

How to feed China

A tale of two paradigms

Feeding the world's most populous nation is a task of mammoth proportions. In the following article, *Dale Jiajun Wen* contrasts the successful 'food security' approach adopted by the Chinese authorities in respect of grain production with the perils which have attended the 'market-based' approach adopted in respect of soybean cultivation.

The current food situation in China

IT is no small task for China to feed itself: with 21% of the world's population, it only has 9% of the world's arable land. Its most fertile land depends on irrigation and is thus threatened by water pollution, floods, or droughts. Water is already scarce, especially in the 'dry North', which encompasses all areas north of the Yangtze River basin and has two-thirds of the country's cropland but only one-fifth of its water. Even if one includes the 'humid South', the water availability per capita in China is less than 40% of the global average.

China's economic boom during the last few decades has made it more affordable to buy food from abroad, but it has also caused more problems at home. Much of this boom has taken place in the Pearl River Delta and Yangtze River Delta, former rice and fish baskets. The Pearl River Delta is already importing half of its food from other areas. The Yangtze River Delta is barely self-sufficient. Rising incomes have also led to a shift in diets towards more animal protein, which is more resource-intensive to produce. The pressure is on, and food prices are rising in China like everywhere else. The price of pork more than doubled in 2007, which led to a national outcry.

Nevertheless, China is still quite self-sufficient in food. During the last 10 years, annual grain yield per capita has varied between 333.29 kg (2003) and 411 kg (1998), with an annual average of about 380 kg. Some kinds

of food, such as soybean and edible vegetable oil, are imported in large amounts, but the major grains, rice, wheat, and maize, are still mostly grown in China, with imports making up less than 5% of total consumption. Because of this self-sufficiency, food prices in China have been relatively stable. According to the National Statistics Bureau, the average food price increased by only 10% in 2007. The price of rice and wheat increased little, while the price of corn and soybean increased by 15% and 25%, respectively. During the first quarter of 2008, the price of rice rose by only 3.5%, while the price of Thai rice on international markets surged by 31% from \$580 to \$760 per ton within the last week of March. China also maintains a large reserve of grain. In March 2008, Prime Minister Wen Jiabao revealed that the government has 150 to 200 million metric tons of grain on reserve, equal to 30 to 40% of China's annual consumption. This is much more than the 17 to 18% regarded by the UN Food and Agriculture Organisation (FAO) as a safe minimum for global stocks. For rice alone, reserves are 40 to 50 million tons, which shields China from the ongoing turmoil in the international rice market.

So why worry about how to feed China? Apart from major natural disasters, nothing should be able to shake China's food security in the near future. Long-term threats, like global warming, may loom on the horizon, but isn't a strong economy and technological progress the best insurance against such threats?

Actually, China needs to worry

about its food security right now. With fertiliser and pesticide use having already reached record levels, and soil and water becoming scarcer, food production is likely to shrink, while demand is likely to rise. Rising energy prices lead to rising prices for agriculture inputs, threatening the profitability of food producers. In recent years, two competing strategies have been promoted to prepare for this crisis, one emphasising domestic food production and the other relying on international markets. It is time to draw some lessons, and plot a course for the future.

Domestic food production

Food production in China has gone through ups and downs. For decades, the government favoured the export industries in coastal regions at the expense of rural development. Nevertheless, the surging use of fertilisers and pesticides produced results, and from 1994 to 1998 China enjoyed five consecutive years of bumper crops, with annual grain production surpassing 500 million tons. The price of grain fell, and this, together with the neglect of rural areas, took its toll. In 2003, the per capita grain yield was only 333 kg, 20% less than in 1998. The national grain reserve dropped to less than 30% of annual consumption, the lowest since 1974.

This sounded an alarm. The government renewed efforts to encourage grain production. A minimum grain purchase price was stipulated, and it was guaranteed to be paid by state-run granaries. Subsidies for grain

farmers were increased. Public debate grew about the so-called 'three-dimensional rural crisis' (rural area, agriculture, and peasants), which summarises the multitude of troubles, such as stagnant income, declining public services, overstaffed but inefficient local government, rampant corruption, declining social capital, degraded environment, and expanding protests and demonstrations.

This crisis is now widely accepted as the biggest challenge facing China. As a result of this debate, the government policy has started to shift during the last five years from 'structural adjustment'-type to Keynesian-type policies. Rural taxes were eliminated in 2005, and government investment in rural development has been growing at 25 to 30% annually, with much of it going into free primary education and rebuilding of rural health care.

Though many of these policies are only band-aid-type measures, which address symptoms instead of root causes, there are undeniably some positive results. Some migrant workers from rural areas have come to regard life in their home village as less dreadful and are starting to return home. For the first time in two decades, the special economic zone at the Pearl River Delta is actually experiencing a shortage of labour for its sweatshops. On the other hand, grain production came back up, reaching 500 million tons in 2007. China actually produced a surplus in 2007, exporting 7 million tons more grain than it imported. To stabilise domestic prices during the recent rise in international markets, the government removed export tax rebates for 84 types of food including wheat, rice, corn and soybeans in December 2007. In early 2008, it further imposed 5% to 25% export tax tariff and quotas for 57 types of food. The Chinese government also showed foresight in not getting deeply involved in the fad of biofuels. After 2002, a few corn ethanol production lines were imported from the US, but this was soon realised as a mistake, and in June 2007 the government stopped any new projects that turn corn or other food

into biofuel. All in all, these government policies of encouraging domestic food production and stabilising domestic prices can be regarded as a success.

The 'invisible hand' of the market? – A case study of soybean

In contrast to other kinds of food, soybean production in China has been exposed to the forces of the world market in recent years, with drastic consequences. Soybean has a long history in China, where it was domesticated almost 5,000 years ago. The legendary Emperor Shennong (literally: the Emperor of 'Magic Agriculture') included soybean as the only legume in his list of five life-sustaining grains. Millennia of cultivation have produced an enormous range of varieties, as well as the vast body of indigenous knowledge associated with it. Until the 1990s, China had a long history of exporting soy, and it had been largely self-sufficient until the early 2000s. But during the World Trade Organisation (WTO) negotiations, the agricultural sector was a sector where China was willing to make rather large concessions. As a consequence, the tariff for soy imports was cut to 3%. Since then, soy imports have been soaring. In 2003, soy imports reached 20.74 million tons (doubling within three years), and China became the world's biggest soy importer. In 2005, soy imports equalled 26.5 million tons, 1.6 times domestic production. Most of the imports are genetically modified (GM) soy from the US, Brazil and Argentina. Soybean has thus become one of the few food items where China depends on imports, which accounted, in 2007, for more than two-thirds of domestic consumption.

Media attention has mostly focused on the producing countries of this soybean trade. On 28 April, the German magazine *Der Spiegel* ran an article 'The Struggle to Satisfy China and India's Hunger'. In it, soy production in Brazil is described as 'a culture of death'. It is driving defor-

estation and pushing hundreds of small farmers into bankruptcy. According to the article, 'From the Río de la Plata to the Amazon, the Chinese are sucking the markets for soybeans dry. Large segments of the state of Mato Grosso are already covered with a green, pesticide-drenched monoculture.'

The other side of the story, which plays out in China and has received far less attention, is unfortunately just as sad. Soybean producers in China have not only been assailed by surging imports, but they have also suffered from declining exports. In the mid-1990s, China used to export more than 1 million tons of mostly organic soybeans per year to South Korea and Japan. In recent years, the export has steadily dropped to 200,000-300,000 tons per year, partly because the buyers are concerned about genetic contamination by the GM soy imports to China. Needless to say, soybean farmers in China are devastated. In the northeastern province of Heilongjiang, about 20 million small farmers used to grow around 40% of the country's soybeans. According to a news report in September 2006, the soybean price in Heilongjiang had dropped to 28 cents per kilogramme in 2005. This was below the production cost even if labour cost was not included. Consequently, in 2006 alone, the province saw the soybean cultivation area shrink by 25%. The shrinkage continued in 2007 by at least 5%. Millions of soybean peasants scrambled to switch to other crops, or simply abandoned the land to join the crowds of migratory workers.

During this transition, a few major players on the international market did not fail to make a tidy profit, while operating side by side with big governments, as often happens in WTO and other 'free trade' negotiations. Toward the end of 2003, the US and China were on the brink of a trade war due to the large trade deficit of the US. To reduce the tension, Chinese Prime Minister Wen Jiabao visited the US in December 2003 and announced that the Chinese government would send delegates to pur-

chase agriculture products in the US, primarily soy and cotton. Such an announcement may be regarded as a laudable peace offer, but in the modern financial world, no such good deed goes unpunished. Before the announcement, in December 2003, the monthly average of soybean future price on the Chicago Board of Trade was \$7.70/bushel. It soared to \$9.82 and \$9.89/bushel in March and April 2004, when the Chinese made the bulk of their purchases. Then it declined rapidly and reached \$5.93/bushel in August 2004. In comparison, the monthly averages of soybean futures in April 2003 and April 2005 were only \$6.04/bushel and \$6.23/bushel respectively, more than 35% below the April 2004 price. While all this was perfectly legal, it made waves in China, and the so-called 'soybean crisis' will be remembered for a long time to come. A study by the Chinese Academy of Science has estimated that China overpaid for its soy during this period by at least \$1.5 billion.

Since China's accession to the WTO, Chinese soybean growers, oil producers, and consumers have all been losing out to big international agribusinesses.

Eventually, it was the domestic oil mills in China which became one of the biggest losers. The highly overpriced soybeans from the US were passed on to them and put them into a serious financial squeeze. In 2005, big agribusinesses came to the rescue, massively buying out the Chinese oil mills. Today, the big four in agribusiness (ADM, Cargill, Bunge, Louis Dreyfus) are estimated to control about 85% of the market, as they partly or solely own 64 of the about 90 large-scale soybean oil mills in China. This kind of market concentration has made the soybean oil mar-

ket in China quite vulnerable to market manipulation, as shown by price surges: soybean oil price increased from 5,000 Yuan/ton to 8,000 Yuan/ton in just two months, between September and November 2006. Needless to say, mills controlled by the big agribusinesses often prefer GM soy growers from North America or Latin America to domestic growers, as the former are vertically integrated into their global operations. This delivered a further blow to local growers.

Since China's accession to the WTO, Chinese soybean growers, oil producers, and consumers have all been losing out to big international agribusinesses. Another loser under this so-called 'free trade' is the future of soybean itself: with the rapid and massive bankruptcy of huge numbers of small growers, the incredible biodiversity of soy varieties and the indigenous knowledge associated with them are dying out as well. To neoliberal scholars, all this might appear as necessary adjustment costs during a shift to more cost-efficient soybean production and distribution. But if all the external social and environmental costs could be counted, this drastic and rapid shift of soybean production from traditional farmlands in China to former rainforests in Brazil would most likely show up as what it really is: a disaster.

Is trade liberalisation the right way?

As mentioned above, the Chinese government enjoyed noteworthy success in stimulating the domestic production of grains for domestic consumption. The forays of international traders into the soybean market, by contrast, have left millions of people impoverished. Nevertheless, many self-proclaimed economic experts are trying to prescribe 'market solutions' as a panacea for China's food worries, and these enthusiasts come from inside China as much as from outside.

For years, the well-known economist Prof. Mao Yushi has proclaimed that worries about food supplies are unnecessary: the world market will automatically find the best allocation

of resources, as long as we keep it free of government interference, and thus the market will prevent any long-term food crisis. He points out that the global grain market, in the many decades of its existence, has rarely shown a grain shortage; on the contrary, selling grain has been the usual challenge because of over-supply. He acknowledges that enough grain in the market does not imply that nobody will starve, since some people may be too poor to afford enough food, but it should be easy to remedy this with social welfare and charity, since there would presumably never be too many of these poor. Prof. Mao even went as far as saying that there is no need for China to protect its arable land: given its high population density, China has no competitive advantage in food production; thus why not give it up, and focus on areas where it does have competitive advantage, like labour-intensive manufacturing? Using the profit to buy food from the international market would be far more efficient than restraining the invisible hand of the market with zoning laws against urban sprawl. Even in April 2008, after the global food crisis had taken shape, Prof. Mao still insisted in a newspaper interview that China should reduce its grain production and plan to buy more from world markets, as it is not efficient at all, from the economic perspective, for China to produce most of its own food.

For decades, people like Prof. Mao have played a prominent role in Chinese circles, both in academia and in the media. Their lack of common sense may explain some of the problems that China has run into during this time. Today, their influence may be waning; at least, they are sometimes criticised by other Chinese writers for ignoring reality. They are nicknamed the 'American parrots' by some Chinese readers, since they act like mouthpieces for the most radical schools of market fundamentalists, a typical US position in Chinese debates.

Advice from foreign experts has become more subtle and sophisticated. The scenarios that Prof. Mao wants to promote become scenarios

that will happen through sheer force of destiny. In an online article for the *Financial Times* Chinese edition on 25 April, UBS economist Jonathan Anderson was quoted as suggesting that China should gradually increase food imports and give up the longstanding policy of food self-sufficiency. In another article on 8 May, he says, 'We have already seen what a "perfect storm" of high demand, tight supply and market opening does for other commodity imports and, sooner or later, the same factors will necessarily drive food imports as well.'

This metaphor of a 'perfect storm' may be more fitting than Mr Anderson realises. For him, it presumably means rapidly rising imports and prices. But as we saw for the case of soybeans, it can take on a far more disastrous meaning for many innocent people trapped on the fringes of the soybean trade. Fortunately, the staple grain rice has not yet been commodified to the same extent as soybeans, with most of the world's rice still being produced and consumed locally. Given that global rice trade is only about 10% of annual rice consumption in China, one barely dares to imagine what kind of storm it could generate if China gave up self-sufficiency and expected global markets to feed it.

What should we eat and how should we live?

By contrasting two policy approaches to food production and trade, we have only addressed the most accessible part of the problem of how to feed China, and even there we have barely scratched the surface. We could delve deeper into the current debate on what caused the recent rise in food prices, doubting the claim made by German Chancellor Angela Merkel on 18 April that it is not biofuel production, but bad agricultural policies and changing eating habits in India and China. After all, with China still being mostly self-sufficient, how responsible could it be for the turbulence in international markets?

We could take inspiration from

Lester Brown's 1995 best-seller *Who Will Feed China?* that was aptly subtitled *Wake-Up Call for a Small Planet*, since the question of how to feed China quickly turns into the question of how to feed the world in the 21st century. We could explore further how self-sufficient China's food production really is, since much of it depends on chemical fertilisers generated from imported oil. And we could start to worry about problems that are still a few blissful years away, like climate change. But perhaps we should focus on the first, basic steps that we can take and ask: What should we eat? And how should we live?

Considering all our scientific knowledge and technological possibilities, it is quite remarkable how sick we can get from the food we choose to eat today. In China, as in other parts of the world, people shift their diet to meat and dairy products as soon as they can afford it. The grains they used to eat themselves are then fed to their animals. Before 1980, 95% of the maize consumed in China was eaten directly by the Chinese, but today, 75% is used as animal feed. In 2007, the average meat consumption of a Chinese was 53 kilogrammes, with urban Chinese rapidly approaching US consumption levels while rural consumption stayed behind. The poor in China, India or any other developing countries have every right to get the food they need. But today it seems like the Chinese consumer class is blindly copying the worst of the US lifestyle. Eating too much fat, too much animal protein, too much sugar, and often highly processed food is not healthy for one's own body or for the planet. Combined with a sedentary lifestyle and private car ownership, it is the perfect recipe for modern-day diseases such as obesity, diabetes and heart disease. The obesity rate in China has almost doubled in the last 10 years. It is estimated that one out of 10 Chinese children is already obese, and that the number is growing by 8% per year. In big cities like Beijing and Shanghai, one out of five children may be obese.

Meanwhile, malnutrition continues to impact the poor, often with

modern advertising and misinformation exacerbating the problems. The educated elite in China is starting to appreciate the benefits of breast-feeding, but most other Chinese would rather feed their babies on the milk formula they see in advertisements. In the countryside, cases have been recorded of mothers selling eggs at the market to buy candy or chocolate for their children, apparently thinking such processed food would be more nutritious. Among the urban poor, stories are being told of how some parents save for weeks or even months so their kids can finally eat a McDonald's Big Mac. A college graduate friend of mine once even told me, 'When I was a child, we used to drink milk straight from the cow. Of course, it was not as nutritious and hygienic as supermarket milk. My kid is having a much better life now.' In some rural areas, Vitamin A deficiency still prevails, and the few who have the education to design solutions remain fixated on high-tech fixes such as genetically engineered 'golden rice', when carrots and other Vitamin A-rich vegetables would be readily available locally if people only knew this remedy.

The economic boom has given China's cities impressive skylines and wide highways jammed full of cars, with the number of privately owned cars growing 20% per year. Twenty years ago, the 2nd ring road of Beijing was considered outskirts; today, this city is building its 6th ring road around the other rings. Urban sprawl has covered vast tracts of arable land, with the dispossessed joining the ranks of 40 million landless peasants. The acreage of arable land has decreased from 1.914 billion Mu in 2001 to 1.826 billion Mu in 2007 (1 hectare=15 Mu), rapidly approaching the 1.8 billion Mu bottom line that the Chinese government wants to maintain until 2020 to ensure food security. As in the case of biofuels, the lifestyle of the rich is threatening food supply for the poor.

In *Who Will Feed China?*, Brown concludes that '...China's emergence as a massive grain importer will be the wake-up call that will signal

trouble in the relationship between ourselves...and the natural systems and resources on which we depend. It may well force a redefinition of security, a recognition that food scarcity and the associated economic instability are far greater threats to security than military aggression.' His prediction of China as a massive grain importer may not come true, yet his warnings are every bit as real. The World Bank recently estimated that 33 countries around the world 'face potential social unrest because of the acute hike in food and energy prices.'

The ones that need to be held most responsible are the global North – those of us who travel in private cars and jet planes, who regularly eat foods shipped for thousands of miles (the average food mile in the US is 1,400 miles), who enjoy a consumerist lifestyle and take it for granted, whether we live in Beijing, Bombay or New York. With the dream of biofuels burst, we can still put our hope in other technological fixes like nuclear power and geo-engineering. But is this what we really need and want? We are eating in an ecologically and medically destructive way – those who still drink milk straight from grazing cows have a far healthier diet. We are trashing the planet without even having fun – depression is more common in the rich countries than in developing countries, and rapidly growing amongst the high-income class in China.

Those neoliberal economists may turn out to be right, after all: if nothing else comes to the rescue, the 'invisible hand' of the market may find a solution, and use famine, plague, chaos or wars to produce a new economic equilibrium. We can hang on to our little desires and addictions, hoping not to be touched by such colossal human suffering. Yet the bell tolls for all of us, rich and poor alike. So while there is still time, let us question ourselves: What should we eat? How should we live? What kind of world do we want to live in? How do we get from here to there? ◆

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Towards Full and Decent Employment

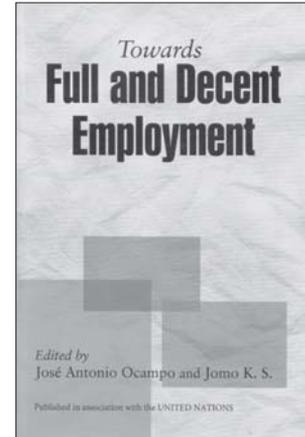
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WHILE the international community has made a commitment to achieving full employment and decent work for all, this goal seems ever more distant in view of recent trends such as growing unemployment and underemployment, the phenomenon of 'jobless growth', the growing 'casualization' of employment relations, the promotion of labour flexibility at the expense of welfare security, de-industrialization and the continued decline of peasant agriculture.

While revisiting some familiar with new lenses, this book also breaks new ground in seeking fresh solutions. Employment creation is the key link in ensuring that economic growth contributes to poverty reduction, with management of technological change playing a crucial role.

While the recent trend towards greater labour flexibility seems irresistible, recent experience suggest some options for also ensuring decent work and economic security. Although recent financial liberalization has exacerbated employment problems, alternative macroeconomic policy priorities can make a difference. New approaches to social security, the informal economy, the welfare state and rural employment in Africa are explored.



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