LETTERS
From You...

Brazil's trade exports of soybeans increase

From: Masahiko Gemma
University of Minnesota
Re: Taylor's "Third World Ag Development Effects on U.S. Ag Export: It Depends..."

In the "Disequilibria" section of *CHOICES*, Third Quarter 1988, Donald C. Taylor introduces the case of Brazilian soybeans to examine the effects of U.S. foreign assistance in agriculture. Taylor does not elaborate the process of soybean technology transfer from the U.S. and other countries to Brazil in his article. It is not clear from his account how and to what extent the U.S. technical assistance helped the development of the Brazilian soybean industry. Since the understanding of this technology transfer process seems to be critical for any conclusions concerning effects of the technical assistance on U.S. soybean producers, the transfer of high yielding varieties (HYVs) and the related development in soybean research in Brazil will be illustrated here.

Soybeans are cultivated in a more severe environment in Brazil than the United States. The semi-tropical environment with a less dependable weather pattern gives Brazil a disadvantage in soybean production relative to the United States. The development of HYVs adapted to the semi-tropical environment has been a major focus of soybean research in Brazil. Research on pest and pathogen control and soil conservation has been partially effective in offsetting these environmental disadvantages in Brazil.

There have been three stages in soybean research and development in Brazil. The first was direct transfer of varieties; the second was the transfer of breeding material; and the third, and more mature stage, is a program of germplasm enhancement.

In the first stage, during the middle 1960s, some soybean varieties that originated in the Southern U.S. were introduced to Brazil. These U.S. varieties had many features that were adaptable to Brazil, such as shorter day conditions, good seed-holding qualities, and resistance to the major foilar diseases that are typical in warm and humid conditions. In this process, the National Soybean Commission, which consisted of members from both the U.S. and Brazil, played a very important role. "Improved Pelican" was the first major variety to be planted in the Rio Grande du Sul, the initial site for Brazilian soybean production. Other U.S. varieties such as "Hill," "Hood," and "Lee" were introduced but were not productive under the short-day conditions.

In the second stage, many varieties such as "Delta," "Campos Gerais," "Vicosa" "UFV-1," and "Mineira" were developed in Brazil from the U.S. varieties produced at the Southern Regional Soybean Program at Stoneville, Mississippi. The soybean varieties grown in Brazil are genetically related to the varieties found in the Southern United States.

In the third stage, the genetic material developed in Brazil as well as genetic materials from all major soybean growing areas in the world have been utilized. For instance, one variety from the Philippines has been combined with the U.S. originated-varieties developed in Brazil to improve the capacity for short-day conditions. The soybean yields have grown continually over time. The average soybean yields were 1,060 kg/ha for 1960/1968, 1,394 kg/ha for 1968/1974, 1,541 kg/ha for 1975/1980, and 1,740 kg/ha for 1980/83. Various research institutes affiliated with the Ministry of Agriculture and local universities, and the Brazilian Agricultural Research Corporation (EMBRAPA), which was created in 1972, have been driving forces of this yield increase. The institutional development in Brazil has been intimately connected with the technology transfer.

Clearly the transfer of U.S. varieties has stimulated the development of the soybean industry in Brazil. However, the Brazilian soybean industry could not have reached the levels of productivity achieved during the 1970s in the absence of a strong research effort in Brazil. Equally important is that it is clear in retrospect that once soybean varieties suitable to the U.S. South had been developed the technology would have been transferred to Brazil with or without formal assistance from the United States. It seems unlikely that the transfer of breeding methodology and materials could have been restricted even if efforts had been made to prevent the transfer of U.S. soybean technology to Brazil. Thus it seems evident that Brazil would have acquired or developed varieties that were suited to the semi-tropical environment in Brazil once soybean varieties that were suitable for Southern U.S. had been developed.

Favorable economic conditions during the 1970s combined with the Brazilian Government's continuous efforts to improve its agricultural research system, over and above any advantage from the U.S.-originated HYVs, can be considered as the major factors for the advancement of the Brazilian position in the world soybean related markets. How important the contribution of the U.S. soybean assistance to the development of the Brazilian soybean industry remains unclear. The direct conclusion that can be drawn is that in the absence of U.S. assistance, the Brazilian soybean industry would have developed somewhat more slowly.

From: George R. McDowell
Professor, Virginia Polytechnic Institute and State University on assignment in Lusaka, Zambia
Re: Response to Ken Farrell's letter in Third Quarter 1988 *CHOICES*

Ken Farrell agreed with the major thrust of my article in the Second Quarter 1988 issue of *CHOICES* but took issue with several points. After describing the article as "provocative," he classified it in the 'Land-Grant bashing' genre. I'm not sure whether that means he didn't like it or whether he did like it but in his current position, it struck a little too close to home.

Specifically, Farrell questioned (1) whether the institutional failure within the Land-Grant system is of the order I

asserted; (2) whether the agricultural interest groups of the nation will be prepared to encourage the Land-Grants to address issues that are not only for farming interests—a condition I argued was necessary if the system is to be able to continue to serve agriculture; and (3) whether the system, which I asserted has been captured by the professors, has as little capability to bring about change from within as I implied.

Finally, Farrell clearly missed or misunderstood a major piece of the analysis of the article when he asserts that "disastrous effects...would result from political control of the research agenda."

In responding to Farrell's letter, it is perhaps most fruitful to deal with the misunderstood issue first since several of the others fall out from that part of the analysis. The article is fundamentally an institutional description of the political economy of the American Land-Grant University and of changes now taking place in it. The test of validity is the degree to which the individual reader finds the insights useful in understanding the subject. A central part of the analysis is that the fundamental character of the Land-Grant system and a major source of its strength and uniqueness in the world is because it is, and always has been, a system to facilitate political control of the scholarly agenda. To understand it as anything less is to denigrate both the political process in our democracy and the fundamental responsibility associated with academic freedom.

Contrary to Farrell's "prediction" about disastrous effects from the political control of the scholarly agenda, I argued that the agenda has been, until quite recently, substantially controlled politically and that the disaster is likely to result from the loss of that control—from the capturing of the agenda by the scientists, the professors.

Now to the specifics. Clearly within the Land-Grant Colleges of Agriculture there is some variation in the degree to which my characterizations of institutional change and the research of Busch and Lacy cited by me, applies to any specific institution, department, or faculty member. The institutional descriptive attempt is simply that. I am delighted that Dr. Farrell's experience is at odds with my own observations. The article was written by an Associate Professor cum Extension Economist and not by a Dean or Vice President. Where you stand does depend on where you sit. However, as an institutional economist, I take some exception to Farrell's argument that performance of the farm sector as measured by total factor productivity is evidence that counters the validity of my descriptive analysis of the system and the changes taking place in it. If I am correct in my analysis, future factor productivity in the farming sector, regardless of its magnitude and direction, will have less and less to do with what happens at Land-Grant Universities unless there is some institutional renewal. I called that "renegotiating the social contract."

I hope that Farrell is WRONG in his prediction that it is highly unlikely that leadership of the traditional agricultural groups will insist that colleges of agriculture address issues important to nonfarming groups. I believe, and argued, it is a necessary condition if there is to be meaningful institutional renewal within the Land-Grant Universities. The recognition of the importance of that argument and the need to form the coalitions is the most fundamental political task facing Deans of Colleges of Agriculture and Vice Presidents for Agriculture and Natural Resources within the Land-Grant system. Being seen as a friend of agricultural interests in the state is necessary but no longer sufficient. They must now help agricultural interests see the overlap of their interests with the interests of those who do not farm.

Let me illustrate. One of the most successful contemporary applications of scientific knowledge to practical problems is in the Integrated Pest Management programs around the U.S. (see Antle's article in the Third Quarter 1988 issue of CHOICES). The resources to undertake that IPM research was in all likelihood NOT produced by agricultural groups but rather by environmental interests at the national level. The results are of clear and direct interest to both environmentalists and farmers. However, I know of no explicit Land-Grant College of Agriculture effort to use those scientific "deliverables" to help build an agricultural/environmental coalition at the state level on behalf of that specific type of research and problem. Indeed many or most state environmental groups don't even know the program exists. Those types of opportunities cannot be missed by Land-Grant administrators for very much longer (see Batie's article in the Third Quarter 1988 issue of *CHOICES*).

In his final grievance with my article, Farrell asserts that there is "far more flexibility, capability, and yes, even power to bring about internal change in universities than McDowell assumes." If that be so, then I see little evidence of the exercise of that power by Deans, Directors, and Vice Presidents for Agriculture and Natural Resources, though I would say that membership by faculty Extension Economists in the departments of Agricultural Economics in the California system is a small step in the right direction.

From: Charles G. Scruggs

Retired Editor-in-Chief
"Progressive Farmer"
Re: The phrase: AGRI=FOOD

AGRI=FOOD
AGRI=Food
Agri=food
agri=food

This phrase was developed in an attempt to find a way to describe the totality and interrelationship of two entities that are now often thought of as separate operations. The Equal Sign is integral to this new term.

This new phrase is intended to remind all that food and natural fibers production begins first with production agriculture on the farms and ranches of America. Only then can products begin to move through the processing and marketing network to consumers.

The result of this relationship is that the American consumer is provided with the safest, most nutritious, most abundant and lowest cost food in the world.