



China-Programm

Nora Sausmikat (Ed.)

Sustainable agriculture in China: Land policies, food and farming issues

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Why this brochure

Exactly four years ago our first brochure on agriculture was published (<http://www.eu-china.net/materialien/agriculture-in-china-between-self-sufficiency-and-global-integration-1/>). At that time, the results of the study “International Assessment of Agricultural Knowledge, Science, and Technology for development” (IAASTD, 2008), commissioned by the World Bank, were a hot topic among European NGOs. The report supported the arguments of the activists in their endeavor for global ecological reforms and new agricultural policies. Despite the fact that reforms in agricultural policies cannot ignore China’s growing role in global agriculture, European NGOs at that time were reluctant to get involved with China. Therefore, we published our first brochure to foster more knowledge on the historical development of rural China since 1980, food sovereignty and safety issues as well as China’s global investments in agriculture.

Today the situation changed a lot. Chinese and European activists have met and developed joint programs in the field of certification for organic agriculture (PGS), mobilizing for small scale agriculture, pesticide-free agriculture and information sharing on community supported agriculture schemes. Partly, these activities were conducted in the framework of our EU-China NGO Twinning program and are documented on the project’s webpage (www.eu-china-twinning.org).

This brochure documents these developments and takes it one step beyond in that it provides an overview of Chinese civil society debates and actions in the field of agriculture and sheds lights on current policies in the field of agriculture and agriculture-related issues (land property law/water policies). As land grabbing is a virulent problem inside China as well as outside China by Chinese companies we also included this topic here. Also, we aim to provide some information on China’s agricultural involvement in Africa and South America. Chinese approaches to the GMO debate and new “biotech” low-carbon innovations complete this publication.

The brochure partly documents a study tour by three activists from China organized by the Stiftung Asienhaus and supported by MISEREOR.

It is also part of the larger project “China matters,” which is an information platform for German NGOs (www.eu-china.net, kindly supported by the Stiftung Umwelt und Entwicklung Nordrhein Westfalen). We hope for stimulating thoughts while reading!

Nora Sausmikat
(Head of China Program,
Stiftung Asienhaus, Köln, July 2015)

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1. Introduction

By Nora Sausmikat

Despite overproduction, the industrial model of globalized agriculture does not provide sufficient and nutritious food for the world's population. According to Food and Agriculture Organisation (FAO) estimates, approximately 805 million people worldwide are currently affected by hunger. The IAASTD study, commissioned by the World Bank, clearly debunks the myth that industrial agriculture is superior to small-scale farming in economic, social, and ecological terms. The report argues for a new agriculture paradigm in the 21st century, recognizing the pivotal role that small-scale farmers play in feeding a growing world population in a sustainable way – particularly in Asia, Africa and Latin America.

In January 2015, Chinese dairy farmers had to pour away 600 kilograms of milk per day, as a global glut of milk drove prices to six-year lows. This occurred although Chinese imports of milk and milk products (especially milk powder) from Germany had doubled the previous year. Additionally, media reported on gigantic new Chinese dairy farm investments in Russia, with Russian farmers protesting against Chinese land-grabbing in their country. In June 2015, the Chinese enterprise Huae Sinban leased 115,000 hectare of land in the Baikal region, another 100,000 hectare were rented for feeding 100,000 milk cows. Why did Chinese farmers have to pour away their milk while gigantic new dairy farms were built?

Obviously, Chinese farmers suffer from the same structure as European farmers do – problems triggered by policies which favor the mode of industrial agriculture.

In Germany, it took 32 years of experiments in regulating the milk market. In March 2015, the German Federal Conference of Agricultural Ministers (AKM) met in Bad Homburg, Germany to prepare an exit from the EU milk quota system. Like in the years before, species-appropriate animal husbandry, GMO-free fodder, the importance of a regulation of the milk production, and control of the use of antibiotics were again hot topics. Shortly after that, the German NGO AbL, which mainly represents agro-ecological, organic and CSA farmers, published a commentary on this meeting and supported the market responsibility scheme of the European Milk Board, which calls for fair measures in setting fixed terms and quantities for milk production to avoid “milk seas” and price decline. After 32 years of experiences with milk quotas, the quotas were dropped. The reason: they did not prevent a price decline (2009/12) – on the contrary they fostered them.

Today, an increase in export quotas for milk/milk powder (especially because of the high demand of Chinese consumers for German milk/milk powder) will again lead to overproduction and a subsequent price decline, as Romuald Schaber, Chair of the German Milk producers (BDM), recently declared. At the time of this brochure's publication, the BDM protested against the drastically price declines and overproduction of milk. The overproduction mainly is triggered by the message of increased Chinese demand – perpetuated by governments in both regions.

This shows that we need information not only produced by companies, academics and governments. Also, statistics do not always help. If people in Europe and China want a change in agricultural develop-

ments, civil society voices as well as farmers have to get involved.

What is the problem?

Sustainable agriculture is the production of food or other plant or animal products using farming techniques that protect the environment, public health, local communities, and animal welfare. The milk crisis is only one symptom of an unhealthy trend in production and consumption. The rights of small farmers shrink as the power of big companies grows. Today, speculation with land and food leads to land-grabbing and the destruction of livelihoods.

Today, China is a global player and is the fourth largest food trader in the world. Additionally, it holds the second largest area of organic agricultural land (2012) and belongs to the largest exporters of organic food products worldwide.¹

Simultaneously, China is a country of small-scale farming. The majority of these farmers have too small a production to afford certification for organic food (more detailed discussion can be found here: <http://www.eu-china.net/materialien/zweites-eu-china-ngo-twinning-policy-paper-erschiene-alternative-organic-certification-opportunities-for-small-scale-organic-farming-local-markets-and-rural-development-in-china/>). Additionally, per capita arable land is very small: today, China has 1.8 billion Mu (120 million hectares) arable land employing over 900 million farmers and per capita arable land is just 1.38 Mu (0.09 hectare). To improve agricultural productivity, the government encourages large scale agriculture which has to use a lot of pesticides and fertilizer. China consumes almost 40 percent of the world's chemical fertilizers.

Above, China is a country with a marked rural-urban divide. Rural income, which declined from 45 percent of the urban income in 1990 to 30 percent in 2003, slightly rose to 35.38 percent in 2015 due to pro-rural policies.

To overcome the rural-urban divide, several institutions, new laws and regulations have been designed, mainly in land policy and local governance.

One important source of income for local communities was the new possibility to sell land rights (see chapter 6). Media reported that over 100,000 smaller and bigger protests have arisen annually because of land grabbing and missing or too little compensation. The new laws will help peasants to trade their land use rights. It shall trigger the commercialization of arable land – enable bigger food producing companies to purchase more land. But one side effect can be a growing number of landless peasants (*nongmin gong*).

Another very serious problem is food safety. China does not lack laws and regulations to protect the health of its people but does lack the ability to implement them. Massive food scandals continue to unsettle Chinese consumers. Similar to corruption, the problem of food safety is an endemic problem which calls for thorough reform of the economic and political system.

Starting from the infamous 2008 Sanlu milk scandal when melamine-contaminated baby formula caused the deaths of six children and affected the health of another 300,000 infants, there have been reports on food scandals nearly every month: gutter oil, rat meat sold as lamb skewers, exploding melons, tainted meat in Western fast food chains' hamburgers.

Chinese policymakers blame smallholder farmers for food safety scandals and equate industrial agriculture with modernization and development. Instead of increasing support for smallholders and in doing so changing the situation for the better, the wrong conclusions were drawn.

Given this complex problematic, Chinese politicians started to develop their own understanding of sustainable agriculture and food production: The 1980s were mainly governed by pro-rural policies. The 1990s focused on urban development and led to enormous

rural poverty, left-behind children and massive migration. Since 2003, the party shifted back and developed several pro-rural development concepts.

Today, pro-rural politics mean large-scale industrial agriculture, be it conventional or organic agriculture. Huge monocultures or pig breeding factories as well as dairy farms govern the vision of Chinese Agricultural ministers. Also, water and land policies support these visions of a so-called modern, effective agriculture (chapter 6, 7 and 8).

China's globalized agriculture

Being the fourth biggest food trader in the world, China not only wants to secure food sovereignty but also foster economic growth. As shown in this brochure, China is very active in Africa and South America (chapter 9 and 10). The global food trade mechanism follows the highest profit which is made by trading wheat, oilseeds, corn, and soya. Consequently, Chinese land-intensive agricultural investments in Africa and South America focus on these cash-crops, and again endanger local farmers who lose their land.

The news on China is heating up the market and prices. According to a recent OECD study, the global export of wheat and oil seeds will grow by about 70 Mio. Tons year-on-year (from 390 to 460 Tons) just because of the population growth and increased meat consumption in China (China is responsible

for the high demand of soy as pig fodder). "China has so far achieved its main objectives," the OECD-FAO report 'Agricultural Outlook' states. Despite its narrow resource base, food security had improved significantly, states the report's chapter on China. Problems are rather seen in the rising demand and declining availability of land, water and labor.

The impact on the world market will be the higher import of oil seeds, animal feed and dairy products. Cotton imports may decline because of the declining importance of the textile sector.²

This news does not really paint the whole picture. As described in the article on cotton trade (chapter 8), policies which govern the cotton market are driven by a very complex mechanism related to ethnic minority policies, trade policy with Africa and pricing policies determined by global market policies (im-/export quotas/textile fibre agreements).

Also, news on growing meat consumption in China could trigger a similar crisis as the above-mentioned milk crisis which was steered by the argument of the growing demand in China. When the Chinese agricultural activists visited the CSAs and ecological farms in Germany in October 2014, they were shocked to learn about how the alleged developments in China influence farms in Germany.

Farmers and NGOs here as well as activists and farmers in China need to share information. A realistic under-

Fact Sheet Agriculture China

Rural population (2013)	46.30 %
Urban population (2013)	53.70 %
Share of Agriculture in national GDP (2013)	10.00 %
Composition of GDP value from agriculture (2013):	
farming	53.00 %
animal husbandry	29.00 %
Employed in primary industry (2013)	31.00 %
Share of rural income from urban income (2015)	35.38 %
Per capita income of urban residents (2015)	2300 €
Per capita income of rural residents (2015)	815 €

Source: China Statistical Yearbook 2014, <http://www.stats.gov.cn/tjsj/nds/2014/indexeh.htm>,
<http://www.ecns.cn/2015/07-28/174776.shtml>.

standing of the situation in China is missing. Every farmer we visited told us that they really would love to exchange with farmers in China since the only information they could get their hands on came from Brussels/ or OECD reports. This brochure hopes to support these exchanges, show how people in China find alternatives to unsustainable agricultural policies and point out the similar problems, resistance and countermeasures are in Europe and China.

Social movements getting stronger – world wide

A first step towards this exchange is to describe these countermeasures in China. A discourse on small-scale agriculture or even on “a new farming culture” or “farming as a new lifestyle” is still far from mainstream, but there is a growing number of initiatives: by forming new alliances between the rural and urban populations and organizing “farmers markets”, and fighting for a new perception of the countryside and farmers livelihoods or establish self-sufficient communes (Chapters 2–5). Activists in Taiwan or Hong Kong are in constant exchange with their counterparts in mainland China. They all fight for a sustainable agriculture which pays respect to farmer livelihoods, animal welfare, and consumer interests.

Climate change justifies everything: Searching for GMO low-carbon biotech to combat climate change

The production of synthetic fertilizer and pesticides are contributing to high percentage of carbon emissions. For every ton of nitrogen fertilizer manufactured and used in China, 13.5 tons of CO₂-equivalent gases are emitted, compared to 9.7 tons in Europa (chapter 10). In China, huge investments are made into the development of low-carbon GMO bio-technology to sustain large-scale agriculture but simultaneously meet the demand to carbon emission reduction. To reduce CO₂ emission produced by fertilizers and additives for animal feed, Chinese scientists have developed GMO cash-crops (such as phytaze maize) which do not need as many additives for animal feed as conventional feed plants. The GMO technology here is serving the glob-

ally supported policy of climate protection. In the final chapter, (chapter 11) Jiang Yifan comments on the consequences of China’s GMO-policies.

Conclusion

We aim to provide a thought-provoking textbook full of information around new trends among farmers and activists in China and China’s role in agricultural developments. China is closely connected to the world market and therefore also to German/European agriculture. We think it necessary to know more about current trends and developments in Chinese local and international policies. Also, as argued above, we think it very necessary to share information on the realities in China and become acquainted with ideas of Chinese ecological farmers and rural or NGO activists. We also support the idea that food production should be considered as part of an environmental system (soil, air, water, and biodiversity).

In a world where 60 percent of the worldwide farming soil is owned by 2 percent of large enterprises, only three international companies control 50 percent of the commercial seed market, and only 4 mega companies control the global wheat trade,³ the voices of farmers and activists who want to change this reality need to be strengthened. China is of special importance, particularly since the rising demand in China is made responsible for the necessity of industrial growth-oriented agriculture. In this brochure we display alternative voices – Chinese voices that need to be heard.

Annotations

1. Helga Willer, Julia Lernoud, The world of organic agriculture, FiBL & IFOAM report, Bonn 2014, p. 72.
2. <http://www.eu-china.net/materialien/oecd-fao-bericht-zu-china-ein-ausblick-2014-2023-juni-2013/> or <http://www.agri-outlook.org/>
3. Christine Chemnitz, Jes Weigelt, Bodenatlas, Edited by Heinrich-Böll-Stiftung, Institute for Advanced Sustainability Studies, Bund für Umwelt- und Naturschutz Deutschland und Le Monde diplomatique, 2015, p. 15 and 26.

2. Sharing experiences – Agrarian activism in China and Germany

By Yifan Jiang



Jiang Yifan, Chang Tianle, Yang Hongyan with staff from Stiftung Asienhaus and Misereor

From October 1 to 10, 2014, I was invited together with Tianle Chang by Stiftung Asienhaus to embark on a ten-day “Chinese Agriculture Study Tour Germany 2014” supported by MISEREOR.

As activists of sustainable agriculture from China, the two of us organize farmers’ markets in Beijing and Shanghai, and advocate for the idea of Community Supported Agriculture (CSA). During our visit to Germany, we took part in the “Wir haben es satt! Kongress” in Berlin (October 2–5, 2014), visited many places and talked to farmers, consumers, activists and experts, and in the process learned about the “Wir haben es satt!” movement and its line of thinking.

This study trip’s first impact on me was rather psychological. In China, Germany is esteemed as a model of modernization and industrialization, which we as a “latecomer” of modernization admire. Modernization is esteemed so important that it often becomes an end in itself. Such thinking also prevails in our agricultural thinking. But in Germany, people from different walks of life seemed to be opposed to industrialized farming,

which was something new to me. It was new to me not because I hadn’t heard of the discontent towards and rejection of globalization and neoliberalism across the world, but because I found that German people were also experiencing something new to them, namely the formation of a broad alliance against different forms of industrial farming. The alliance has been quite successful in reaching a broad and solid consensus regarding sustainable agriculture among different camps with different interests, which roughly put, is ecological and regional family farming. As I learnt, this is not only the ‘first’ time in Germany, but in Europe as well. To me, to witness it taking place NOW, instead of being long existing and inert, is encouraging, for it means there are still many possibilities waiting to unfold. To us, it’s an ongoing process that can be observed and a resource which can be utilized to debunk the myth of how Germany, or Europe, with its “modernized” agriculture has not only achieved high productivity and high profit, but also secured food quality and protected the environment and landscape.

The second thing is that the experience has broadened my imagination of the question of agricultural sustainability. To be sure, I knew about the harm done by animal factories and monoculture, and have reservations



Yifan and Tianle at the Wir haben es satt! Congress in Berlin

about GMO, but I hadn't often thought of their inter-relationship and ramifications. For example, industrial animal husbandry results in dependency on imported Latin-American GMO and monoculture feed, monoculture leads to not only ecological degradation, but also the decline in the local food economy; industrial farming also often incurs speculation and surging land prices, which squeeze small farmers out of business, and so on.

International trade plays a very important role in these complex causal chains, which is one perspective that has been absent from the Chinese CSA movement. But China is deeply implicated in international trade of agro-products which has consequences not only at home, as shown in the demise of local soybean and the recent milk-dumping incidents, but also abroad, as



Discussion with Green party member Bärbel Höhn at Abl-Hamm at office of magazine Freie Bauernstimme – AbL-Hamm

Chinese capitals are not only purchasing agro-products, but also buying up agricultural resources and operating industrial farming in other places of the world, especially in Latin America. Hence, there is also a global justice perspective waiting to be highlighted.

It is with such contextualization that the GMO question could be fully understood. In China, the debate over GMO food cultivation is over-heated, but the public debate revolves around the “scientific” (arrogantly claimed by the research-industry-government trinity) question of intake safety,

while other important aspects are neglected. That is why the arguments of the European anti-GMO movement are illuminating to me, particularly so because I realized it was part of a larger movement against industrial farming. Therefore, what people are against are not GMO per se, but the many consequences of its application in agriculture, such as the corporate control of peasant seeds and the loss of agricultural biodiversity, topics they have been opposed to on different frontiers.

After returning home, I published two articles on the GMO question on a leading online news agency in China. The first tried to complement the one-minded intake safety debate with angles on the long term risks, peasant seed rights and agricultural biodiversity, while at the same time questioning the “GMO for food security” theme of the pro-GMO arguments by showing alternative ecological solutions and by questioning the country’s “rigid demand” of agro-products which is contributed to by the over-consumption of meat and oil in cities. The second article was an interview with Benny Haerlin from Save Our Seeds and ARC2020. Being a veteran of the European anti-GMO campaign and a vocal spokesperson for sustainable agriculture, he shows why the anti-GMO movement is consistent with the defense of sustainable peasant agriculture. Both articles are widely read and have presumably brought in or highlighted alternative perspectives for looking at GMO.

Another important observation from this trip was that policy making was a central arena where struggles of different paradigms of agriculture took place. The skewed CAP subsidy system and its dilution of “greening” provisions, the double subsidy for energy crops, and the phasing out of milk quotas all play a part in the rise of industrial farming and the pressure on small farms (the

Another important observation from this trip was related to how institutional arrangements are implicit in the rise of industrial agriculture and how the civil society fought against them.

Jiang Yifan

new EU Seed Regulation would have done the same had it been passed) and civil society fought against them. It seems a very good lesson to understand the intended

and unintended consequences of different policies on different aspects of agriculture. For example, while the double subsidy for biogas effectively contributed to the growth in this new industry, it has also caused monoculture, land-grabbing, hardship on small food farms, and even the decline of the local food economy.

If the above-mentioned aspects are educational, then the following is both educating and encouraging. Being a broad alliance comprising more than 200 organizations and networks with different causes, “Wir haben es satt!” has managed to create dialogues among these different camps and has established basic consensus as a result. This consensus is not just an artful balance of mixed interests, but there are also true common grounds where all parties stand.

What’s most illustrative of this point is the story Jochen



Jochen Fritz, Benny Härlin and Chang Tianle at a press conference in Berlin

Fritz from *Meine Landwirtschaft*, the co-organizer of *Wir-haben-es-satt!* told us.

He told us about how dairy farmers, suffering from the volatility of the increasingly globalized dairy market eventually met with other parties in the movement, including environmentalists who want to diminish the ecological impact of farming, international aid workers who are against the destruction of third world agriculture by subsidized European products, anti-GMO campaigners who want to keep GMO feed outside Europe, animal welfare activists who are against animal factory, all on the common ground of “regional farming”. This is a living example of how people from different walks of

life spontaneously come to embrace the idea of “food sovereignty” in an era of globalization, which is a real political achievement.

What’s also encouraging is to see the myriads of grass-roots initiatives resisting or circumventing the neo-liberalist nature of the agriculture sector and people’s everyday lives. We visited CSA farms run by both young returnee farmers and more senior native farmers, and learned that the German CSA farms stick very well to the original idea of CSA, which is based on solidarity, with strong support from consumers/co-producers (while Chinese CSAs are often relegated to prepayment box schemes). We learned about a renaissance of farmer’s markets taking place in Germany which reflects an aspiration for direct marketing in response to undermining the mainstream market environment. We heard the young farmers’ stories of fighting land-grabbing.



Yifan and Tianle at a gleaning event organized by Valentin von Thurn

We visited urban gardens which manifest people’s longing for reconnecting with soil and nature. We took part in a “gleaning” event organized by representatives of a large social process which advocate against the structural food waste inherent in the capitalistic food system and criticize the value of treating food as mere commodity ...

These events and experiences were encouraging because of their relevance to challenges we face back home. Similar actions are being taken by people in China against the consequences of capitalism. With the globalization of capital and market, there we also see a globalization of resistance.

What can we learn from each other and what cooperation can we possibly carry out?

I think what is badly needed and most feasible is an exchange of information, knowledge and ideas. We need to intensify writing, translation, publishing, media intervention and face-to-face exchange.

To the Chinese society, this input helps to debunk the widely held myth that the European industrial agriculture is our way to go in pursuit of “agricultural modernization.” New ideas such as food sovereignty, and new knowledge about agro-ecology or “the new peasantries” (I’m thinking of Professor Jan Douwe Van Der Ploeg’s illuminating work which has been published in Chinese) for example, will inspire people to look for alternatives. And we may also contribute back with our creativity.

Because of the fact that both societies are now increasingly embedded in the world market of agro-products, developments in one place may instantly affect the other. Certainly there are plenty of business news uncovering this, but they mainly look at things from a distance, at a macro level and often confined in the corporate world, they fail to connect the many dots which will have deep implications for people’s livelihood when put together.

So, it’s imperative to gather and exchange information, carry out insightful reading of these information



Jiang Yifan with Friedhelm Stodieck in front of a poster which shows Josef Jacobi, farmer in Borgentreich-Körbecke and managing director of AbL 1986–1996 in front of a British tank during a British military training 1989. The farmers blocked the tanks to protect their roads and farmland from destruction

from a global agricultural sustainability perspective. Projects like the NGO internet platform *chinadialogue* have done a great job in this respect. In my humble view, the next step to take is to make these observations and perspectives available to the general public in both societies through mass media. Only after such awareness is internalized by a larger public, can people start to look into and address relevant issues. Of course, that will take cultural translation and familiarity with the local media environment, and this is exactly an area where cooperation can take place.

3. Farmers markets versus agribusinesses

An Interview with Chang Tianle and Jiang Yifan by Jan Urhahn



Beijing Farmers Market

Small-scale farming in China asserts itself even without official support. An interview with two activists from China.

While Chinese policy-makers primarily promote industrial agriculture, small-scale farming approaches in China still play a major role. The agricultural activists Chang Tianle and Jiang Yifan advocate small-scale ecological farming. In this interview with *Südlink* they describe how they aim to improve the situation for smallholders in China.¹ Chang Tianle and Yifan Jiang visited Germany on an invitation from the German Stiftung Asienhaus. Their trip was supported by Misereor.

In many countries, agribusinesses control an increasing amount of arable land. What is the situation in China?

Chang Tianle: It is not only agribusinesses who buy arable land in China, but also corporations in other industries. As profitability in many sectors is diminish-

ing, arable land is considered a lucrative investment. We are watching a great deal of IT-companies buying fields without anyone knowing what they intend to do with the land.

Which agricultural policy does the Chinese government pursue? Does it support agribusinesses or small-scale farmers?

Chang Tianle: Regulations on agricultural production, processing and distribution structurally disadvantage smallholders. We as a civil society and consumers need to ask ourselves what kind of agriculture we want in the future. So far our priority is to get in touch with consumers. When enough people take an interest in this question and argue for small-scale farming, we can try to reach the government and convince it to change its policies.

Do you have specific suggestions on how Chinese agricultural policies should ideally look?

Chang Tianle: I would like to see better access to land for more small producers – I am against the privatization of arable land. Since the 1980s, the government is increasingly supporting large scale agribusinesses which try to sell as many chemicals and fertilizers to farmers as possible. But what the peasants need is actually sustainable technologies and know-how instead.

Jiang Yifan: The farmers need more support. While many have given up their farm, we also see a lot of people returning to the countryside, some of whom had never lived in rural areas before but can no longer bear the noise and dirt of China's cities. They wish to establish small farms, often following ecological principles. We can help them with technical expertise, but they just as well need financial support. Only then can rural areas develop and become greener.

4. A new agricultural movement

Developing a holistic understanding in Mainland China, Taiwan and Hongkong¹

By Chan Shun-hing

The traditional rural community is a holistic one in which the functions of and the relationships among people, between people and the soil and land, between production and knowledge, and between everyday life and learning are inseparable. In the urban community, the various aspects of a holistic life are taken up by modern functional organizations. The idea that everyone is a farmer can motivate urban dwellers to start reviving some elements of a life rooted in a farming culture (nong²). Farming culture differs from the cultures of hunting, gathering and nomadism in that it is a way of life in which people make a living by holding fast to the land and soil. Self-sufficiency in life cannot be achieved alone. Instead we need communication, mutual help and support, exchange and emotional interaction between people.

This article reviews the historical context and processes of the move away from – alienating oneself – from farming culture (*qu nonghua*) as experienced by farmers, the rural areas and agriculture in Mainland China, Hong Kong and Taiwan.

The historical process of alienating from farming culture

Taiwan: Agriculture has gone through a historical process of serving government policies and the needs of capital and the market in all three societies around the Taiwan Strait. During the Japanese occupation, agriculture in Taiwan was developed and industrialized for capital accumulation. Between 1920 and 1939, chemical fertilizer and modern agricultural technologies were introduced into Taiwan by the Japanese colonizers to expand the scale of agricultural production. When the

KMT government moved to Taiwan, its main agricultural objective was to increase overall production because it fed the armies and their families who came from mainland China. The first wave of the ‘green revolution’ took place between 1945 and 1968, and measures to increase output included the improvement of crop varieties, use of chemical fertilizer and introduction of agricultural machinery. Between 1945 and 1968, measures to increase output were introduced but policies that disadvantaged farmers, such as ‘grains for fertilizer’,³ were also introduced.

According to Tsai Pei-hui of the NGO Taiwan Rural Front (TRF), even though the income of Taiwan’s smallholders stabilized after 1970, they had to face problems. In the 1980s, subsistence agriculture became competitive agriculture that was ‘market-oriented’. After 1990, the



Taiwan Rural Front Partners in Yilan/Taiwan

Taiwanese government demanded a stop be put to farming and that people leave the countryside, which resulted in food dependence and rural decline. Consequently, self-sufficiency in food production has continued to decline,⁴ while policies to industrialize agriculture, which are often hostile to smallholders, have been introduced.

Mainland China: Agriculture in Mainland China has also been used for political purposes since the 1950s, with agricultural policies being tailored to support the country's industrial development. Through its planned economy, the Chinese government accumulated capital created by the agricultural sector and used it to support national industrialization.

According to Prof. Wen Tiejun, an expert on *sannong wenti*, or the three-dimensional agrarian issues in Mainland China, "[the] period of capital accumulation for national industrialization was a special period of time. This period not only shifted hundreds of billions of national capital officially owned by the people into the hands of various government departments, money which then got redistributed and appropriated in the name of reforms by later generations. This period also left behind a dualistic social economic structure in which the urban area and the rural area got separated, contradictory and antagonistic."⁵

During the period of reform and opening up in the 1980s, collective production teams were replaced by the household contract responsibility system and the tradition of a smallholder economy was restored in China. Nonetheless, a lot of farmland remains abandoned and the traditional knowledge as well as culture is no longer passed on to the future generation.

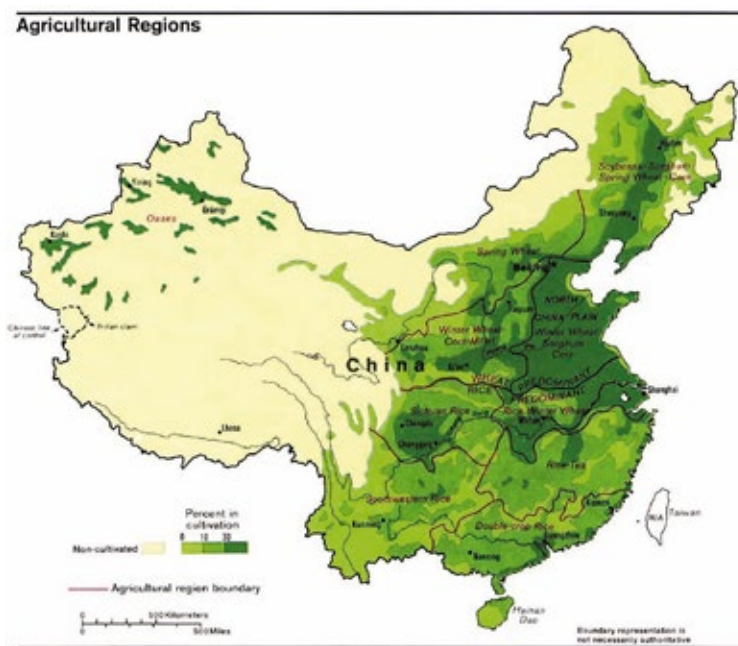
In recent years, the central government has given instructions to speed up the urbanization of rural areas. Local governments have been appropriating farmland to develop commercial and industrial facilities and infrastructure. University students who have left their rural homes to study in the city are not allowed to revive their *hukou* (household registration) in the countryside

'San nong wenti'

The renowned expert for rural development, Wen Tiejun from Renmin University in Beijing, made the point ten years ago that the difference between rural and urban structures has to be overcome to achieve a sustainable solution for the problems in the rural regions. The social problems, he said, are the result of economic and regional disintegration. The political leadership took this concept of an integrated solution, solving the problems of rural development on the economic as well as the social and institutional level up with the slogan of "San nong wenti," or the "Three rural questions." In the 11th Five Year Program (2006–2011), the Communist Party formulated new guidelines, which are supposed to promote the social balance by reducing the prosperity gap between rural and urban areas and to support a sustainable development.

Source: Nora Sausmikat, More Legitimacy for One-Party Rule? In: ASIEN, No. 99, 2006, pp. 70–91.

while migrant workers from rural areas want to stay in the city for good. Farmers who have stayed behind feel that farming has no future. Primary schools in rural areas are closing down. In the minds of most urban



Map of agricultural regions in mainland China

dwellers (and even farmers), farmers and rural villages are still associated with backwardness, ignorance, old age and poverty.

Under the pressure that urbanization exerts on rural villages, small agriculture is declining and production has become more large-scale and dominated by large companies (which means more monocultures). In the meantime, food provisions have become more import-dependent. The market economy had become dominant under socialism. Farmers were now all 'self-employed producers'. A large number of farmers floating into the cities now work on construction sites, for foreign companies or became housekeepers or salespersons. Agriculture in China is in crisis.

Hong Kong: In Hong Kong, the alienation from farming culture is the worst of all. Large parts of the countryside have been turned into land for apartment blocks, container yards, car parks and garbage dumping sites. Farmers have been forced to give up farming because their land can be turned into cash, the local market is flooded with imported food and there is a lack of support for the development of agriculture on the policy level. Therefore, Hong Kong is highly dependent on imported food. Since 1997, government policies have become even more urbanization-oriented. As an example, villages were demolished to make way for the construction of the Guangzhou-Shenzhen-Hong Kong high

speed rail link. According to the mainstream discourse, Hong Kong's development is supported by the financial industry, real estate, commerce, tourism and services. Villagers who are still farming have long been marginalized and traditional rural culture and knowledge have long been forgotten.

The interrelationship between community and agriculture: Community Supported Agriculture (CSA)

Agriculture has been turned into agro-business, a sector for the accumulation of political and economic capital. Because of government policies and the force of capital, traditional agricultural civilization has been marginalized or destroyed. Today's ecological crisis, the alienation of modern life and the unsustainability of lifestyles as a whole are largely linked with the loss of cultural values based in farming cultures (understanding farming culture/*nong* as 'civilization'). I think the idea that every person is a farmer can help us to respond to the crisis.

The 'community' and the 'agriculture' in CSA⁶ cannot be separated. CSA should not be seen simply as an organic process in which urban consumers support smallhold-



Farming in close vicinity to a waste incinerator, Likeng, Guangzhou province

ers (or vice versa). Instead urban dwellers and farmers should be seen as sharing the same origin. Both urban and rural areas can be seen as communities whose everyday life is rooted in farming culture (*nong*).

In the following section we give some examples of different forms of CSA in Taiwan, Hongkong and Mainland China:

Taiwan I

CSA practitioners of Taiwan's Hope Farmers' Market have been trying to integrate farming culture and learning, everyday life and community. The Hope Farmers' Market was formed in 2006 and is located in Taichung, Taiwan. It is an organization working for public benefit by supporting organic farming. Its members are farmers, volunteers and consumers. Through cooperation, the group hopes to promote CSA as well as the principle that the local needs of a place should be met by local resources. In 2007, Chen Meng-Kai, the convener of Hope, and his partners opened the first farmers market in Taiwan. They promote self-sufficiency in the practice of 'cooperation and simplicity'.⁷ Hope's learning platforms include monthly farmers markets, a permanent sustainable agriculture education center and a collectively-owned field. Furthermore, Hope makes use of blogs to promote long-term concerns, such as advocating the conservation of Taiwanese rice, and to provide a space to sustain the work of and the relationships between farmers, consumers and volunteers who take part in the market. The aim is to build a new model of life of "a small and beautiful community based on principles of mutual help and self-sufficiency."

These smallholders, citizens and social activists have joined together to build an alliance of *nong-xue* (farmers, scholars and students) to solve problems with the industrialization of food production. Cheng Meng-Kai proposed to abide by the laws of nature and to return to nature.

Taiwan II

Taiwan Rural Front (TRF), established in 2008, is an alliance of farmers, rural workers, NGOs, media workers, scholars, writers, lawyers, engineers, artists, stu-



"Farmer by choice" – not by birth

dents and youth. The organization was established in response to the enactment of the *Rural Rejuvenation Act* in that year which aimed at the commercialization of farmland. The members of TRF form a community network in support of smallholders' economy, sustainable farming and food sovereignty. With the diverse backgrounds of its members, the organization raises awareness among Taiwanese society of the values of agriculture's multi-services through their different actions, from theoretical discourse to village operations. The organization is determined to realize sustainable existence on the island of Taiwan. Its goal is to safeguard rural areas however it has drawn the participation of citizens of many different backgrounds. It also uses farming as an entry point to bring young people to the countryside and to learn from the farmers. Apart from that, TRF helps farmers to organize cooperatives and to develop diverse marketing channels, while emphasizing the role of young people. Che Fen-yu, leader of the program, said: "At this stage, middle-aged and elderly farmers are the main force in the field, but young people are playing the role of liaison and building links with people from all walks of life. The role they play is indispensable."⁸

Hong Kong

Struggles for land justice in Hong Kong have been the impetus for a group of young people who started to organize. Fighting for Choi Yuen Village to prevent it from being demolished was the core action of a movement against the high speed railway in 2008. They realized that the development of Hong Kong had eroded the land in the countryside, holding agriculture in contempt. People started to discuss what sort of life they wanted to have. In this process, young people known as the 'post-80s' carried out a procession in Central District, the heart of Hong Kong's urban area, holding rice in their hands and kneeling down and touching their foreheads to the ground after each step they took. This ascetic action aroused a very strong response from the larger society. The Land Justice League (LJL) was set



Farmers market in urban surroundings

up later to monitor plans for land use in Hong Kong to try to ensure that it is fair, just and ecological. In some villages, people started to practice organic farming. As an example, people from Choi Yuen village started to fight for the right to farm and held the banner of San-woodgoon.⁹ They produced their own food to demonstrate the meaning and importance of life based on farming culture. The Land Justice League is formed by different organizers and groups who are concerned

with different agendas related to land in Hong Kong. The organization actively supports the fight against forcible relocation as well as conservation campaigns in all districts of Hong Kong. It promotes the development and research in local agriculture and community economy, and nurtures a new generation of builders of democratic communities. The League advocates a symbiotic relationship between the rural and the urban, environmental protection, residential rights and implementing democracy in town-planning. They fight for the end of collusion between the government and the businessmen. The CSA practices in Hong Kong have increased and more urban dwellers are now embracing farming culture.

Mainland China

Beijing Farmers' Market: Established in 2010, the NPO Beijing Farmers' Market runs as well a weekend market and serves as an information hub for sustainable agriculture and food systems. Chang Tianle, one of the founders, coordinates the markets and is responsible for public relations and strategic planning. The organization aims to engage consumers and producers in direct trade and ultimately mobilize both producers and consumers to form a sustainable and fair food community. Their mission is to improve the livelihood and health of farmers, contribute to rural development, reduce agricultural pollution, but also educate consumers about sustainable and healthy food. In addition the organization is organizing seminars and community meals, trainings and farm trips to support and promote food sustainability, as well as to introduce new ideas and practices to achieve that goal.

For an overview on CSA farms in mainland China see Food Safety Newsletter No. 1-3, EU-China Civil Society Dialogue (ed.) 2012: http://www.eu-china.net/upload/pdf/materialien/2012-04_Food-Safety-Newsletter_1-12.pdf, http://www.eu-china.net/upload/pdf/materialien/12-08-14_Food_safety_newsletter_2.pdf (comment by editor)

Conclusion: "Taking root"

Farming culture (*nong*) has been revived in some rural communities over the last one or two decades. Beside the examples given above, there are various

other examples: The mainland China NGO Guangxi Ainong Hui, which uses a restaurant as its practice

*When roots grow from farming culture (nong), life thrives.
Even when there is unforeseen stormy weather, life continues.*

platform, mainland China's Liang Shu-Ming Rural Reconstruction Centre that has been advocating rural regeneration all over Mainland China, Chi-Mei Community University, which is Taiwan's first community university rooted in the rural area, and Greenshop, which builds links with organic farming by organizing Hong Kong's grassroots women in food processing activities, and so on.

(New) 'Farmers' who are operating in this space include elderly people, children, university students, workers, young office clerks, housewives, teachers, artists, etc. The functions of farming culture are not limited to food production. They also involve improving the environment, building relationships and communities, reforming customs, building values.

This movement is also inspired by Waldorf's ideas of anthroposophy (optimizing physical and mental well-being) which involves building education on the close relationship between human beings, nature and everyday life.

Annotations

1. This is an abridgement of the article written by Chan Shun-hing, "Understanding anew the value of an everyday life with its roots in nong", in *Touching the Heart, Taking Root – CSA in Hong Kong, Taiwan & Mainland China*, published by Partnership by community Development (PCD), Hongkong, 2015, pp. 8-19.

2. Translator's note: *nong* is a Chinese word that can mean farmers (*nong min*), rural area (*nong cun*) and agriculture (*nong ye*).

3. Under the 'grain for fertilizer' policy, the KMT government disbursed fertilizer to farmers in exchange for rice. In this way, the farmers provided the government with a form of tax which was then used to develop industries. It was considered unfair that farmers had to sell their rice to the government at 20% lower than market price when they wanted to buy the fertilizer, the marketing of which was monopolized by the government. In other words, under the terms set by the government, fertilizer was over-priced while rice was underpriced. For example, in the 1950s and 1960s, Taiwanese farmers paid a price that was 50% higher than that paid by Japanese farmers for ammonium sulfate, a fertilizer that was used most in the fields in Taiwan. This shows the large amount of tax revenue that the Taiwanese government acquired through this policy. See Hsiao Kuo-ho (1991), *The Rise and Fall of Taiwan's Agriculture in 40 Years*, Taipei: Independent Evening News, p. 86. (In Chinese)

4. According to statistical reports, in 2007, Taiwan's food self-sufficiency rate fell to a historical low of 30.6%. See Tsai

Pei-hui (2010): *Behind The Rape Flowers Fields: Structure of Agriculture and Food Security*, The New Messenger, Issue no. 120 (September, 2010) (Chinese), unpublished manuscript

5. Wen Tiejun (2009): *The Three-Dimensional Agrarian Issues and Structural Change*, Beijing: China Economic Publishing House, p. 18 (In Chinese).

6. Community Supported Agriculture (CSA) is translated into *shequ xieli nongye* by the NGO Taiwan Rural Front and into *shequ huzhu nongye* by NGO Little Donkey Farm in Beijing. In the first translation, *xieli* means 'joining in common effort' and the whole term reads as 'community joining in common effort for agriculture, while in the second translation, *huzhu* means 'mutual help' which renders the meaning of the term as 'community and agriculture are in mutual help'.

7. Chen Meng-Kai (2012), *Hope and Community Supported Agriculture*, September No. 10, 2012, p. 1. Translator's note: He Pu, which is the name of Hope in Mandarin, is made up of two words that mean 'cooperation' and 'simplicity' respectively.

8. Chen Fen-yu: *Youth Practice in the Small Farm Rehabilitation Scheme*, International Seminar on Rural Community Development and Taiwan Rural Sociology Society Annual Meeting, 2011.

9. Translator's note: 'Sanwoodgoon' is Cantonese transliteration which means a venue of everyday life.

5. The Chinese CSA Movement gaining momentum

By Yifan Jiang

The Chinese government has been very cautious in reforming its agriculture and land policies. Unlike the radical reform proposed by the free market advocates in which the urban-rural divide is completely dismantled, rural land is privatized and commodified, the current system maintains the collective ownership of rural land and an agriculture sector based predominantly on the Household Responsibility System.

Food self-sufficiency and a social safety net against economic cycles in the urban sector are key concerns behind such arrangements. Yet, the radical urbanization and industrialization that the state is determined to pursue require an agricultural sector sustained by a much smaller but way more productive labor force. To achieve this, the state encourages the transfer of land contract rights (a usufruct) from peasant households to larger operators (see also chapter 6). Though the intention is to promote the so-called *Moderate-Scale Management* with an area of 6-7 hectares, it actually results in a concentration of land.

In April 2015, the Institute for Rural Development at the Chinese Academy of Social Sciences pointed out that a significant proportion of agrarian land is transferred to urban industrial capitals and warned that these capitals' focus on cash crops might pose a threat to



Millet cash crops

food security. A media investigation recently revealed that urban industrial capitals' thirst for land is rapidly inflating the land price in Hebei Province. Lacking adequate knowledge and experience in agriculture, some vast monoculture projects failed so miserably that their investors are breaching their land transfer contracts with villagers.

But in general, the country calls on many years of experience regarding large scale agro-businesses. Indeed, the development of a modernized, high technology and industrial scale agriculture always been high on the agenda in the state's agricultural policies. Large scale projects are welcomed by local governments and are privileged to enjoy favorable policies and subsidies, while small family farms are neglected in such support. This tendency is intensified at a time when more and more investors, both domestic and foreign, are seeking high investment returns in the face of China's rapidly growing demand for high value agro-products against a gray backdrop of endangered food safety.

In 2008 and 2009, a foreign private equity firm invested 150 million USD in total to a leading Chinese industrial dairy farming corporation. When it sold its shares in 2013, it got a return three times what it invested, and it went on to invest in the Chinese meat industry.

In August 2014, a news report about this success was concluded with the following remark: "There is a serious food safety issue in China, the fragmentation of the sector makes the quality of meat and vegetables permeated with risk. The more improvement China's food safety need, the greater the investors' return will be."

Only three month later, in November 2014, a series of scandals broke out in three of the aforementioned dairy enterprise's "ten-thousand-cow" farms. The first one was related to pollution caused by its reckless ani-

mal waste disposal, the second to illegal selling of sick cows and its employers contracting anthroponosis. The third scandal was a spectacular two-week-long siege by protesting local villagers against the polluting animal factory. It was regarded as a huge irony, but still not big enough to turn the tide. The report's conclusive remark is still a common way of thinking of both ordinary people and the state alike. Actually, to merge and consolidate the dairy industry was exactly the solution prescribed by the authorities after the famous melamine-contaminated milk incident.

Meanwhile, China is ever more deeply entangled in the global agricultural market, and not without consequences. Soybean is a telling example. As the country of the crop's origin, 80% of China's soybean consumption is now relying on import, and more than 60% of soybean international trade goes to China. Being soybean-dependent, China can do nothing but accept the world price set by the world, which has skyrocketed in recent years. Another example is again in the dairy sector. In late 2014 and early this year, a wave of milk dumping and cow slaughtering by dairy farmers in northern provinces alerted the society to pay heed to the impact of cheaply imported dairy products on local production.

To the general public, agriculture is not much more than production of food, and the problem our agriculture faces is the safety of the foods it produces. Such concern is a consequence of continuous food scandals, such as melamine and aflatoxin contaminated milk, excessive chemical and antibiotic residues. It is even reflected in the emergence of a new journalistic category called "food safety reporting." But the deep and widespread concern for food safety hasn't been adequately translated into a reflection of the current food system. This is also mirrored in the journalistic professionalism which does a good job in uncover food scandals and concerns but fails to highlight the structural flaws in the food system of the world's most populous country.

Since ten years ago, a CSA movement has been attracting those who see the structural pitfall and want to make a change. Though it is far from being influential, the movement is gaining momentum. In China, the term "community supported agriculture" is used to describe something broader than its definition in Europe, where it means a particular contractual relationship between a farm and its supportive, risk-sharing off-farm members (regarding a better world for "consumers"). In the

context of the Chinese movement, it includes other initiatives which create communicative and collaborative producer-consumer relationships like farmers markets, educational farms, rural development NGOs and social enterprises creating better market access for farmers and food artisans, etc.

The main propellers of this movement are two traditions: the rural construction movement and the environmental movement. The former is an intellectual-led rural social development movement which has its early precursor in the 1920s and '30s. The latter is probably the strongest movement in China's third sector; it sees it imperative to control synthetic chemical use in agriculture if the country is to meaningfully protect its environment. Both try to establish an alternative market for family-based ecological farming to thrive. The two are joined by young "new farmers" who value a rural way of life and dream to make their own fortune with ecological farming, and consumers who not only want good food, but also cherish the ideas of reciprocity, fairness, and ecological sustainability.



Courtyard combines everything you need including kitchen garden and stables for the animals

The outlook of this movement is well beyond food safety, it voices vocal criticisms of the capitalistic food system, and emphasizes peasant livelihood, rural development, multi-functionality of agriculture and ecological sustainability. But certain perspectives are still absent from its discourses, such as activities like international trade, meat production, energy crop production, and consequences like the spreading of monoculture, poor animal welfare, climate change, land-grabbing, etc. It is not because China is free of these issues, but because the movement has yet to contextualize itself in the larger social-political setting.

6. Is China Fading-Out Smallholder Farming?

How a New Market for Farmland has become the Basis for Commercial Agriculture

By René Trappel



Industrial agriculture in Shandong

Introduction

For the third time in less than a century, agriculture in China is experiencing tremendous structural changes. After the collectivization movement in the mid-1950s, and the de-collectivization in the early 1980s, now commercial and industrial agrarian production structures are mushrooming everywhere in the countryside. Villages close to urban centers and regions with small amounts of farmland per family are spearheading this movement. New types of agrarian producers are appearing on stage, from small but specialized entrepreneurial farmers to new types of cooperatives and big agro-industrial conglomerates. As different as they may be in their internal structures, their motivation to engage in farming is similar: profit. Rural China, it appears, is experiencing a transition from smallholder and family farming to commercial and industrial agriculture. In this new world, food is produced for sale and not primarily for direct consumption.

The transformation of Chinese agriculture is taking place in spite of the absence of a private market for farmland and within the fragments of a socialist property regime. Instead of going through a privatization of land as had occurred in locations as diverse as 16th century England, the former socialist countries in Eastern Europe and even in its regional neighbors Vietnam and Cambodia, China started its transition with its own variant of a collective ownership framework for farmland that is still in place. The Chinese leadership decided in the early 1980s to hand out land usage rights to households under certain conditions, which were detailed in contracts. This system, frequently called the Household Responsibility System (HRS), was the starting point of smallholder farming in China and continues to exist to the present day. Land usage rights were limited in many ways right from the beginning. Most importantly, these land usage rights could not be traded nor could the villagers legally change the structure of land usage. The rise of commercial agriculture

under such conditions seems unlikely but is very tangible in the Chinese countryside. How could this happen?

Setting the Stage

The basis of the new dynamic of the Chinese transition to commercial agriculture is an emerging rental market for agricultural land. Key elements that structure this rental market are 1) peasant differentiation, 2) rural politics and 3) the legal framework for land usage rights transfers (*tudi liuzhuan*, land transfer in the following).

The three pillars of the Chinese transition

1) **Peasant differentiation** took off when the boom of smallholder farming in the early 1980s, initiated by high farm gate prices and new opportunities created by individualized access to farmland, came to an end with the 1985/6 inflation and concurrent political reforms of the procurement system. Since then, smallholder farming in China has been in a tight spot (with considerable regional variance). At the same time, better-earning urban employment opportunities began to emerge even for unskilled workers. Many smallholders have given up on farming or are about to; they now face the dilemma of what to do with their land usage rights. This forms the basis of an emerging rental market for agricultural land usage rights.

2) **Rural politics** may have great influence on the viability and the nature of agriculture. Recently Beijing has taken a renewed interest in agriculture and the Chinese countryside. Under the headings of *Building*



Boundary stone for paddy fields

a New Socialist Countryside and Rural-Urban Integration, several reforms also address the modernization of agriculture. Policies to promote commercial and industrialized agriculture seem to be rather welcome by rural local governments at the township and county level. These policies offer them funds and opportunities to excel in the annual evaluations.

3) The **legal framework** surrounding the HRS and land transfer is the third major pillar of transformation of agriculture in China. Three major themes can be identified in the reforms of the legal framework of collective land in China since the early 1980s.

a) The first theme in rural land administration has been the continuing effort to install the HRS as the main point of reference for agricultural land usage and the **strengthening of villagers' rights to access land for farming** through this system. In 1986, the first Land Administration Law (LAL) established a legal framework for the then still new HRS. Subsequent reforms all emphasized the importance of the HRS to protect the interests of rural households. For example, the 'Opinion Regarding the Work to Complete in Agriculture and the Countryside in the Year 2001' called for bold structural changes in Chinese agriculture but also emphasized that all of these changes needed to take place in accordance with the HRS. In 2002, the Law on Contracting Rural Land (LCRL) further improved the legal framework of the HRS and specified the conditions under which contracted land is returned to the collective.

b) The second major theme in rural land administration has been the intention to **protect farmland for later agricultural usage**. Collective ownership turned out to be a weak defense against land grab. Local governments have been continuously requisitioning collective land and transforming it to state ownership. This allows a change of land use and a subsequent sale to real estate developers. The enormous profitability of this process, also related to ridiculously low compensations for the collective owner and the household holding the land usage rights has become a major risk to the future of Chinese agriculture. Already the 1986 LAL requires the introduction of land usage master plans that were supposed to guide all land conversions and help to economize land usage. This seems to have produced insufficient results, as the 1994 published 'Basic Regulations for the Protection of Farmland' and the 1998 Revision of the LAL also called for a better protection of

the land. In 2004, the State Council then published the 'Decision of the State Council to Deepen the Reform of a Strict Land Administration,' which demands the "strictest administration and control of the usage of farmland possible." Finally, in 2008, the 'Decisions of Central Committee of the CCP Regarding Several Big Issues in Pushing Forward the Reform and Development of the Countryside' introduced the so-called Red Line, a minimum reserve of 1.8 billion mu (about a 120 million hectare) of arable land in China that should be preserved for agriculture under all circumstances.

Foster commercial agriculture

The third theme in the legal reforms for rural transformation is the will to **make farmland more accessible for commercialized agriculture**. Already the 1988 Revision of the LAL legalized renting out land usage rights. Another important step was the No. 11 Document of 1993, which fixed land usage rights for 30 years. Before this reform, cadres had the right to redistribute farmland, officially taking into account changing household compositions among the villagers. In the aftermath of this policy collective farmland lost much of its collective character and became an individualized asset for households. The 1993 Agricultural Law (AL) reinforced this process with regulations that suggest that a former contractor should receive preferential treatment if land is redistributed (in case the timeframe of the original contract has ended) and that the contractor's family would receive his land usage rights in case he or she dies. This individualization of access to land must be seen in light of the new efficiency debate in agriculture. Documents such as the 2001 Opinion mentioned earlier made clear that Beijing did not see the smallholders themselves as being able to provide the much-needed impetus for structural change in rural China and that **new actors in agriculture with flexible access to farmland would be necessary for the creation of commercial agriculture**. Long-term fixed individualized land usage rights did provide a basis for a market-based exchange of access to farmland.

The 2002 LCRL then introduced an improved institutional basis for land transfer activities. It defined four modes of land transfer (subcontracting, lease, exchange and transfer) and left room for further experiments. The 2008 'Decisions of Central Committee of the CCP Regarding Several Big Issues in Pushing For-

ward the Reform and Development of the Countryside' is **the latest move forward for the commodification of farmland in China**. While the importance of the HRS to protect the interests of farmers and to stop land loss is mentioned prominently in the 2008 Decisions, the current distribution of farmland, described as scattered and fragmented, is seen as being unsuitable for the creation of a modern agriculture (the Chinese notion of a modern agriculture centers on modernization, efficiency, quantity and increasingly quality and differs at times considerably from the current debate in the West). Therefore, the 2008 Decisions call for the "creation of a 'perfect market' for the transfer of land usage rights" (*jianli jianquan tudi chengbao jingyingquan liuzhuan shichang*) that aims to reduce the high transaction costs for land transfer in order to ease access to farmland for commercial farmers.

These policy trends have been reinforced at the 3rd Plenary Session of the 18th Central Committee in November 2013 with its focus on strengthening the market. The central committee, the highest decision-making body of the CCP, meets once a year in the so-called Plenary Sessions – the third one usually reserved for the outline of the plans for the economy.

The Rise of a Land Rental Market in Rural China to push economic growth

Next to the informal rental arrangements among villagers, friends and kin (*sixia liuzhuan*), the directly bargained contracts between the households and a commercial tenant are the second largest part of the emerging land rental market. More recently, several new policy tools to promote land transfer have been established in the countryside by local governments, who, among other things, want land rentals to push economic growth. The following section will briefly introduce contract-based exchange and some of the new policy tools for land transfer.

Fieldwork in Sichuan, Shandong and Guizhou Provinces suggests that there are certain common patterns in contract-based land transfer. On average, the annual rental fee in all contracts has fallen within a span of between 300 to 500 RMB per mu in 2010 (about 42–71 € per 1/15 of a hectare) with a few cases below and

Temple for deity guarding soil in Sichuan province



above that figure. This is ten to twenty times less than the annual profit (not revenue) agricultural investors expect, as mentioned by local officials. Most of the contracts have a very long timeframe, that of twenty years being much more likely than that of five years. Within this timeframe, the villagers have no option to get their land back and return to farming. The land is effectively gone.

Furthermore, most contracts include several clauses that are disadvantageous to the villagers and in favor of the new tenants. It appears that the intention of these clauses was to limit the risks for investors – for them it seems much easier to terminate the rental relationship.

A township in Sichuan is the site of such a land rental contract. In this arrangement, some 40 households (and 51.6 mu/3.44 hectare) from four natural villages take part. The contract states that the villagers discussed and agreed to rent out collective land to Company A, an agricultural development company from Suining. The land is supposed to be used for creating a pig husbandry and the contract has a timeframe of 20 years.

Among other things, the contract prohibits the village from installing another similar-sized breeding facility or other potentially polluting enterprises within a 3 km radius. The rental fee of 400 RMB (about 56 Euro) per mu/year must be paid by the company only once every five years and is increased every five years by 8 per-

cent as an adjustment for inflation. Furthermore, the village must construct a road to the main entrance of the breeding facility. Villagers are not allowed to grow in the fields nearby or to disrupt the company in any other way. The village must compensate the company for any harm caused by villagers. If the village breaches the contract, it must compensate the company for all investments taken plus an additional 200,000 RMB (about 28,570 Euro), or about ten years of all rental fees combined. In turn, if the land is not restored to its previous state when the contract ends, the company must pay the villagers a compensation of 200,000 RMB (about 28,570 Euro). If the company does not pay the rental fee on time, this is considered a breach of contract. In such a case, the villagers have the right to terminate the contract and seek an investigation into the responsibilities of the company. No financial compensation for such a case is mentioned. There is no requirement to hire the villagers as workers for the new pig husbandry, as there had been in other similar arrangements.

Taking Land Transfer to the Next Level: Direct arrangements become indirect

Arranging and monitoring these contractual arrangements between households and companies has large transaction costs. Local government sites have therefore experimented with new policy tools to **ease land transfer and to mitigate potential tension**. Among

these policy tools are land transfer cooperatives (*tudi liuzhuan hezuoshe*), specialized cooperatives (*zhuanye hezuoshe*), land transfer service centers (*tudi liuzhuan fuwu zhongxin*), and land shareholdings (*tudi rugu*).

They share three basic characteristics:

1) Even after more than 30 years they are still based upon the HRS. Accordingly, the conditions for the transfer of land outlined within this legal framework also apply to each of these instruments. This entails a standardized contract between the party with the land usage rights and the party interested in renting out the land, similar to the case introduced above. All of the core aspects of the land transfer such as the compensation payment, the duration of the transfer and the rights of the sub-contractor must be fixed in this contract.

2) The second shared characteristic of these new instruments is their explicit focus on long-term and large-scale transfers (*guimo liuzhuan*). Beyond the transfer itself, the concentration of plots into one bigger holding is another major goal.

3) The third aspect in these new forms of land transfer is the pro-active role of local governments in facilitating every step of the land transfer process.

However, there are also important differences between these instruments. Whereas land transfer cooperatives, specialized cooperatives and land shareholdings establish an intermediary organizational body between the lessors and the tenants, land transfer service centers aim to facilitate the direct exchange between lessor and tenant.

Replacing Smallholders?

In most rental arrangements, the new tenants seem to have a dominant position. The land is cheap and the conditions of the contracts are formulated in their interest. At the same time, there was no evidence suggesting that villagers had been forced into accepting these contracts. How can we explain this dominant position of the new tenants?

a) Competition for farmland: Different property regimes (socialist administrative property rights and private usage rights) and ultimately different actors compete for the management of farmland. A layer of tradable usage rights has been installed on top of existing socialist property institutions. Administrative rights of the village-, township- and county-level governments, owner rights of the village collective and user rights of individual villagers now compete with each other. This configuration and the different rates of profitability attached to these rights affect the bargaining position of the involved parties in the rental market.

b) Peasant frustration: Many villagers lack the means to turn their smallholding into a profitable business. Therefore, they either become part-time farmers or leave farming altogether. In the latter case, they struggle to find good use for their (agricultural) land usage rights. Villagers are not allowed to transform farmland to non-agricultural use, nor can they directly sell their underused land to development agencies. If they have no interest or resources to farm themselves (perhaps because they migrated to the cities in search of higher incomes) then the new rental market is their best option to gain at least some financial benefit from their collective land usage rights.

c) New policy tools ease land transfer: Through the structure of the new policy instruments that have been created to facilitate the transfer of farmland to commercial investors and widespread peasant frustration with the conditions for small-scale family farming, a massive surplus of rentable farmland exists, from which investors can cherry-pick land at the conditions and prices they want.

The central state is well aware of the smallholders' difficulties and their frustration with the limited utility of their land. However, the current situation attracts new investors in agriculture and this is a development that both local governments and Beijing appreciate as it may lead to more economic growth. The central governments' solution for the difficulties of the smallholders is drastic and obvious from the central theme of the third plenary session of the 18th Central Committee (November 2013) and subsequent policy documents: urbanization. Given these developments, smallholding in China faces a bleak future.

7. Chinese agri-food systems and the question of Sustainability

By Adrian Ely, Sam Geall and Yiching Song

Credit: This article is an abridged excerpt from the STEPS Working Paper *Pathways Towards Sustainable Maize Production and Consumption in China: Prospects, Politics and Practices* by Adrian Ely, Sam Geall and Yiching Song.¹

China is home to around one-fifth of the world's population but only 8 percent of its arable land. Famine, scarcity and rationing are all-too-recent memories for the country's leaders and many of its people; feeding China is hardly a matter of policy alone. The Chinese government sees avoiding food scarcity as one of its highest priorities in order to maintain legitimacy, public trust and social stability, and it is considered one of the greatest achievements of the Reform Era².

National policies focus on food security

Agri-food systems are thus one element comprising the very constitution of power relations in China, which are in turn representative of China's contemporary social formation. Great emphasis has thus been placed on ensuring effective supply-side food policies throughout the past few decades. National policies on agriculture focus on production, including investments in chemical fertilizers, pesticides, irrigation and high-yielding seed varieties, but they also include the use of strategic reserves and export restrictions for staples, although rising demand means food and, particularly, feed imports have risen significantly. China's reliance on feed exporters, including maize and soya from the USA and Brazil (for both of which China is now the largest importer of their agricultural produce), has burgeoned alongside the country's livestock sector. With overall grain self-sufficiency now less than 90 percent, well below the target of 95 percent, it has led some aca-

demics to suggest controversially that China, „[...] no longer considers food security as one secluded country [...],³ and that its traditional policies of grain self-sufficiency might have been loosened or abandoned at an elite level. In any case, the centrality of agricultural policy for government decision-makers is indicated by the fact that in 2014, for the 11th year in a row, China's first central policy document of the year, called the *No. 1 Central Document*, concerned rural reform and development.

Large scale industrial pork production as the backbone of a “modern agricultural system”

The avoidance of food scarcity in the Reform Era has been characterized by, or even depended on, a huge increase in the production, sale and consumption of meat. Since 1980, the average *per capita* meat consumption in China has quadrupled, although there is a particularly urban concentration of meat consumption. The country has seen a massive rise in pork production and consumption, and pork has a great cultural and historical significance in China. The country has seen a five-fold increase in pork production since 1979 (FAO, see Figure 1), making China the world's largest producer and consumer of pork, with over half the world's pigs now living in China. With the aim of creating protein-rich, modern diets for urban middle-class consumers in particular, the Chinese government in the Reform Era has supported medium to large scale industrial pork production through subsidies, investments and preferential policies, particularly in the promotion since 1998 of ‘Dragon Head Enterprises’ to lead the consolidation of the agribusiness sector. According to the State Council in 2012, these Dragon Heads are. [...] the major agents for constructing a modern agri-

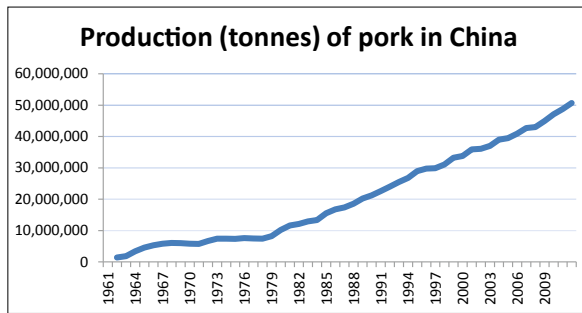


Fig. 1: Production (tonnes) of pork in China, 1961–2011
Source: Food and Agricultural Organization of the United Nations, Statistics Division (FAOSTAT)

cultural system, and are the key to advancing agricultural industrialization⁴.

Agriculture proves biggest source of non-point pollution

This rapid expansion of agricultural production and industrial meat agriculture has had a significant environmental footprint in China, in the forms of soil and water pollution, as well as greenhouse gas emissions. Agriculture is a major source of nutrient and mineral pollution in China's water. Studies have found that livestock waste, in particular, is a large contributor to the substantial emissions of nitrogen, phosphorus and heavy metals including copper and zinc in China's water supplies. In 2010, a pollution census found that livestock was the largest contributor to run-off pollution from land into waterways in China. Livestock manure is responsible for 38 percent and 56 percent of the total nitrogen and phosphorus discharges into China's surface waters, respectively, where inorganic phosphorus is often added to pig feed. Overuse of nitrogen and phosphorus fertilizers is also common.

It is not surprising, therefore, that the annual assessment for 2012 from the Ministry of Environmental Protection concluded that the, [...] rural environment is very grim [...], with more than ten per cent of China's river water quality rated worse than Grade V, the most polluted grade⁵. Harmful algal blooms caused by an excess of nutrients, particularly phosphorus, are increasingly common social disasters, as much as they are environmental problems, severely affecting local water supplies, even leading to the cut-off water sup-

plies to entire cities and runs on bottled water. Wang Shiyuan, vice-minister of land and resources, recently said that about 3.33 million hectares of China's farmland are too polluted to grow crops and the Ministry of Environmental Protection announced in April that one-fifth of China's arable land is polluted to some degree. Contaminated land and water have thus led to an increasing focus on how the sustainability of Chinese agriculture may affect food safety and security, although elite and popular responses differ in their proposed solutions.

Environmental protection finding its way into national agricultural policy

China's No. 1 Central Document (see above) concerning rural reform and development outlined 'the importance of environmental protection' and at the Communist Party's November 2013 Third Plenum, it was proposed that China's 'red line', which states that 120 million hectares of arable land must be maintained for food security, be matched with an 'ecological red line' that should ensure protections from pollution and development. This concept later became an aspect of China's revised Environmental Protection Law that, according to one of the law's authors, reflected 'the Government's intention to hold onto 'ecological security' baselines'.⁶

Smallholder farmers blamed for food scandals

However, despite the role of the rapid expansion of China's industrial agri-food system in driving pollution and associated food safety problems, Chinese policymakers also see a move from small-scale towards industrial pork production as the solution to food safety problems, echoing a popular discourse that equates industrial agriculture with modernization and development, while blaming smallholder farmers for food safety scandals⁷ This reflects a 'strong consensus within Chinese policy circles that increasing the scale of production can help in addressing environmental impacts', by allowing the application of 'precision management techniques' as well as facilitating

better inspection and regulation⁸. Garnett and Wilkes conclude, however, that there is 'only limited evidence' that larger-scale land holdings result in improved nutrient use efficiency or that larger-scale livestock operations have lower emissions per unit of output. They note, for example, that specialization rather than scale, may be the key to environmental good practice in China's livestock operations.

Agriculture and Climate Change

Furthermore, industrial agriculture is a major contributor to climate change. One estimate from the World Resources Institute suggests the agriculture sector accounted for 8 percent of China's greenhouse-gas emissions in 2009. Such estimates vary depending on how the boundaries of the agriculture sector are defined, but methane from enteric fermentation from livestock and CO₂ from synthetic fertilizer production and use are the largest sources of agricultural greenhouse gas emissions. In 2005, according to the NDRC, direct emissions from livestock production and manure management contributed about six percent of China's total greenhouse-gas emissions, while life-cycle assessments of large-scale pig farms in China suggest that feed production accounts for 81 percent of total livestock-related emissions, accounting for around 10 per cent to 15 percent of China's crop-related emissions⁹.

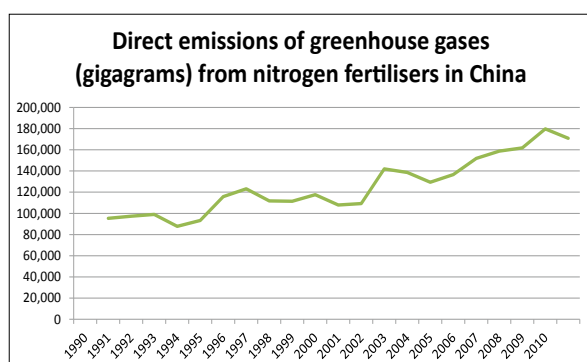


Fig. 2: Direct emissions of greenhouse gases from nitrogen fertilizers in China, 1991–2011

Source: FAOSTAT

One source estimated that for every ton of nitrogen fertilizer manufactured and used in China, 13.5 tonnes of CO₂-equivalent gases are emitted, compared with 9.7 tonnes in Europe¹⁰. According to Garnett and Wilkes

there are three main reasons for this large contribution from fertilizers: the 'relatively inefficient technologies' widely used in fertilizer manufacture, with coal as the main energy source; the urea fertilizers that tend to be used in preference to ammonium nitrate; and the substantial over-application of fertilizers. FAO statistics show an increase of 79 percent in total emissions from the manufacture of nitrogen fertilizers over the two decades towards 2011 (see Figure 2). This is before one considers the climate-change effects of wider changes in the food retail sector, particularly the 'supermarketization' of food retail and its relationship to changes in food storage (such as refrigeration), food transport and imports, patterns of urbanization and changing mobility practices.

Growing concerns about food safety

In recent years, concerns have increased about environment and health issues, particularly (though not exclusively) among China's newly enriched middle class, with opinions expressed more freely and rapidly than ever before due to increasingly ubiquitous social media and messaging technologies.

Perhaps most striking in recent times has been the social and political effect of problems with China's food safety, from heavy-metal pollution and contamination by pesticides, veterinary drugs and food additives to the Sanlu milk scandal of 2008, when melamine-contaminated baby formula led to the deaths of six infants and made around 300,000 children ill. In Spring 2013, the sight of more than 10,000 pig carcasses floating down the Huangpu, the main river that feeds Shanghai, provoked not only understandable shock and revulsion, but also deeper questions about risk, directions of development, transparency, participation, accountability and governance.

The social and political implications of a decline in social trust, affected not only by the scale of the food safety problem but also the dynamics of a fragmented environmental governance and the unprecedented pluralization of sources of information brought about by a changing media sphere and the Internet and constitutes an important background to both the elite narratives of China's prospects for low-carbon innovation,

and also to the emergent popular discourses around sustainability.

Annotations

1. Ely, A., Geall, S. and Song, Y. (2014) Pathways Towards Sustainable Maize Production and Consumption in China: Prospects, Politics and Practices, STEPS Working Paper 72, Brighton: STEPS.

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9. Garnett, T. and Wilkes, A. (2014) 'Appetite for Change: social, economic and environmental transformations in China's food system', Oxford: Food Climate Research Network, University of Oxford, pp. 60–62.

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No. 1 Central Document

2015 Chinese government's policy again puts their focus on agriculture

Document No. 1 (Central Document No. 1) is the first governmental declaration presented each new year, outlining the political priorities for the year to come. Since 2003, the focus of the Document No. 1 has been on agriculture with three key focus areas: agriculture, the development of rural areas and the situation of the peasant population. The document is published annually by the Central Committee of the Communist Party of China and the State Council.

On 01 February 2015, this year's statement was published.

Among the key points of the document are the agricultural reforms that will allow for the modernization of farms and rural infrastructure. Also ensuring the food security and thus the necessary protection of arable land is again one of the core issues. Through so-called "permanent agricultural land" that should be protected against long-term industrial and urban construction projects, the government wants to prevent the further loss of arable land. This year's plan also contains measures to maintain soil fertility. Through private investment in rural areas and favorable financing assistance for Chinese farmers, the existing urban-rural gap is to be compensated. The farmer-community promotion activities aim to increase the income of farmers. The Chinese government has set out to develop the infrastructure in the countryside for electricity and water networks and to introduce alternative energy sources (wind and solar energy power stations).

Another important point of this year's Doc. No. 1 is the strengthening of the legal basis in rural communities. Above all, the protection of rural property rights, the regulation of rural markets and the introduction of farmer-friendly social policies aimed at improving the legal position of farmers. All these measures aim at a modernized agriculture; the improvement of food quality and the living conditions of farmers should likewise increase.

Source:

Ministry of Agriculture of China: http://english.agri.gov.cn/news/dqnf/201502/t20150203_24952.htm

Reuters: <http://uk.reuters.com/article/2015/02/01/china-agriculture-idUKL4N0VB0BD20150201>

8. The challenge of water scarcity for Chinese agricultural development

By Eefje Aarnoudse und Lena Kuhn

An important share of China's food crops is produced in northern China, where rainfall is scarce and most crops are irrigated. As the region is confronted with growing water scarcity, new water management strategies are shaping agricultural development and may especially impact small-scale farmers.

The importance of irrigated agriculture in northern China

Despite growing agricultural intensification and modernization, the bulk of China's agricultural production is still dependent on small-scale family farming. The national average farm size was still at only 0.16 ha per person in 2013.

Whereas the size of a farm tends to be slightly larger in northern China, even here agriculture is often still done in a household-based fashion with little assistance from agricultural machinery.

Despite this, China's agricultural productivity has doubled over the last 50 years, partly due to the dismantling of farm collectives and households regaining the right to produce for the market. But for the most part, the rise in production is also due to increased fertilizer input and the expansion of irrigation infrastructure. China's irrigated agriculture quadrupled from 15 million ha in the 1950s to 60 million ha by 2010.

Two-thirds of the irrigated agricultural area is located in northern China¹, where annual rainfall is low (see figure 1). Currently, the largely irrigated northern Chinese provinces account for 70% of the national wheat production, 85% of the national corn production and 40% of the national area cultivated with vegetables.

Northern China thus delivers a vital contribution to China's national food security.

Until recently, China's rising agricultural productivity could keep pace with the growing demand caused by population growth. However, the increase in average incomes has led to fundamental dietary changes in the past years. Growing consumption of meat products and the associated increase in demand for livestock feed puts considerable pressure on agricultural production.

Growing stress on water resources threatens food self-sufficiency

While China's agricultural demand keeps rising, northern China is confronted with growing water scarcity. One of the causes is the continuous expansion of irrigated agriculture through the construction of dams and the drilling of wells. Since the 1950s, more than 85,000 dams have been built, mainly in northern China. With the economic reforms and opening of China start-



Closed Well



Building a water saving society

ing in the 1980s, new investments further increased the storage capacity of the existing dams. The development of mechanized groundwater pumping began in the 1970s and provided an additional boost to irrigated agriculture. By 2010, around 5 million tube wells for irrigation were in use in northern China.

Whereas the agricultural sector is withdrawing the largest amount of water, cities and industries are heavy polluters. Wastewater dumping by cities and industries as well as the use of pesticides and fertilizers in agriculture has led to alarming water pollution rates. In 2011, 17% of China's river water was found to have reached the highest pollution rate (China Water Resources Bulletin 2011). This water is unfit even for agricultural production and can thus be regarded as lost, increasing overall water scarcity. Groundwater resources are less well monitored, but show similar if not worse pollution rates².

The over-exploitation and pollution of water from rivers and aquifers over the last decades has caused severe water stress in northern China. The depletion of groundwater resources is often hidden and long unfelt, but numerous reports of falling groundwater tables are a clear sign of unsustainable use. The depletion of surface water resources is more visible.

The running dry of the Yellow River mouth in the 1990s was picked up as an alarming warning signal. In 1995, a

record was reached as the river bed near the sea ran dry for more than 200 days. Since then, the growing stress on northern China's scarce water resources has received considerable political attention.

The government not only fears the degradation of sensitive ecosystems, but also perceives water scarcity as a growing threat to national food security. Repeated droughts in recent years have reduced wheat and corn yields in northern China. Because of over-exploitation and the pollution of rivers and aquifers, farmers' fall-back options to save their harvest in case of drought are decreasing.

Responses from the government: Water reallocation and water saving to deal with increasing water scarcity

In response to the growing water crisis in northern China, the central government has pursued several water management measures, which will design the future of farmers, their families and livelihoods.

Two main pillars of measures can be distinguished. One is water reallocation, which mainly implies shifting water resources between river basins or from one user to another within one river basin. The other is

increasing the efficiency of water usage – this implies increased productivity per drop of water either measured in monetary terms (\$/m³) or in terms of crop output (kg/m³). Agricultural water use efficiency can also be expressed as the percentage of withdrawn water actually used for crop production.

Water reallocation as a means to increase water supply for urban regions and industry

The relative abundance of water in China's southern regions motivated policy-makers to solve water scarcity in northern regions through water reallocation projects that are implemented by both infrastructural and institutional measures. The construction of large infrastructure is usually required to realize water transfers between river basins. Currently, China has more than 20 major inter-basin water transfer projects, the largest of them – which is also the largest water transfer in the world – being the South-North Water Transfer Project. It transfers water over 1000 km from the Yangtze River to northern China [[see Figure 2]].

The project's largest canal started operations in 2014. However, as with most other water transfer projects, the increased water supply is primarily reserved for

urban and industrial rather than agricultural water use. Moreover, enthusiasm over the project's finalization has been tempered by the pollution problems that have lowered the quality of the transferred water.

Institutional measures have primarily been implemented to shift water between different users within one river basin. For this purpose, new river basin authorities are established and have the mandate to redistribute water use rights. In response to the alarming droughts in the Yellow River Delta, the Yellow River Conservancy Commission was founded in 2000. The new river basin authority implemented a large scale reallocation of water use rights between provinces, which has prevented the occurrence of dry river beds in recent years.

So far, the environment had been the biggest loser in the competition over Northern China's scarce water resources. However, recent reallocations of water use rights often secure the supply to threatened ecosystems, cities and industries at the expense of water rights for agriculture³. Even in the case of the Yellow River Basin, the upstream, western provinces – largely reliant on traditional irrigated agriculture – had to reduce their water withdrawal to secure supply to the more industrialized, eastern provinces. Therefore, water reallocation under the current mode of implementation might not solve but rather exacerbate water scarcity for small-scale farmers.

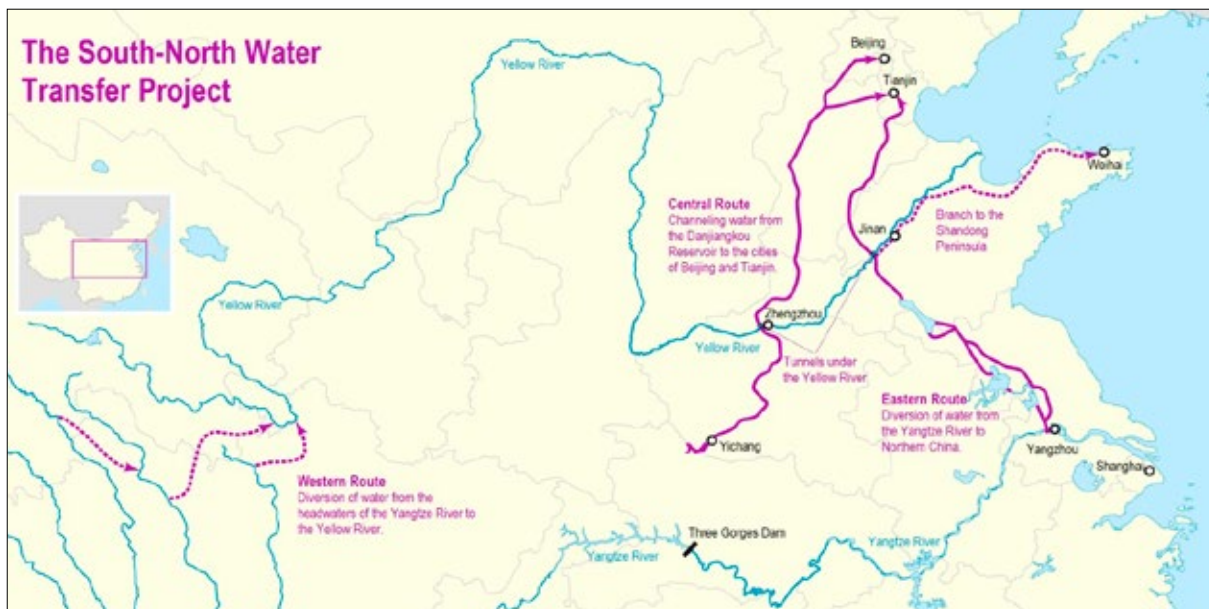


Fig. 2: Map of the South-North Water Transfer Project in China
Adaptation of work by Maximilian Dörrbecker (Chumwa), via Wikimedia Commons, licensed under the Creative Commons Attribution-Share Alike 2.0 Generic license



Adjusting the irrigation canal

Increasing water use efficiency poses a big challenge for small-scale agriculture

In recent years, the Chinese government has tried to shift its focus from increasing water supply to reducing water demand. To achieve this, an important document was issued in 2011 formulating policy directives for the future, whose main components are “three red lines”, which set measurable targets for total water use, water use efficiency and water pollution.

According to those national directives, agricultural water use efficiency should increase from today’s 45 % to 60 % by 2030. Wasteful water use by Chinese farmers is popularly blamed to be at the root of low water use efficiency in agriculture. Yet the new policy document recognizes that water losses are largely caused by inefficient delivery to the farmers. To reduce those losses, the government announced a doubling of investments in degraded irrigation infrastructure over the 2010–2020 time-span.

Nevertheless, the pressure on Chinese farmers to raise their on-farm water use efficiency will continue to grow.

Over the last two decades, the Chinese government has tried to increase farmers’ water use efficiency by raising water prices on the one hand and promoting so-called “water-saving irrigation technologies”⁴ on the other. Although water pricing is a popular measure promoted world-wide, it has been criticized for its function as a new “agricultural tax” in the Chinese context, hindering rather than promoting the development of China’s small-scale farmers. As small-scale farmers often lack the capital to make investments in new technologies like drip irrigation, this means that large-scale, industrial farmers are likely to be favored under the guise of increased water use efficiency.

Implications for agricultural development: Maintaining the balance between agricultural, industrial and urban consumption

The new water management policies will have important implications for China’s agricultural development. It seems obvious that the agricultural sector – as the

single largest water consumer – needs to reduce its water use to alleviate the over-exploitation of northern China's water resources. The question remains who will reap the benefits and who will carry the costs.

A critical look at the recent developments reveals two main challenges that continue to threaten China's food self-sufficiency and farmers' livelihoods.

The first challenge is in making sure that gains from reduced water use for agriculture are not simply gobbled up by growing cities and industries. Whereas the new policy measures have the potential to release northern China's water stress, neither the shifting of water resources nor the more efficient use of water necessarily lead to absolute water savings as long as there is no cap on total water usage. Ideally, increased water use efficiency in the agricultural sector should lead to improved water access conditions like higher groundwater levels, which in return would diminish farmers' vulnerability to droughts.

The second challenge is to maintain rural areas as an attractive living environment where the rural population can continue to make a living. Current policies to increase water use efficiency in agriculture tend to favor investments by agri-businesses and modernized, large-scale farming. Recent experiences show that severe limitations on access to water can be a reason for small farmers to abandon their land⁵. Although the Chinese government has long been hesitant to touch farmers' land use rights and privatize agricultural land, the redistribution of water rights may in the end become a decisive factor. After all, land rights in rain-scarce areas are meaningless without water rights.

Ultimately, China's rising food demand can't be answered through the mere intensification of agriculture, which seems to only accelerate land degradation and the exhaustion of clean water resources.

Instead, the sustainable use of agricultural inputs is of major importance, especially since water scarcity not only imposes limits on agricultural development. Water scarcity also endangers social development as stable water supply is, in the absence of income sources beyond agriculture, the foundation of rural livelihood. To prevent further rural exodus, water resources need to be protected against overuse and pollution by agriculture, industry and cities. Even though water saving is indispensable for dealing with water-scarcity, unbalanced burdens on agriculture that go without appropriate government assistance and disfavor small-scale farmers might further deteriorate rural livelihood and hasten the depopulation of the countryside.

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Modernized irrigation canal

9. Cotton production in China and Africa¹

By Sabine Ferenschild

27 million workers are employed in cotton production worldwide, 99 percent of whom come from developing countries. The production of cotton therefore constitutes an important economic sector in many of these countries. China is a global market leader in cotton production, but the nation increasingly faces a shortage of cultivable land compared to the potential production volume of the Chinese textile and clothing industry. This is why the Chinese interest in African cotton is increasing.

Cotton production in China

China has a total area of 960 million hectares. Out of these, 121.7 million hectares are arable and can be designated for agricultural use. While globally, the share of land used for cotton production adds up to 2.5 percent, in China it totals 6.5 percent. In order to make it possible for cotton farmers to be independent from world market prices, prevent farmers from discontinuing cotton production and secure the national textile industry's demand for cotton, the Chinese government has set a minimum price for cotton which is usually far above world market prices. This price can be flexibly adapted to the current circumstances. Considering that arable land is limited in China, this subsidization policy has put food security for the Chinese population at risk— despite the government proclaiming to secure this very supply. As a result, China is actively purchasing land abroad.

Migration during harvest season

China has three main regions for cotton production. The most important one is Xinjiang – the Uyghur Auton-

omous Region in China's northwest. Harvest in Xinjiang starts in September and requires up to a million cotton pickers every year. These cotton pickers are mostly Han-Chinese coming from the rural regions of western and central Chinese provinces, such as Henan, Gansu, Sichuan, Shaanxi, Jiangsu, Anhui and Qinghai, where the average income is usually very low. These regions can be as far as 4,000 km away from Xinjiang. The labor migration to Xinjiang is supported and organized by the provincial government of Xinjiang and national recruitment programs. Having arrived at the cotton production sites, cotton pickers regularly work there for 10 to 14 weeks. The majority of pickers are women between

The cotton pickers of Xinjiang

The employment of predominantly women in cotton picking has spurred a change in traditional gender roles. Traditionally, women bear the main responsibility for household and child care. For the two and a half months they are away from home picking cotton, their husbands take charge of household chores and children and the women are the breadwinners. The motives of women to work as a cotton picker vary greatly: many try to give their children the chance to attend university. Others aim to finance their children's wedding. Some simply strive to improve their standard of living, be it via a new television or a new house. But what they all have in common is that the additional income from cotton picking plays an important part in their strategy to secure their very existence. Many women therefore put all their hope in this work and are ready to undertake tremendous effort. Cotton picking allows them to earn a lot of money in a rather short period of time which is otherwise not possible for them in China.

40 and 50 years of age. Since many female workers are sent to retirement in their mid-forties, their pension is small and they have to rely on other sources of income such as cotton-picking. Despite a number of benefits that come with labor migration (higher income, greater autonomy) and despite the fact that work migration has experienced a trend towards feminization in the 21st century, it is mostly women migrant workers who suffer under poor working conditions.

The conditions for seasonal workers in cotton production are more difficult than those in other industries as most of the standards and laws regulating working conditions or voluntary codes of behavior for employers only apply to permanent employees. According to a 2008 World Bank research study, the growth of informal work in agriculture diminishes the potential for decent work, whereas in other economic sectors, better conditions come along with developmental processes.

Working Conditions

The pickers are paid per kilogram. In one day, they can pick between 80 and 120kg of cotton. Earning around 180 RMB (approximately 21 EUR) per day, a worker can expect earnings between 529 and 653 EUR per month when working 25 to 30 days. However, the first round of picking is usually the one with the highest yield, which means profit diminishes with every further round. Also, maintenance costs and other expenses for food and travel expenditures are deducted from the pay. Still, the income of a cotton picker lies above the average income of rural households in Xinjiang. Picking cotton does, however, constitute strong physical strain. The same motion is performed around 25,000 times a day when picking 100 kg of cotton; the container for harvested cotton becomes increasingly heavier, the heat is often overwhelming and insect repellent clothing is thick. Additionally, the massive use of pesticides in cotton production poses an ever greater risk to the health of cotton pickers.

Labor deficit

Since the yield of cotton has increased, demand for cotton pickers has accordingly grown. At the same time, alternative means of employment in urban areas have gained importance, causing a deficit of cotton pickers in recent years. As a result, harvesting

has become more mechanized and other sources for labor are being sought. Through specially designed work-study-programs, school children are employed to pick cotton. These programs usually last for 14 days, but older students will often work far beyond this limit. If they do not meet their daily quota, they have to expect punishment. The shortage of cotton pickers as also had positive results, such as an increase in wages, the additional subsidization of travel and maintenance expenditures and improved working/living conditions.

Consequences of the cotton production

The excessive water consumption in cotton production as well as its reckless cultivation has resulted in severe ecological damage: ground-water levels are declining, soils are over-salinated, a loss in vegetation and soil erosion has resulted in frequent dust and sand storms. Moreover, conflicts with neighboring states have increased because China extracts huge amounts of water from cross-border rivers. River Ili, e.g., which originates in Xinjiang, constitutes an important source of water for Lake Balkhash in Kazakhstan. Due to the extensive extraction of water for cotton production in Xinjiang from the River Ili, there have frequently been problems with water shortages and water supply for Lake Balkhash.

China and African cotton

Due to environmental and economic limitations on Chinese cotton production, Chinese actors have become increasingly involved in Sub-Saharan Africa in order to directly purchase their cotton from local cotton production associations. China depicts its engagement in Sub-Saharan Africa as development assistance, sharing its own experiences in economic development and poverty alleviation, and interpreting its actions as part of the South-South Cooperation. However, China's involvement in Africa has started to follow a different approach, turning away from its focus on development aid and support but rather concentrated on economic cooperation². Economic ties as part of the collaboration between China and Africa are not new, but their scale and intensity have significantly increased since the mid-1990s.

On the occasion of an extension of the cooperation agreement between China and the countries of Benin, Burkina Faso, Chad and Mali in December 2013, the Chinese Minister of Commerce Gao Hucheng stressed that “China strives to strengthen the capacities of Cotton 4 in the field of cotton processing and logistics in order to make this sector a new model for South-South Cooperation”³. Chinese involvement in the African cotton sector is contradictory, though. While Chinese textile companies show significant interest in importing cheap cotton, the Chinese government at the same time subsidizes the domestic cotton sector through high purchase prices and imposes escalating tariffs on imported cotton.

Cotton and textiles in the Sino-African commerce

In 2009, China rose to be Africa’s top trading partner. Sino-African commerce reached a volume of almost 200 billion US-Dollars of which African exports to China totaled 113 billion US-Dollars. As Figure 1 shows,

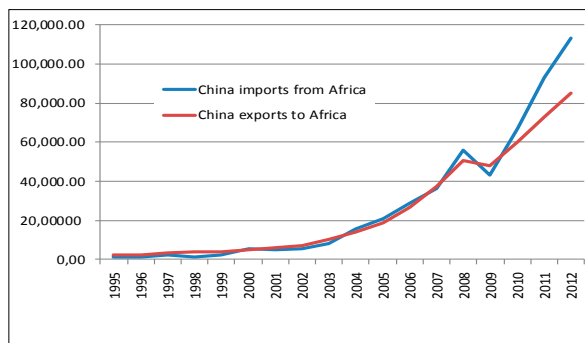


Fig. 1: China’s trade with Africa in Billion US-Dollar (1995–2011)

(Source: Tralac (2013): Africa-China trading relationship; <http://www.tralac.org/images/docs/4795/africa-china-synopsis.pdf>)

Sino-African commerce practically emerged out of nothing in 1995 and became one of the most important stability factors in Africa’s foreign trade.

Through the diversification and the growing technological level of its exports to Africa, China is approaching a characteristic “North-South Relationship”: it imports commodities and exports industrial goods. The very unequal meaning of trade for the respective countries

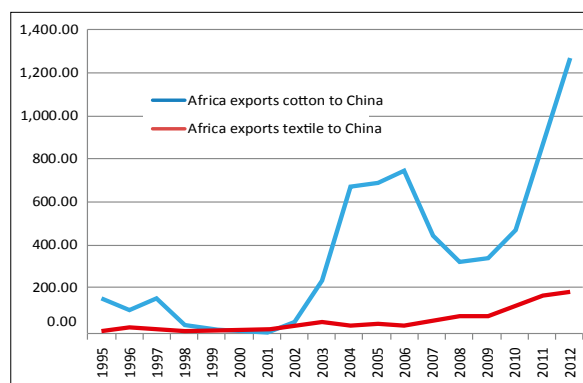


Fig. 3: Africa’s cotton and textile exports to China in million US-Dollar

(Source: Africa-China trading relationship; <http://www.tralac.org/images/docs/4795/africa-china-synopsis.pdf>)

substantiates this estimation: trade with Africa only covers a small share of total Chinese foreign trade, in 2010 totaling 2 percent, despite preferentialism such as access to the Chinese market free of customs or quotas for Africa’s poorest countries. At the same time, China is the most important trading partner for many African countries.

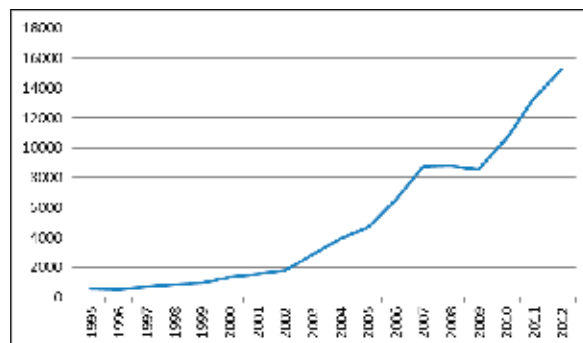


Fig. 2: China’s textile exports to Africa in million US-Dollar

(Source: Tralac (2013): Africa-China trading relationship; <http://www.tralac.org/images/docs/4795/africa-china-synopsis.pdf>)

Among the agricultural products China imports from Africa are cotton fibers, an important basic element in the Chinese textile and clothing industry. The exports of African cotton to China increased from 151 million US-Dollars in 1995 to 1.24 billion US-Dollars in 2012. Textile exports have exponentially grown post-millennially as well, starting however at a lower level: they increased from 9.8 million US-Dollars (1995) to 181.3 million US-Dollars (2012).

The expanding possibilities for selling African textile products in the Chinese market must not, however, distract from the fact that Chinese textile exports to Africa are one of the central reasons for the decay of the African textile and clothing industry. In South Africa, for example, one of the African countries with a major textile industry, the growing Chinese textile imports following the trade liberalization in world textiles between 1995 and 2004 led to the closure of a great number of textile factories. Approximately 55,000 jobs were lost. At the same time, Chinese textile and clothing exports to South Africa rose from 34 million US-Dollar (1995) to 324 million US-Dollar in 2004 and ultimately 1.18 billion US-Dollar in 2012 (Tralac 2013, numbers for Top-20 exports to South Africa).

Minimum prices, reserves and quotas

China is not only the biggest importer of cotton, but also the world market leader in producing cotton fibers. Cotton production is an essential foundation for the Chinese textile industry but also a central source of income for many millions of Chinese farmers. In order to guarantee a stable income from cotton production, the Chinese government has established a system of fixed minimum prices. The state set its fixed purchase price at 141 US-Cent per lb in 2011/2012 and 150 US-Cent per lb in 2012/2013 and 2013/2014. The state purchases more cotton than manufacturers can process and thus generates reserves. Chinese reserves of both domestic and imported cotton are estimated to amount to 8.5 million tons. Between September 2012 and July 2013, China sold cotton from these reserves for 135 US-Cent per lb. It is an expensive business for the Chinese government, at least when looking at the high purchase prices for domestic cotton. Thus, the minimum price has similar effects to subsidies for Chinese cotton. In order to guarantee that domestic cotton remains competitive against its cheaper imported counterpart on the Chinese market, China introduced a quota model which complies with the World Trade Regime: the first 894,000 tons of cotton imports are imposed with 1 percent of charges, additional imports are imposed with up to 40 percent if required. Thus, the domestic price for cotton in China can be kept above world market prices. Ginning factories profit especially from the higher domestic

prices and through a subsidy system for quality seeds, big farms profit from Chinese cotton policies as well. According to an estimation of the ICAC, these subsidies do not reach small farmers.

In Africa, this system has led to a price hike for African cotton in Chinese trade without African farmers profiting from the higher selling prices. Chinese textile factories have their very own strategies to avoid high costs through subsidized Chinese cotton and escalating customs on imported cotton: They either

China-Africa Cotton Development Limited

Chinese involvement in the African cotton sector is supported by the CADFund. Among the companies CADFund finances is the China-Africa Cotton Development Limited (CA Cotton) which holds two Chinese textile companies, Qingdao Ruichang Cotton Industrial Co. Ltd. and Qingdao Huifu Textile Co. Ltd (www.cadfund.com). CA Cotton has subsidiary companies in Tanzania, Zimbabwe, Mali, Malawi, Mozambique and Zambia and focuses on the research of cotton seeds, planting, purchase and manufacturing of cotton, cooking oil and production of textiles.

In Malawi, China 'took over' the previously Taiwanese involvement in the cotton sector in 2007. The local CA Cotton invested more than 25 million US-Dollars in a cotton ginning factory and thus created 1500 jobs. The cotton is delivered by more than 100,000 farmers who receive 56 US-Cent per kilogram instead of the usual 37 US-Cent. Additionally, the company provides certified seeds and pesticides and has invested in the establishment of a textile factory. The employees of those factories were given a daily salary of 2 US-Dollar which is far above the statutory minimum wage⁴. This special commitment to a growth in the added value of the Malawian economy as well as the details about high wages (which are, however, 'only' based on reports of the press) should be understood against the background of the dispute between the People's Republic of China and Taiwan: Malawi once was one of the few African countries which upheld diplomatic relations to Taiwan after 2000. Its shifting orientation towards the People's Republic may have been rewarded through good wages and large-scale investments.

increasingly import cotton yarn as it is not affected by import quotas, or they outsource production to other countries, e.g. African states. The China-Africa Cotton Development Limited is an example of the involvement of Chinese factories in Africa which have evaded the increasing production costs in China, made use of African trade preferences at the US- and EU-market and at the same time have presented themselves as part of the South-South Cooperation.

Conclusion

China is playing an increasingly important role in the African cotton and textile sector – both as investor and trading partner, and as a partner in questions of infrastructure and industrial development. With its political involvement, China is striving to show that it is taking Africa seriously as a partner. However, the problems that have arisen with China pursuing different objectives while trading with over 50 African states are significant. Chinese involvement in Africa is contradictory: it seems rational in the context of Chinese companies' interests in low production costs, good access to the market and high profits. New jobs are generated in

Africa (in the industry sector as well), but research studies analyzing the quality of these jobs have yet to be conducted. It is the working conditions, the chances of access to a decent income, the environmental standards in production and the successes in transferring technological knowledge that will prove to be decisive factors in assessing whether China will contribute to fighting poverty and open up new perspectives for the African population.

Annotations

1. *This article comprises excerpts of two SÜDWIND publications by the author, Sabine Ferenschild. Translation into English by Stiftung Asienhaus*
2. Cissé, Daouda (2012): FOCAC: trade, investments and aid in China-Africa relations (Policy Briefing May 2012, Centre for Chinese Studies, Stellenbosch University); URL: <http://www.ccs.org.za/?cat=64&paged=3>
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10. Why are Chinese agricultural firms so active in Latin America and the Caribbean?

By Evan Ellis

Chinese companies are seeking to replicate the logistics of multinational companies such as Cargill in order to secure products such as soy and fishmeal to feed livestock.

From the perspective of the People's Republic of China (PRC), the ability to feed its 1.35 billion population is a matter of existential strategic importance. Growing Chinese prosperity and its associated meat consumption has exponentially increased the demand on a Chinese agricultural system constrained by limited arable land, industrial contamination and drought.

While China has sought to maintain self-sufficiency in the production of food for human consumption, it has increasingly turned abroad to acquire animal feed to produce that meat, including soy to feed pigs and fishmeal for chickens. As a result, from 2000 through to 2012, Chinese agricultural trade with Latin America expanded from \$2.0 billion to \$26.2 billion, and is projected to exceed \$40 billion by 2017. With the blessing of the Chinese government, Chinese agricultural firms have increasingly developed relations abroad, including with Latin America, to obtain vital foodstuffs.

A glimpse at five countries (Argentina, Brazil, Peru, Jamaica and Mexico) sheds light on the diversity of Chinese agricultural activity in the region and on the challenges it brings.

Argentina: During the past decade, high international soy prices, driven in part by Chinese demand, have led Argentine farmers to dedicate land previously used for other crops to soy production. Although Argentina's growing soy exports to China also stimulated interest by Chinese investors in acquiring land in the country, an Argentine land law passed in December 2011 restricted such acquisitions.

Generally unable to acquire land, Chinese companies turned to a strategy of seeking to build a farm-to-port logistics infrastructure to guarantee delivery of these much-needed goods, mirroring that of the established agro-industrial companies such as ADM, Bunge, Dreyfus and Cargill.

In August 2011, for example, the Heilongjiang-based Chinese Beidahuang Nongken Group announced a proposed project in which it would invest \$1.5 billion in the Argentine province of Rio Negro for the growing of soybeans, including the installation of irrigation systems and the construction of storage, crushing, and other facilities. The project was derailed, however, when the provincial governor who had opened the door for the project, César Barbeito, was beaten in regional elections by Carlos Soria, the candidate of the national ruling party, the Victory Front, which opposed the project.

In a similar fashion, in 2012, the Chinese agricultural conglomerate Chongqing Grain, in conjunction with an Argentine partner, Molinos Cañuelas, was reportedly seeking to establish a soy production facility in the province of Cordoba.

In the end, however, the inability of Chinese companies to construct such logistics networks led them to turn to purchasing companies with an established presence in the sector, including the \$1.2 billion acquisition of controlling interest in the agricultural firm Nidera, and the \$1.5 billion acquisition of a majority stake in H.K. Noble in 2014.

Brazil: As in Argentina, the Brazilian government has acted to block Chinese and other foreign investors from acquiring land in the country, including a restrictive ruling by the Attorney General's office in 2010 blocking such acquisitions, reinforced by further administrative decrees in 2011.

Again paralleling the Argentina experience, in the face of such restrictions, Chinese investors in Brazil sought to create infrastructure in the country for acquiring, storing, processing and exporting soybeans and other agricultural products to the PRC. Announced projects included a \$7.5 billion investment by Sanhe Hopeful in the state of Goias, and \$2.5 billion in projects by Chongqing Grain in Bahia, although to date, neither project has gone forward.

Peru: In Peru, Chinese agricultural investment has centered on the fisheries sector. Over the past decade, Hong Kong based China Fisheries Group, has acquired a significant portion of the Peruvian fishing fleet, and associated on-shore fishmeal processing facilities, conferring rights to an ever greater portion of the Peruvian offshore fishing quota. By November 2011, the group had six processing facilities on the Peruvian coast and rights to 12% of the country's fishing quota. Its most significant advance, however, came in June 2013, when it virtually doubled its presence by acquiring the fishing company Copeinca for \$783 million.

Jamaica: Chinese agricultural activities in Jamaica were relatively limited until 2010, when the Chinese state owned enterprise China National Complete Plant Import Export Corporation (Complant) purchased the national sugarcane processing facility being divested by the Jamaican government for \$774 million.

From the beginning, however, Complant experienced continuous difficulties both with its labor force and local sugar producers, forcing the company to replace the plant manager that it had initially sent from China.

Mexico: Chinese agricultural engagement with Mexico has historically been limited. In contrast to Brazil and Argentina, there is little land in Mexico which can be diverted to grow agricultural goods for export to the PRC. As a part of the North American Free Trade Agreement (NAFTA), most of that agricultural production which Mexico exports is absorbed by the United States.

Under President Enrique Peña Nieto, Mexico has nonetheless sought to expand agricultural exports to China to offset the country's enormous trade deficit with the PRC in manufactured goods. In 2013, Mexico and China reached accords to expand Mexican pork exports to the PRC, yet to date, such initiatives have produced only limited results.

China's growing role

In general, the focus of Chinese agricultural engagement in the countries of Latin America and the Caribbean has depended on the predominantly agricultural sectors in the host country, and those which fulfill particular needs within the PRC. Thus, in Peru, the Chinese focus on the fishing sector is a coincidence between the existence of an important fishing sector in the country and China's voracious demand for fishmeal for chicken feed.

Chinese agricultural initiatives in the region have also regularly generated political resistance in the countries in which they have occurred. Typically, such objections have not been framed in terms of the Chinese identity of the company or businessmen, per se. Opposition to the Beidahuang project in Rio Negro, for example, focused on whether the state government had the constitutional authority to commit Argentine territory to a foreign enterprise, while in Jamaica, critics of the government's sale of its sugar refinery to Complant simply questioned whether it was getting a good deal.

In virtually all of the cases, Chinese agricultural engagement in the region reflects an ongoing learning process; Chinese companies doing business in the region will tend to become more effective with time.

The activities of Chinese agricultural companies today are transforming Latin America and the Caribbean. These companies' process of learning and adaptation will only enhance the effects of their engagement with the region, both positive and negative, in the years to come.

*Credit: This article is an abridged version of R. Evan Ellis' chapter in the recently released *Política Exterior China: relaciones regionales y cooperación* published by the Benemérita Universidad Autónoma de Puebla (BUAP).*

*This article first appeared on *Diálogo Chino* (<http://dialogochino.net/why-are-chinese-agricultural-firms-so-active-in-latin-america-and-the-caribbean/>), a new multilingual web platform launched by *chinadialogue* focusing on China, Latin America and the environment. <http://dialogochino.net/why-are-chinese-agricultural-firms-so-active-in-latin-america-and-the-caribbean/>*

11. Transgenic versus Agro-ecological Approaches for Sustainable Agri-food Systems in China: Prospects, Politics and Practices

By Adrian Ely, Sam Geall and Yiching Song

This article takes low-carbon innovation in agri-food systems as its sector of inquiry, introducing two case studies from China in order to understand how different models of low-carbon innovation are supported and constrained by political debates in the country's changing policy-making environment. The case studies are:

- The centrally-supported development of genetically modified phytase maize as a potential component of intensive agri-food (including livestock) systems, and;
- The emergence of agro-ecological and low external input sustainable approaches to the production and consumption of maize and associated agricultural products.

Case Study 1: Phytase maize

Phytase maize: prospects

China's rising meat consumption and production has had a significant impact on patterns of maize production and consumption. Maize is now the number-one animal-feed and number-three food crop in China. While 50 years ago, maize was grown on around 15 million hectares across China, by 2011, this figure had climbed to more than 34 million hectares for both food and feed, with more than a 12-fold increase in annual overall production an upward-trend stronger than anywhere in the world.

China's maize agriculture, in common with other crops, has considerable environmental effects. Intensive forms of maize production at increasingly larger scales use large amounts of fertilizers and pesticides, and produce additional carbon emissions through mechanization.

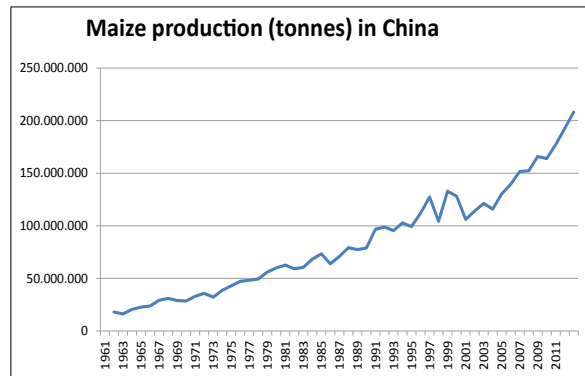


Fig. 1: Maize production (tonnes) in China, 1963–2013, FAOSTAT

In the context of climate change, these require redirecting innovation towards more sustainable and low-carbon modes of agricultural production. One such potential innovation is phytase maize. Phytase is an enzyme that breaks down phytates, chemicals that are found in maize and act to inhibit the uptake of phosphorous as a nutrient in monogastric animals, such as pigs and chickens. Phytase is therefore often used as an additive for animal feed and is mandatory in Europe, Southeast Asia, South Korea, Japan and Taiwan, primarily because its use reduces phosphorous pollution from animal faeces.

Transgenic high-phytase maize, which would eliminate the need for such additives by enabling pigs fed on the crop to absorb more phosphorous directly, has been claimed to have various environmental and greenhouse-gas mitigating benefits, principally:

- more efficient land use as in comparison to conventional maize, phytase maize should, due to the higher bioavailability of phosphate, require less feed per animal, reducing the requirement for land or fertilizer for a given meat yield;

- direct energy savings as a result of the active ingredient being made in the plant rather than the factory;
- environmental benefits associated with avoiding pollution from phosphorus and other discharges.

In 2009, the MOA granted Origin Agritech Limited a biosafety certificate for phytase maize. However, before the product could be officially commercialized it needed to complete the seed variety registration process (GAIN 2009). Origin Agritech had said it hoped this would be completed in 2013, but the authorities have blocked or delayed the final approval process.

Phytase maize: politics

Phytase maize has been praised in Chinese state-run media as a symbol of low-carbon innovation. One article in the state news agency Xinhua in 2010 describe(s) the benefits of phytase maize for greater energy efficiency and emissions reduction. Another article in Xinhua headlined 'Environmentally Friendly Maize and environmentally friendly pigs', described the benefits of phytase maize and concluded that, 'genetic modification is often demonised as an environmentally destructive technology, but as we can see, the clever use of genetic modification will help protect the environment'².

Underlying this dominant narrative are not only technological considerations but also political dynamics. China's national policies place strong emphasis on building innovation in agriculture. In the latest No. 1 Central Document, priority is given to innovation in agricultural technology and building agricultural markets'. In 2012, the same document chose, 'accelerating the scientific and technological innovation to strengthen supply of agricultural products' as its core theme, with an emphasis on promoting 'industrialization, urbanization and agricultural modernization simultaneously', while increasing 'farmers' incomes and [maintaining] the social harmony and stability in rural areas'. China's Central Government policies clearly support the development of technological capabilities in transgenic science and technology, a focus that dates back to the 1980s when China became one of the first countries to experiment with genetically modified crops.

Agricultural biotechnology is also one of the key components of the Medium-Long Term Plan for Science and Technology (2006–2020).

China has so far granted safety certificates for transgenic cotton, papaya, rice and maize crops. However, only GM cotton and papaya have been authorised for commercialization.

Discourses

In the context of the 'global propaganda war enveloping GM crops'³ China has often been cast in the role of showing 'the way forward for developing countries' without the influence of 'troublesome non-governmental organizations (NGO) panicking farmers and consumers', an international view that resonates with technonationalism within China's elite circles.

However, Jia and Liu are among those observers pointing to the emergence of a wider, popular counternarrative in China which is concerned or critical about GM technologies, in contrast to the official media stance of support for transgenic crops as an element of agricultural modernization.

Recently a well-known Chinese state television host made a critical documentary about the controversy around GM in US academic circles. The documentary talks to a range of activists, scientists and regulators, and features fringe views emphasising an apparent correlation between diseases such as autism and the consumption of GM crops in the United States. In response, the science writer Fang Zhouzi, argued that GM foods were safe. The resulting public debate was characterized in media articles as a highprofile celebrity feud. Writers, activists and academics, some of them government-linked, from China's 'New Left' and neo-Maoist movements have taken a particularly strident stance in their opposition to GM technologies, a position which one article in state-run Global Times characterized as, '[GM is] a conspiracy orchestrated by Western countries to stop the Chinese reproducing'.

Perhaps in reaction to rising public concerns, or due to genuine fears at an elite level about the risks of importing US GM crops, in late 2013 China denied entry to thousands of tons of a variety of insect-resistant Bt maize (MIR 162, produced by Syngenta) from the United States, which apparently had not been granted a security certificate, not for the first or the last time. Yet at the same time, government-linked scientists attempted to push the government to 'begin promoting industrial cultivation of GM rice as soon as possible'.

Phytase maize in China and the Origin Agritech Limited

Phytase maize was developed over seven years by the Chinese Academy of Agricultural Sciences and licensed to Origin Agritech Limited. The company claims that phytase increases phosphorus absorption in monogastric animals by 60 per cent and reduces the release of phosphorus in faeces by 40 per cent. It also claims that the worldwide phytase potential market size is US\$500 million, including \$200 million for China alone. Origin Agritech is a leading agricultural biotechnology company, which was listed on the NASDAQ Stock Market in 2005 and specializes in sale and distribution of crop seeds, accounting for seven to eight per cent of China's crop seed market.

The company holds a US patent on a synthetic glyphosate-resistant gene for use in transgenic maize agriculture, an indicator of its status as a competitor to major multinational agricultural biotechnology companies, in this case, Monsanto, the leading producer of the herbicide glyphosate, as well as genetically engineered seeds.

Origin Agritech receives significant Chinese Government support. Origin's company filings state it has received government subsidies for research and development, totaling 1.55 million yuan in 2012 and 16.11 million yuan in 2013, accounting for around four per cent of the company's research and development budget in 2012 and 38 per cent in 2013.

The country's political debate is likely to remain intense, and is likely to be shaped more than in previous eras by the preferences and practices of China's producers and consumers.

Phytase maize: Consumer perspective

Perhaps most significantly in this section are the practices of the end consumers of maize, meat or processed food.

Before the safety certificates for phytase maize were issued, some researchers suggested that food labelling was not yet a contentious issue and that, at least in the urban East, when commercialized it would not be likely to meet much resistance in China. Since then, an

emerging narrative that draws attention to the risks of GM foods, in particular, seems to have emerged with debates around the Chinese-developed insect-resistant Bt63 rice, sparked by a report in the influential Guangdong based newspaper Southern Weekend in 2004, which suggested scientists had attempted to commercialize the GM rice 'for their personal commercial interests'.

This was the first case of the Chinese public questioning 'science and the people doing science', which ultimately resulted in a halt to the process of commercialization. In 2004, the same year that the Southern Weekend article appeared, one Ipsos survey on GM foods in Beijing, Shanghai and Guangzhou, commissioned by Greenpeace, found that 57 per cent of people surveyed were 'against GM foods' and only 16 per cent would eat GM foods⁷. That rice is a staple food with cultural and historical resonances is often cited as a particularly important faultline and the reputation of GM rice, and similar technologies in general, may have been damaged even further by a widely reported scandal in 2012, where parents had found their children were being fed GM rice in a study on health effects conducted without full, informed consent.

Case Study 2: Agro-ecological approaches to maize production

Agro-ecological and sustainable agriculture: prospects

The agro-ecological approaches seek to develop agricultural practices that are more sustainable and low-carbon, but stand in marked contrast to the top-down, IP-intensive approach to innovation that has characterized the development of phytase maize. They are designed for farmers at much smaller scales and often sit within polyculture systems alongside the cultivation of other crops, and combined with other, diverse, livelihood strategies. Agro-ecological farming dramatically reduces the use of nitrogen fertilizer and, as a direct result, the carbon intensity of production. Reduced pollution from nitrates and phosphates, and thus reduced food safety risks and environmental risks, are additional benefits. While in the early years of reform, Chinese food shoppers still had little variety, by the 2000s food supplies were abundant and new kinds of food safety hazards had helped to create the

conditions for a market in 'green', 'organic' and 'no public harm' foods⁸.

Sustainability training for farmers

Urban environmentalists in China have promoted the production and consumption of organic and sustainably farmed foods. For example, the Pesticides Eco-Alternatives Center (PEAC), an NGO based in Kunming, Yunnan Province in southwest China, a region known for its long growing season and relatively low population density, which has helped to make it a supplier of organic and green produce for many other regions in China, carries out research on pesticide use and holds regular farmer training workshops focused on the health risks of pesticides to the environment, consumers and farmers themselves. Li Yuan, a journalist for Spring City Evening News, also in Kunming, organizes field trips for volunteers to assist farmers using sustainable methods, has opened a small facility where those living in urban communities can learn how to get involved in raising their own, organic crops, and has produced a 25 minute educational film, 'Ecological Growing', with support from the Yunnan Association of Science and Technology, a government think-tank.



Advocating sustainably farmed food – slide from a PEAC presentation

Central organic certification

Indeed, state efforts, while at a much smaller scale than the backing for agricultural biotechnology, have also supported the development of organics and similar foods in China. In the 1990s, China's Ministry of Agriculture established the Green Food Development Centre in Beijing and the Ministry of Environmental Protection set up the Organic Food Development Centre in Nan-

jing. These two organizations, respectively, created the categories of chemically reduced green foods and the certification scheme for organic foods. Certified green foods are much more widely produced than organic foods in China. By 2005, more than 500,000 hectares were dedicated to certified products, with over 1,000 companies involved

Maintaining biodiversity

Other efforts have focused on the use and maintenance of broad genetic diversity and self-reliant local agricultural systems to improve resilience to climate change and provide a basis for local adaptations. Increasing erosion of agricultural biodiversity reduces resilience to biotic and abiotic (including climatic) shocks and stresses across the country, especially in more sensitive areas in the southwest where maize plays an important food security role. Forty years ago, Chinese farmers grew at least 12,000 open-pollinated varieties, whilst today farmers in the main maize growing areas have to rely on only about 200 hybrid varieties.

As elsewhere in the developing world, farmers are increasingly adopting hybrid seeds, increasing their



Ancient Maize Variety

dependence on high-input cropping systems. Hybrids often do not do well without sufficient doses of chemical inputs.

They also require the purchase of new seeds year after year for optimum results. However, agro-ecological and organic agriculture in China has maintained some



Farmers market consumers, activists jointly inspecting farm they buy products from

of the genetic diversity in the country's indigenous maize genebank. Grassroots approaches, such as participatory plant breeding, which involves farmers and local organizations, have attempted to improve crop varieties and farmers' livelihoods. These approaches offer the potential of low carbon, climate-resilient food security, supplying safe and nutritious food whilst also retaining control of agri-food systems (and their associated economic exchanges) at the community level.

Politics and discourses regarding Agro-ecological agriculture

As detailed above, State support has been a notable feature of organic and agro-ecological farming, particularly in the early 2000s. However, since certification bodies are also profit-oriented and state-affiliated organizations, which cooperate closely with local governments and entrepreneurs', distrust of the certification system is quite high among civil-society groups, such as PEAC, which have tried to popularize green and

organic foods, and some are actively ,looking to provide alternatives to the already existing "alternatives"'. This critique from community-oriented organic groups extends to that of the dominant ,enterprise plus farmer' model for organic production, under which enterprises contract production work out to individual farmers, supply inputs such as seed and organic fertilizer, and reap most of the profits.

More fundamental critique is expressed by the new Rural Reconstruction Movement (RRM,) modelled on a movement of the same name in the 1930s, which has re-emerged since the early 2000s. The RRM is headed mostly by university academics, public intellectuals, NGOs and some ,para-governmental rural support organizations'. They aim to popularize alternative ideas of rural development, provide policy advice and mobilise ,student volunteers for rural support'. From the perspective of the RRM, the Reform Era has brought about ,commodification of agricultural inputs, labor, public goods and technical services, a steady exodus of educated

rural youth as migrants to cities, the aging and feminization of rural producers, fragmentation of familial life, estrangement of social relations within villages, growing rural disparity, and more. As such, the RRM has helped to articulate and promote a politically significant alternative model of agricultural modernization.

These are far from mainstream views in China, yet as consolidation and similar reforms have taken place, the number of rural cooperatives has simultaneously mushroomed in China, many practicing organic and ecological agriculture, and some attempting to create new linkages between rural producers and urban consumers.

Sales of organic food direct to urban consumers has also been promoted as a model by groups practicing Community Supported Agriculture (CSA) in major cities, including Beijing and Chengdu.

Agro-ecological and sustainable agriculture: practices

Whilst intellectuals like Wen Tiejun and some parts of the Chinese Government have begun to advocate personal reductions in meat consumption, changing the dietary practices of the last of the categories above is a complex challenge. A preoccupation with health and food safety, linked to environmental concerns, has been seen to shape consumer awareness and choices in China.

While China has seen an overall trend towards higher consumption of meat, the past decade has seen the 'rapid development' of vegetarian catering in Chinese cities. Major cities now have many vegetarian restaurants, which often are also organic and have an emphasis on health. Garnett and Wilkes cite the emergence of a 'new vegetarianism [among the] young, urban elite, [a] holistic response to a nexus of concerns about

human health, the environment, animal welfare and the wastefulness of feeding grains to animals'.

Annotations

1. Credit: This article is an abridged excerpt from the STEPS Working Paper Pathways Towards Sustainable Maize Production and Consumption in China: Prospects, Politics and Practices by Adrian Ely, Sam Geall and Yiching Song. The authors would like to acknowledge the support the UK Economic and Social Research Council (ESRC), in particular grant number ES/K006002/1 (Low carbon innovation in China: Prospects, Politics and Practice).
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12. A commentary on the Chinese GMO debate: The Right of the Ignorant

By Yifan Jiang

The debate about genetically modified organisms in China has underlying misconceptions, and has therefore reached a dead end. Almost all arguments revolve around the edibility of genetically-modified food and neglect other problems associated with the application of genetic engineering in agriculture. At the moment, we are focusing too much on GM-related challenges in biology and genetics. But when it comes to agriculture, the issue also needs to be examined from the viewpoints of agricultural sciences, ecology and environmental sciences just as well. Therefore, controversial questions such as “*can GMO increase agricultural output?*”, “*does it decrease or increase pesticide use?*”, and widely reported problems (even by scientists) such as the rise of “superweeds” and secondary insects, require thorough and painstaking research and discussion under the scopes of all the above-mentioned natural sciences. Being an agricultural question, it is also inevitably the subject of social sciences, too. But so far, experts from these disciplines have not yet raised their voice in the GMO debate. Consequently, what is left is two opposing extremes unwilling to take one single step towards one another while both preoccupied by raising “scientific evidences” of GMO intake safety and unsafety. This made the broader population consider the GMO debate as something exclusively scientific they do not dare to interrupt.

So, which other implications are connected to genetic engineering? Maybe a closer look at the anti-GMO movement in Europe can help us.

GM foodstuff in Europe: Production prohibited, import approved

The use of GMO in Europe was first approved in 1998. Only two kinds of genetically modified crops have been

authorized since – one strain each of corn and potato. The potato, however, was taken off the market again in 2011. While only one specific strain of GM-corn is permitted to be planted on European ground, it is possible to import more than 50 kinds of genetically-modified fodder or foodstuffs. Due to strict regulations and the consumers’ reservations regarding genetically modified goods, it is difficult to find GMO foods at the European market – although an extensive use of modified fodder produced in Latin America for meat products does take place. Proponents of the genetic engineering industry often criticize this attitude of prohibiting production in Europe but tolerating imports as contradictory. But as soon as one realizes that growing GMOs actually poses different risks from those of eating them, he/she understands the rationality behind this “contradiction”, and realizes that such behavior actually enables Europe to foist off the risks and dangers that come along with the production of GMO on others. This realization has led opponents of GMO to push for a reduction of intensive livestock farming, as only when European consumption of meat products declines will the need for GMO in developing countries diminish.

GM as risk for biodiversity

The concerns of the European anti-GMO movement also include the uncertainty of its health consequences on humans and animals, but ecological and social concerns are also central to this movement. One of these concerns is that GMO endangers biodiversity – the United Nations estimates that between 1900 and 2000, 70% of biodiversity has been lost worldwide. One of the main reasons for this massive decline dates back to the 1950s, when the commercialization of seeds took possession of seeds markets all over the world, limiting to a minimum every region’s genetic diversity which has for hundreds of years been carefully treasured by farmers.



Shanghai Nonghao Farmer's Market

The enormous potential of the market for genetically modified organisms and the high uniformity of modified seeds have spurred the loss of biodiversity in agriculture. But biodiversity functions as a guarantor in arable farming to fight risks, for example in food security in times of an ever accelerating climate change.

[...] in Europe many supporters of the anti-GM movement are farmers themselves, unlike in China where most opponents are consumers from cities worried about food safety.

It is not only for the sake of food safety alone, but biodiversity is worth defending also because it adds to the variety of tastes, constitutes the basis for a rich environment and attracts pluralistic cultures.

GM jeopardizing farmers' economic independence

The power of the multinational companies behind genetically-modified seeds guarantees them a prominent position at the seeds market. The degree to which the global seeds industry is monopolized has already by far overtaken that of the car industry. According to a report released by the European Greens – European Free Alliance of the European Parliament in January 2014, the ten biggest seed producers control 75% of the world's seed market. Within the European Union, five companies hold control over 95% of the vegetables seed market. Almost every day, a small seed producer is bought up by a big multinational company. This

centralization implies the possibility that eventually monopolies will emerge. Therefore, another concern many opponents of the genetic engineering industry share is that if genetically-modified seeds penetrate the European market, farmers using GM seeds may become dependent on the monopolist and lose the ability to choose and to negotiate. This is why in Europe many supporters of the anti-GM movement are farmers themselves, unlike in China where most opponents are consumers from cities worried about food safety.

The concern that the genetic engineering industry might cause economic dependence was raised in the Chinese GMO debate as well but went unheard. Moreover, the debate was dominated by concerns about food security and about compromising state sovereignty, about "Chinese agriculture falling into the hands of multinational companies" rather than looking at farmers' situation in face of capitals, no matter they are Chinese or foreign, private or state-owned. If China expands its genetic engineering industry, will our biodiversity and farmers' basis of existence be jeopardized as well?

Have we designed any plans to support and protect them? Will there be any other environmental and social consequences? These are questions that have not been asked yet in the GMO debate. Only if more experts in

the Social Sciences make use of their knowledge and research and join this debate (even if they bring along with them other opinions than were heard before) the debate can become somewhat more mature. And if one day farmers, too, take part in this discussion, it will again have been enhanced.

Are GMOs the only way to guarantee China's food security?

The assumption underlying scientific proponents' argumentation is not unassailable. Their line of argument goes as follows: "Genetically modified food is safe to eat and brings with it higher yields than food from conventional seeds. China is aiming at an enhancement of food security. Therefore, it should with all its force support genetically modified food."

Suppose we proceed on the assumption that genetically modified organisms are safe and can bring about

an increase in yields (a question which is not the objective of this article), then we still have jumped over one part of our line of argument, namely providing proof to back the statement “only GMO can guarantee food security”. Only when this little part of the chain is proven, is it worthwhile to drop other technologies and solely concentrate on GMO.

Alternative well-elaborated technologies maximizing yields actually do exist. In her paper “Is relying on GMO the only way to feed China?” from 2013, Dale Jiajun Wen, Consulting Researcher for the internet platform Third World Network brought up the example of wet rice, China’s staple diet.¹ She showed how ecological agriculture would be a technology which focuses on a synthesis of soil and plants. Wet rice includes very diverse mixed rice/multigrain rice, which allows for intensive cultivation and soil samples could help identify those parts of a field where the use of fertilizers is necessary – and how much should be applied. Positive consequences such as an increase in yields on a large scale, reduction of the use of pesticides and seeds as well as the saving of water have already been proven. The problem is that the government has not yet undertaken enough to promote the practice of these technologies. In comparison, GMO-related science and research is supported much more generously. The budget for a research project on genetically modified organisms granted from the government in 2006 totaled 24 billion Yuan (or 3,56 billion Euro) – the biggest sum ever given to an agricultural science project after the founding of the People’s Republic. The funding a scientist researching conventional technologies in agriculture usually receives in a year is minuscule compared to what a scientist in the GMO sector gets.

Is China’s food security endangered at all?

Dale Jiajun Wen’s paper addresses another problem: are food problems in China really that pressing? She points to statistics that reveal the Chinese average consumption of meat products and products containing oil is already too high, consequently, the rate of adipose children is second only to the USA, and adults with hypertension, diabetes, cardiac and other ‘luxury diseases’ has drastically increased and created a huge medical burden for society as a whole.



Wet Rice Fields in South China

Additionally, we are wasting food in amounts that should shock most people. The waste of food does not start with the consumption, but with the production. One phenomenon which gained great media attention between the end of the year 2014 and the beginning of this year were farmers pouring fresh milk back on their fields and killing cows because they did not find any ways to sell their products.

This issue is not just a recent phenomenon. China’s rapidly growing demand for meat, dairy and oil products has enforced large-scale imports of genetically modified soybeans, corn and other products from North and South America, implicating social and environmental problems for the local populations there. The article “Who will feed China’s pigs?” which was published on chinadialogue.net points out that China’s demand for maize has played an important role in the exploitation of the Tropical Rainforest.

But we still lack a vibrant movement focusing on food and a dialogue on the connections between food and sustainable development, ideas bringing forward sustainable consumption behavior. Thus, ‘the higher the people’s living standard, the greater its demand for meat’ still constitutes the basis for agricultural policy planning – the aim is to satisfy this demand. The question whether this kind of eating behavior is healthy and sustainable is usually neglected.

Wrong premises are harming a democratic GMO debate

Let us come back to the dead end in the Chinese GMO debate. When listening to scientists arguing for the use



Organic Corn Harvest

of GMO, one sometimes cannot help to get the impression they are actually carrying out a battle to defend the dignity and honor of science. Arguing for or against GMO has almost become an indicator of one's standing point in science, one's image of the world and the cultural circles one belongs to. It is used as a tool to limit the debate and easily discredit one's opponents. How have we come so far?

Because our society is a late-comer of modernization we are eager to modernize, we strive to take over a leading international role, we are afraid of falling behind. Maybe we should put it this way: do we not wish to have a "science" (more accurately speaking, a "technology") following the principles of democracy and the rule of law? Considering that the illegal cultivation and sale of GM-food has already taken place on a large scale and without the government's transparent elucidation, can the public simply write off these incidents just because "GMO is the inevitable next step in scientific development"? Just because the public puts its trust in scientists, does that mean that, given the genetic engineering industry will expand, it is not necessary to ask what kind of control system and mechanism should be established in order to avoid damages?

Questionable role of the media

It is particularly disappointing when the media reduce the GM issue to something about 'science education', just because this year's No. 1 Central Document mentions 'strengthening research on agricultural GM technology, security management and the popularization

of science' and then endorse the industrialization of genetically modified organisms/genetic engineering under the name of 'defending science'. Because, the media's mission should be thorough and objective reporting on GM technology as a comprehensive issue, and raising a public discussion instead of bitterly and hatefully stigmatizing those who do not simply accept the spreading of GM technology as "ignorant" and "unscientific".

At a panel discussion titled "Debating GM technology – food safety, staple diet and science's right to speak" organized by ifeng.com (a subsidiary of Phoenix TV), a scholar opposing the use of GM technology said: "People have the right to be ignorant. I don't care about how much data you come up with, I don't care how much knowledge you produce. I just panic. I just don't like it. Is that okay? Yes, I have this right."

When I read this, I was a little worried. True, people have the 'right to be ignorant'. But this is their last, their saddest right – but we have not yet reached that point. In a good society, these "ignorant" and "unscientific" people should first have the right to bring up and discuss a public matter which concerns everyone. Similarly, they have the right to join in taking control of its development. Concerning these two last points, the "wise" and "scientific" people ought to be their companions.

Annotation

1. Dale Jiajun 2013: Is relying on GMO the only way to feed China? http://www.guancha.cn/WenJiaZuo/2014_03_03_208850.shtml

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Literature

(Please also consult our [webpage eu-china.net](http://www.eu-china.net) for specific more information on Agriculture and China)

Miscellaneous

Chinese NGOs dealing with agriculture

Please also consult chapter 4 and the NGO directory on the webpage of China Development Brief (<http://chinadevelopmentbrief.cn/directory/>)

Beijing Farmers' Market (Beijing, China)

Established in 2010, the Beijing Farmers' Market runs a Weekend market and serves as an information hub for sustainable agriculture and food systems. The organization aims to engage consumers and producers in direct trade and ultimately mobilize both producers and consumers to form a sustainable and fair food community. Their mission is to improve the livelihood and health of farmers, contribute to rural development, reduce agricultural pollution, but also educate consumers about sustainable and healthy food. In addition the organization is organizing seminars and community meals, trainings and farm trips to support and promote

food sustainability, as well as introduce new ideas and practices to achieve that goal.

<http://www.geichina.org/>

Global Environmental Institute (Beijing, China)

Established in 2004, the Global Environmental Institute's mission is to design and implement marketbased models for solving environmental problems in order to achieve development that is economically, ecologically and socially sustainable.

<http://blog.sina.com.cn/farmersmarketbj>

Partnerships for Community Development (Hong Kong)

Partnerships for Community Development (PCD), established in Hong Kong in May 2001, is a community development NGO set up and funded by the Kadoorie Foundation. PCD believes that everyone has the right and the ability to lead a dignified and sustainable life in harmony with others. Individual well-being is crucial in maintaining a harmonious and sustainable commu-

nity. Over the past years, their program has adopted a strategic approach that is community-based, environmentally conscious and respectful of local cultures, and which reflects critically on values and practices enshrined in the current mainstream development model.

<<http://www.pcd.org.hk/en>>

Friends of Nature (Beijing)

Friends of Nature (FON) is one of the earliest and most influential NGOs in China. Registered in March 1994 as the Academy for Green Culture, an affiliate to the non-governmental Academy for Chinese Culture, its mission is to promote environmental protection and sustainable development in China by raising environmental awareness and initiating a 'green culture' among the public.

<<http://www.fon.org.cn>>

Global Village of Beijing (GVB)

Global Village of Beijing (GVB) registered in 1996. GVB's focus areas include theories and practices of green consumption, green community development, ecological remedy and conservation, and youth environmental education and exchange. GVB's many major projects include an environmental TV program and a forum as well as environmental lectures and recycling campaigns.

<www.gvbchina.org.cn>

Pesticide Eco-Alternatives Center (Yunnan)

Founded in 2002, PEAC is China's first—and still only—environmental NGO focusing exclusively on pesticide problems. The mission of PEAC is to protect human and ecological health from farm chemicals by lowering the use of harmful pesticides and promoting alternative forms of pest control. PEAC carries out research and outreach projects that use consumer and farmer participatory approaches.

<<http://www.panchina.org/>>

Kadoorie Farm and Botanic Garden (Hong Kong)

This Hong Kong-based NGO was established in the 1950s to bring agricultural aid to poor farmers. Today, KFBG plays an active role in promoting conservation, biodiversity, and sustainable agriculture in Hong Kong

and South China. Since 1999, KFBG has cooperated with seven other local organic farms to form the Hongkong Organic Farming Association (HOFA), which coordinates networking between organic producers and supporters within the region.

<<http://www.kfbg.org/eng/>>

Reading recommendations

We are all farmers now, Zhou Wei, Yin Chuntao in: Food Safety Newsletter, EU-China Civil Society Dialogue (ed.) 2012 (<http://www.eu-china.net/materialien/food-safety-newsletter-12012/>)

Eva Sternfeld, Organic food 'Made in China', EU-China: Civil Society Forum, Hintergrundinformationen 10/2009, 11 August 2009, 11 p., <http://www.eu-china.net/materialien/organic-food-made-in-china-2/>

Land Policy Reform in China: Dealing with forced expropriation and the dual land tenure system by Vince Wong, published in May 2014 (<https://www.law.hku.hk/ccpl/pub/OP%20No%2025%20Vince%20Wong.pdf>)

This article, published by Center for Comparative and Public Law, University of Hong Kong, attempts to deconstruct some of the root causes of current land grievances in China by situating the increasing number of related mass incidents within a set of complex and interrelated factors.

Agriculture and Food Security in China: What Effect WTO Accession and Regional Trade Arrangements? (Edited by Chunlai Chen and Ron Duncan, published in June 2008)

Agriculture and Food Security in China explains the background to China's WTO accession and links accession to reforms beginning as far back as 1979. The book highlights China's policymakers' decision to move away from protectionism and gain self-sufficiency, and illustrates how China's step away from direct participation in the agricultural sector to indirect regulatory involvement and liberalization could encourage further economic growth.

Sustainable Ecological Agriculture in China: Bridging the Gap Between Theory and Practice by Tian Shi, published on September 8, 2010

Although the questions about ecological agricultural research arise from the local level, their answers may lie at higher levels within the realm of political economy. Therefore, it requires substantial research not only on the links between local production systems and the larger national economy, political structures, and decision-making processes, but also the role and limitations of the national and local authorities in policy development and implementation. This book also suggests that local government has a significant role to play in establishing appropriate institutional arrangements and policy settings for sustainable ecological agricultural development.

Growth and Evolution in China's Agricultural Support Policy by Fred Gale, published on August 2013 (<http://www.ers.usda.gov/media/1156829/err153.pdf>)

China is perhaps the most prominent example of a developing country that has transitioned from taxing to supporting agriculture. In recent years, Chinese price supports and subsidies have risen at an accelerating pace after they were linked to rising production costs. Per-acre subsidy payments to grain producers now equal 7 to 15 percent of those producers' gross income, but grain payments appear to have little influence on production decisions. Chinese authorities began raising price supports annually to bolster incentives, and Chinese prices for major farm commodities are rising above world prices, helping to attract a surge of agricultural imports. U.S. agricultural exports to China tripled in value during the period when China's agricultural support was accelerating. Overall, China's expansion of support is loosely constrained by World Trade Organization (WTO) commitments, but the country's price-support programs could exceed WTO limits in coming years. Chinese officials promise to continue increasing domestic policy support for agriculture, but the mix of policies may evolve as the Chinese agricultural sector becomes more commercialized and faces competitive pressures.

Chinas Agricultural Development: Achievement and Challenges (by Li Zhou, published in 2012) (<http://press.anu.edu.au/wp-content/uploads/2013/07/ch081.pdf>)

This article reviews the major achievements in China's agricultural development to date, and discusses the key challenges now facing the sector. It points out how China can confront these challenges by deepening the agricultural reform and changing the consumption patterns of certain agricultural products in order to improve people's health and reduce the waste of agricultural resources.

China's Disappearing Countryside: Towards Sustainable Land Governance for the Poor (author: Yongjun Zhao, published in 2013)

Increasing shortage of space is sorely felt as cities and towns grow, as infrastructure is expanding, and as land is lost to environmental degradation. With intensified competition, small holders' positions are often weakened by the cumulated institutional disenfranchisement of China's modern agrarian history. Land tenure is about more than simple property rights. Zhao therefore investigates the broader dynamics of governance and politics in which struggles over land control are embedded. Zhao's basic argument is that recent land reform policies, with collective (ultimately state) ownership and individual use rights, have caused social fragmentation and a weakening collective power of the poor, and have led to unsustainable natural resource use and farming practices.

Links

<http://english.agri.gov.cn/>
(Ministry of Agriculture of the People's Republic of China)

This link offers information about the development of the agriculture and rural economy in China.



EU-CHINA
Civil Society Portal

eu-china.net

Informationsportal für die Zivilgesellschaft

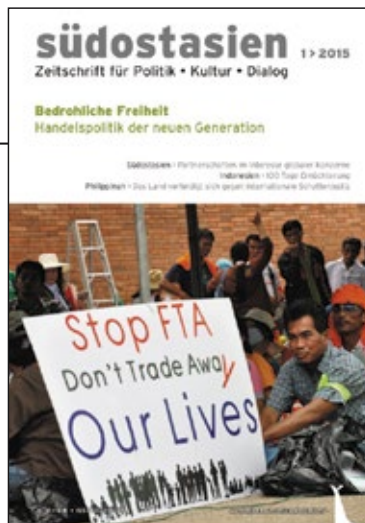
Das Onlineportal möchte eine differenzierte Auseinandersetzung mit China fördern. Es stellt Bildungsmaterial zu China für zivilgesellschaftliche Gruppen und kommunale Akteure zur Verfügung und stärkt damit deren chinaspezifische Kompetenz.

Warum Informationen zu China für NGOs?

Landgrabbing, Lebensmittelsicherheit, Rohstoffpolitik, Arbeitsrechte, wicklungspolitischer NGOs. China exportiert Nahrungsmittel, Europa unserer Zivilgesellschaft. China investiert in China, Chinesen spielt hier eine große Rolle. Chinesische und europäische NGOs arbeiten zunehmend an ähnlichen Themen - Klima- und Umweltschutz, Verbraucherschutz und ländliche Entwicklung.

Es gibt 1000 gute Gründe, sich mehr mit China zu beschäftigen und sich intensiver mit chinesischen NGOs auszustauschen.

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About this publication

This brochure is part of the larger project “China matters,” an information platform for German NGOs (www.eu-china.net, supported by the Stiftung Umwelt und Entwicklung Nordrhein-Westfalen). China’s significance towards a policy of global sustainability is growing steadily. European civil society takes little note of this. This brochure, then, aims at enabling the multipliers of development policy work, politicians, students, and NGOs to deal with the changing role of China in global sustainability.

Everyone who is involved in the field of agricultural policy must deal with the changing global role of China. Be it the milk crisis or the massive increase in trade of (GMO) soya beans, growing meat consumption or land grabbing issues – developments in China or caused through international investments made by the Chinese are found responsible.

This brochure provides an overview of Chinese civil society debates the necessary agricultural reforms and sheds light on current policies in the field of agriculture and agriculture-related issues (land property law/water policies). It focuses on those issues which are relevant to European civil societies and hopes to contribute to the exchanges between the major players of both regions’ civil societies. We aim to provide a bit of fundamental information on China’s agricultural involvement in Africa and South America. Chinese approaches to the GMO debate and new “biotech” low-carbon innovations complete this publication.

人本 Humane

公正 Socially just

环保 Environmentally sound



About the Stiftung Asienhaus

The Stiftung Asienhaus is committed to the implementation of human rights, the strengthening of social and political participation, as well as the protection of social justice and the environment.

The organization was founded in 1992 under the name “(German) Asia Foundation”. Its founder, Prof. Dr. Günter Freudenberg, and several other associations working on Asia joined together in 1995 in Essen and founded the Asia House. In October 2012, the Asia House moved its headquarters to Cologne