APAC Agricultural Policy Analysis Center
The University of Tennessee

PolicyPennings by Dr. Daryll E. Ray

Japan's 21-year aid program helped put Brazil on the soybean map

For the 2005/2005 crop year, Brazil is projected to produce 66 million tonnes soybeans compared to the 0.523 million tonnes it grew 40 years earlier. Soybean production over that period increased 126 fold. In 1964, Brazil grew 1.7% of the world's soybeans and was a minor player in an export market that was dominated by the U.S. According to the USDA projections for the 2004/2005 crop year, Brazil will be the world's largest exporter of soybean complex (soybeans, soybean meal, and soybean oil) with a 36% share. Argentina follows with a 27% share and the U.S. is in third place with a 26% share. What are the circumstances that enabled Brazil to overcome the U.S. dominance in the export market of soybeans in a matter of 40 years?

The first thing to keep in mind is the fact that the soybean complex export market has exploded over that 40 year period increasing from 10.15 million tonnes to 121.97 million tonnes, a 12 fold growth. The use of soybeans and soybean products in animal feed has driven much of this increase, particularly as some international markets have increased their annual meat consumption.

The second factor needed to understand the change is the fact that the U.S. cropland base is relatively fixed. The growth in U.S. soybean production has come at the expense of other crops. Brazil, by way of contrast, has a large area of what was once thought to be wasteland that is suitable for agricultural production. The cerrados, a savannah like land in the center-west of Brazil, contains more than 400 million acres that can be opened up for crop production.

Thirdly, Brazil decided to use soybean production as a means of growing its industrial base. By emphasizing the development of crush facilities at the same time it ramped up soybean production, Brazil could build its experience in industrial processes, provide a market for a local agricultural product, and improve the diet of its population with increased availability of a locally produced oil, and eliminate the need to spend foreign exchange on importing vegetable oil. Much of the early growth in soybean production was in the temperate areas in the south of Brazil where, like in the U.S., soybeans grew at the expense of other crops.

While Brazil has a large land-base in the center-west, the problem with soybean production was the fact that this area is in the low latitudes where the daily and seasonal light pattern is not well matched to soybeans temperate latitude origins. The national Brazilian research agency, EMBRAPA, embarked on a program to develop soybean varieties that were suited to the more equal days and nights of near equatorial areas. This research was a key fourth factor in Brazil's move to become a world class soybean producer.

Fifth was the soybean embargo of 1973 and the effect it had on U.S. import customers, particularly Japan. As an island nation with limited ability to expand agricultural production, Japan has to depend on imports to feed its populace. The embargo shook Japan's confidence in the U.S.'s reliability as a supplier of soybeans and began to seek out alternate sources so as to not be dependent upon a single supplier. In 1980, the governments of Japan and Brazil put in place the Japanese-Brazilian Cooperation Program for the Development of the Cerrados. This program lasted for 21 years, during which time the Japanese financed the expansion of farming operations into the cerrados while Brazil was expected to finance improvements in roads and other infrastructure. Japan also helped finance research in the development of appropriate soybean varieties and pest management systems.

The financial muscle that Japan brought to the growth of Brazilian soybean production was not the only factor responsible for the growth of the center-west. However, without it, Brazil's soybean expansion undoubtedly would have proceeded at a slower pace than it did. It is always risky to speculate about what might have happened under an alternate scenario. However one cannot help but wonder what would have happened if the U.S. had not intentionally phased out — during the years just prior to 1973 — the once prominent Ever-Normal Granary concept of using CCC stocks to buffer against production shortfalls of major crops. Without the need for the embargo, would Japan have made the same investments? Would Brazil have been able to move as aggressively into the cerrados as it has? The next time we think about government stocks or lack thereof it might be worth considering such questions.

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