

Technological Advance: China's Twist on Farm/Consumer Policies

The Chinese government has proclaimed its intent to make agriculture an important driver of the country's economic development and growth. This is not unusual. Many, if not most, countries launch the process of economic growth by increasing the productivity of agriculture.

Once a nation's food can be amply supplied, resources can be devoted to the production of goods and services that improve standard of living but are less essential than food. Farm policies designed to enhance the productivity of agriculture—usually focusing on inputs—have been dubbed developmental policies.

Developmental policies affect agricultural inputs by improving their quality, expanding their supply or lowering their prices. Developmental farm policies are really consumer policies since they do tend to ensure an ample supply of food at reasonable prices.

As we have written, China is using a number of developmental policies including land reclamation and investment in technologies and institutional infrastructure. In this column, we will focus specifically on a few of the investments China is making to advance agricultural technology.

- The ministry of agriculture announced that it will establish 20 plant and seed breeding centers in the western area of China over the next five years.
- A new wheat hybrid has been created by a research group in Shandong Province, east China, headed by Professor Chen Huimin. China People's Daily reports, "The hybrid wheat was created by the combination or blend of wheat cells with a weed originally growing in Australia." The new wheat is said to be resistant to salt and thus can be grown on the highly saline soil that covers large areas of China. And if that isn't remarkable enough, there is a report of the wheat yielding 111 bu/ac with a protein content of 17.7 to 20%.
- There are other reports of productivity advances via plant breeding. On November 25, 2000, the People's Daily reported, "Chinese agricultural scientists have developed a new millet breed with a reported per hectare yield of 15,525 kg, three to four times more than the ordinary ones." According to the researchers, the new millet, called Dungu No. 1, is also drought and disease resistant.
- Since rainfall/water shortages are often particularly acute in the western regions, water-efficient irrigation technologies and drought-resistant grain varieties are being extended to farmers as quickly as they can be developed.

- Another type of developmental policy, in addition to land distribution and public financing of technology development, is the education/training of farmers and prospective farmers. In this country, that developmental policy is carried out by Land Grant Universities, Extension Service, 4-H, and VoAg. In China, similar ongoing and new education activities are in place. China's Ministry of Agriculture is gearing up plans to run training courses for 3,000 farmers annually in the coming five years.
- One of China's ongoing education and research institutions is the China Agricultural University. This leading agricultural education and research institution boasts 223 professors, 617 associate professors, 1,037 graduate students and 6,556 undergraduates. It has modern research laboratories for agricultural biotechnology, plant physiology and biochemistry, and integrated pest management among others.
- China has also begun investing in and using remote sensing satellites for land surveying, agricultural output assessment, forestry survey, and weather forecasting, among other uses. China is the fifth country with the capacity to develop and launch geostationary telecommunications satellites. The satellites will allow identification of land suitable for agricultural development as well as the monitoring and analysis of crop development in existing crop fields. The satellites will also allow development of GPS (Global Positioning System) technology in China's agriculture and the introduction of precision agriculture techniques, especially in China's more wide-open and developing western area.

Historically, China has experienced high yields for some crops, such as cotton, but yields well below the U.S. for grains. Developmental farm policies, underway in China, are likely to close this yield gap for many of China's crops, furthering its consumer policy of ensuring ample supplies of food at reasonable prices. External investment by multinational agribusinesses can also accelerate this process but that's part of the rest of the story and another column.

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