is quite underutilized, since barely some 30 million hectares, principally in the Pampa, are farmed, and a large proportion of this land area is presently dedicated to livestock raising.

The full exploitation of the La Plata basin must begin by putting the range-fed herds into feedlots and moving the pastures to less fertile zones, with the objective of dedicating the more fertile terrain, which possesses the necessary water, to growing grain and other food products. The growing area can be considerably increased both in the depressed areas of the center and northeast of the basin, through damming and drainage projects to control surplus water, as well as in the semi-arid areas all along the extensive western strip which runs from the center of Argentina to the south of Bolivia, which need large-scale transfers of water coming from the huge watershed of the rivers that make up the basin.

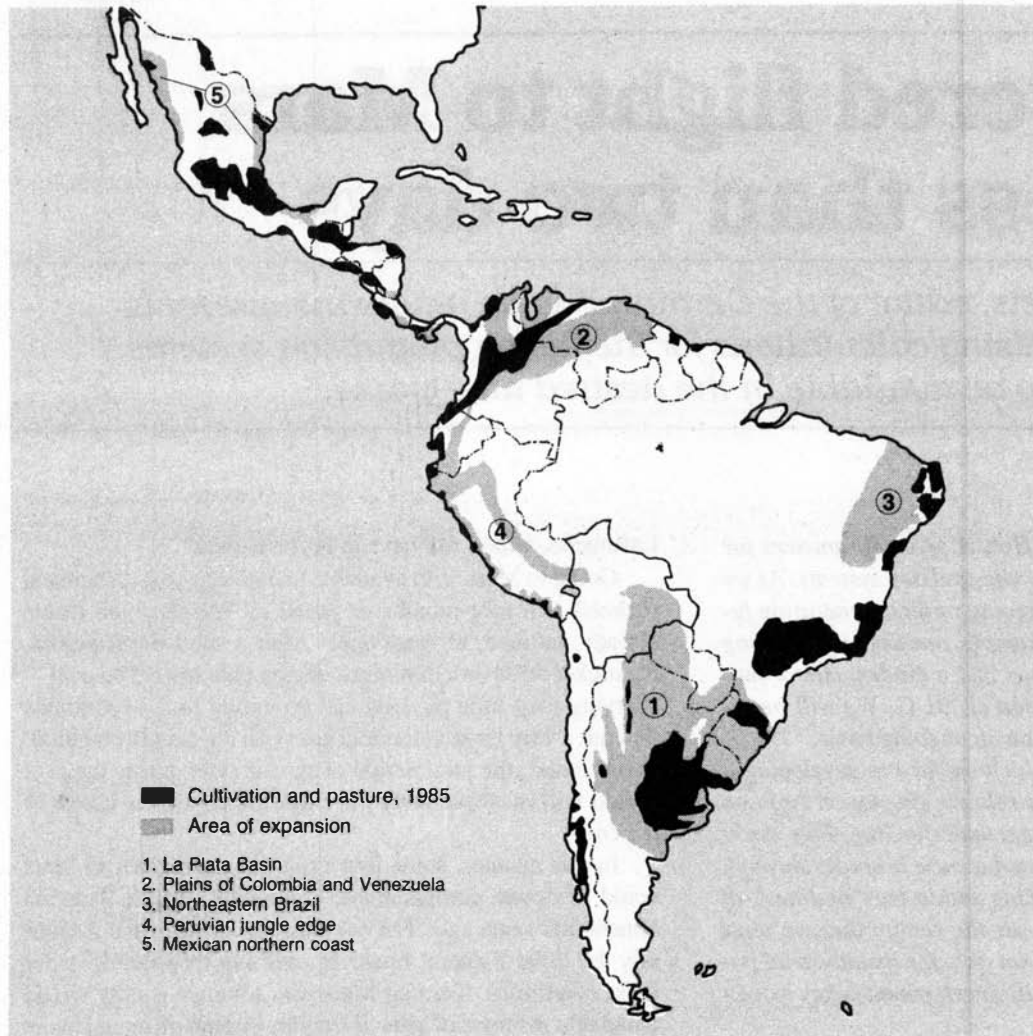
These actions will permit incorporation of about 30 million more hectares for growing crops, thus doubling the farming land of the region. Put to work efficiently with inputs, machinery, and modern technology, the La Plata basin will be able to abundantly feed the present and future populations of the countries that make it up, which comprise about 45% of the subcontinent's inhabitants.

The Colombian and Venezuelan plains: These two South American countries have in the south of their territory an enormous stretch of level and fertile land, encompassing some 20 million hectares, most of them now unused. Of this total, it is estimated that about half can be farmed, i.e., 10 million hectares, which as in the La Plata basin, will be used both for intensive grain cultivation and for large-scale livestock development.

The fundamental problem to solve in this region is the enormous volume of rain which falls in some months of the year and floods a great deal of the area, in contrast to the other periods of prolonged drought. The exploitation of the vast farming potential of the plains depends on building a series of dams, which will contain the abundant rainfall, in order to stop floods and provide water for irrigation in the drought periods.

The Brazilian northeast: This region represents, paradoxically, one of the major agricultural potentials of Brazil, and at the same time, one of the zones of greatest hunger and malnutrition in the subcontinent. It has a great abundance of water, but this is concentrated in very short periods, and as in the case of the plains, for most of the year it suffers a ferocious drought problem. With the construction of dams and exploitation of underground aquifers, about 3 million hectares can be irrigated, and when farmed adequately not only will they alleviate hunger in the region, but will contrib-

Agricultural areas of Ibero-America 1985-2015



ute substantially to feeding the Brazilian population as a whole.

The edge of the Peruvian jungle: Between the foothills of the Andes and the Amazon jungle, Peru has a broad strip of territory with fertile soil which has the appropriate natural conditions for growing a great variety of farm products which need lots of moisture, as well as for large-scale livestock husbandry. But for the most part this region is controlled today by the drug-trafficking mafias as one of their principal enclaves, where they have taken advantage of the relatively isolated situation to produce massive quantities of illegal drugs.

The incorporation of this region into high technology farming and livestock raising, with an area of about 3 million potentially exploitable hectares, is not only a priority task from the standpoint of food production for the Peruvian and Ibero-American population, but it is also a fundamental step

in the war on drugs. This, however, will be feasible only with the economic integration of the borders of the jungle into the development of Peru and the other adjacent countries, through the infrastructure which has been proposed to link this region to the rest of the subcontinent.

The coastal regions of northern Mexico: In the tradition of the great waterworks which have characterized its agricultural development, Mexico has to embark on building two great water infrastructure projects with the aim of transferring great volumes of water to the regions that have broad stretches of fertile area, the coastal regions of the northeast and northwest of the country, where about 2 million hectares can become irrigated farmland by taking advantage of the huge water flows of the major rivers flowing into the sea to the south of these regions. A great deal of the food future of Mexico is rooted in the exploitation of the potentials of these coastal regions.