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Food Climate Research Network

China briefings
Summary, conclusions and policy implications

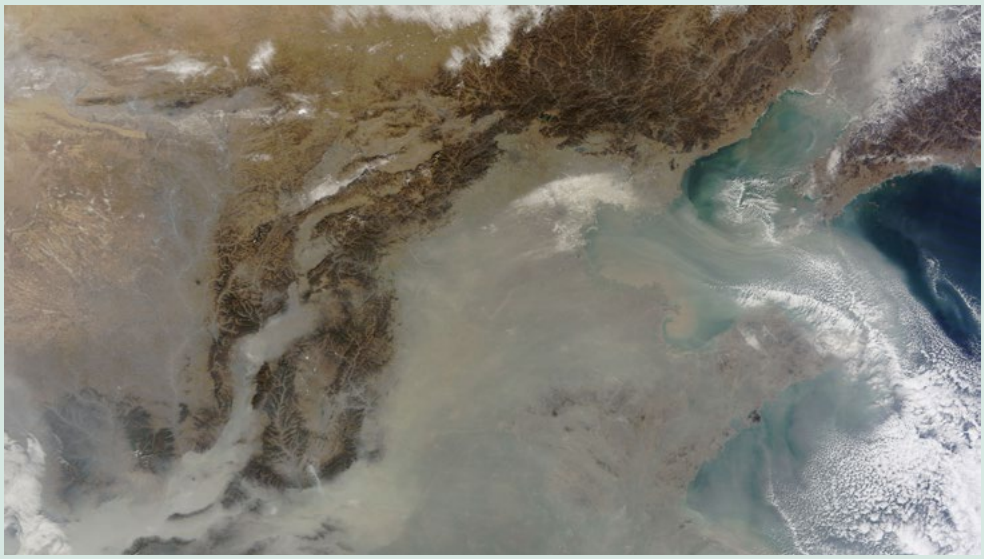

Photo:
Haze over eastern China

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Summary

China's food system is developing rapidly. Rising incomes, urbanisation, demographic change, agricultural policy reform, the growth of the livestock, horticulture and aquaculture sectors, and other drivers are combining to bring about significant changes in the Chinese food system. They affect how the food supply chains operate and the impacts they have on the environment and society. The last 30 years have seen agriculture's relative contribution to national GDP and employment fall dramatically. Nevertheless the sector has grown in real and absolute terms.

The food system in China is growing ever more complex and encompasses diverse forms of production (both smallholder and industrialised systems), retail (wet markets and hypermarkets) and catering (high end restaurants, street food, and fast food outlets, both domestic and international). The food system is now also international; international companies have a strong presence in China's markets, while Chinese food companies are investing overseas.

CHINA BRIEFINGS
OVERVIEW OF CHANGES AND DRIVERS IN CHINA'S FOOD SYSTEM

May 2015

Written by Huw Pohlner based on Garnett, T. and Wilkes, A. (2014) *Appetite for change: Social, economic and environmental transformations in China's food system.*

With thanks to the authors for additional comments and corrections.

These briefing papers are based on *Appetite for change*, written by the FCRN with the support of the Oxford Martin School and the Environmental Change Institute at the University of Oxford. Research for this report was funded by grants from the Department for Environment, Food and Rural Affairs (DEFRA) and Department of Business, Innovation and Skills (BIS) of the UK government, the Rockefeller Brothers Fund (RBF) and the World Society for the Protection of Animals (WSPA). Additional support for project workshops was provided by World Animal Protection and Oxfam (Hong Kong).

These rapid changes have brought with them major economic, social, environmental and health challenges. Environmental issues include land and water pollution, excessive consumption of water and energy, food waste, greenhouse gas emissions, and deforestation at home and abroad. As to health, while growth in the agricultural sector and in food output has led to major nutritional improvements, it has also generated new problems. Policymakers today not only have to contend with persistent hunger and malnutrition for a substantial minority but also with new problems caused by the shift towards 'Western' style dietary patterns, leading to obesity and associated chronic diseases. Rapidly rising rates of overweight and obesity are cause for serious concern; policies that synergistically address environmental and public health impacts of changing diets are needed.

Also in the realm of public health, widespread food safety concerns have become a target for policy intervention and may be shaping consumption choices. Further research is required to understand more about the potential impacts of consumer attitudes toward the environment, health and animal welfare on demand. The livestock sector warrants a special mention: having grown dramatically over recent decades, the sector now sits at the heart of linked environmental, animal welfare, public health and food safety concerns.

Stakeholders propose diverse policy options to meet the challenges of the future depending on their normative view of the system itself. Three key narratives about the system can be identified: the continued challenge of ensuring that China has 'enough' food; the need to improve the 'quality' of this food; and, the double-edged sword of enabling 'abundance' while avoiding 'excess'. Many of the challenges facing the Chinese food system are shared by food systems around the world but some are unique to China. All require policy responses that are holistic, informed by evidence, synergistic, targeted and coordinated.

Widespread food safety concerns have also become a target for public health policy interventions, and may be shaping consumption choices. Further research is required to understand more about how consumer attitudes toward the environment, health and animal welfare may impact demand. The livestock sector warrants a special mention: having grown dramatically over recent decades, the sector now sits at the heart of linked environmental, animal welfare, public health and food safety concerns.

Past and future trends and issues

Trends in impacts/issues

- The **environmental** impacts of food production are growing and are chiefly a consequence of:
    - Inefficient use of agricultural resources and a reliance on increasing application of inputs (e.g. fertilisers, livestock feed, drugs etc.); and,
    - Growth in livestock consumption and production, a sector that is resource intensive and contributes to both global and local environmental problems (e.g. GHG emissions, soil and water pollution and land degradation).
- **Health** priorities in China are changing: developments in China's food system have led to important reductions in hunger and malnutrition. However, they also create new problems due to the increasing prevalence of diet and lifestyle-related non-communicable diseases, with both immediate and future effects.
- The **food safety** impacts of changes in the food system stem from soil and water pollution, overuse of agricultural chemicals, and the use of food adulterants and veterinary drugs.

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- **Attitudes and expectations** around food are changing. Some changes, such as increasing consumption of processed foods and animal products, can be expected to drive future negative trends in health impacts. Others, such as increasing concerns around food safety and nascent attention to animal welfare, may support adoption of more sustainable practices.

Trends in contributing factors

- **Rising incomes** have enabled people to access more and better foods but excessive consumption has contributed to obesity and diabetes. The scale and economic impact of these health challenges, if not addressed, can be expected to increase in the coming years as incomes continue to rise. Rising incomes are also associated with shifts in consumption preferences. Supply chains and production practices may evolve to cater to new demands in ways that have unclear implications for health and sustainability.
- The scale of **urbanisation** in China since 1978 has been unprecedented and is associated with changing consumption patterns (particularly, higher intakes of meat, oils, fats and refined carbohydrates) that have health, economic, environmental and sector-wide impacts. Urbanisation has also reduced the number of agricultural workers, a trend that is amplified by an ageing population, which creates both challenges and opportunities for increasing labour productivity.
- **Agricultural policies** have been critical in addressing changing demands and increasing yields so as to ensure food security. Policies have been implemented to protect consumers from price shocks, and to facilitate scaling up and boost productivity across the sector. A variety of measures have been introduced, including significant financial support for inputs and investment, as well as institutional changes such as land reform. However, further policy efforts are required to progress land reform, reverse arable land degradation, reduce food safety risks and ensure the long-term environmental sustainability of agricultural production while also enabling a transition towards healthier consumption patterns.
- Changes in the **livestock sector** have added economic value to the agricultural sector as a whole but have also driven environmental degradation through soil and water pollution, overgrazing, increased greenhouse gas emissions and pressure on water resources. These impacts also carry economic costs. Some of the connections between the livestock sector and its broader impacts are summarised here:
    - Higher meat intakes are linked (alongside other consumption trends) to a rise in obesity and chronic diseases;
    - Livestock products have been implicated as a major cause of food safety concerns;
    - Growth in the livestock sector is heavily reliant on feed imports, with possible environmental and social impacts in exporting countries; and,
    - Livestock account for a considerable proportion of China's agricultural GHG emissions. Direct livestock emissions are estimated at 6% of China's total emissions, and around 10%-15% of China's cropland emissions are driven by feed demand.

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Narratives about the food system

- China's food system is a topic of intense interest for diverse stakeholders, who often speak about the system in different ways. Three broad narratives can be identified; these provide different perspectives on the problems facing China's food system and the potential ways forward:
    - **'Enough' food** – Although China has shown that it is able to feed itself to a greater extent than some commentators feared, narratives about food supply and sufficiency continue to resonate because:
        - There is growing recognition that short-term strategies to produce enough food may undermine long-term food availability through the negative environmental impacts of current production and sourcing patterns;
        - Food security as a concept is evolving – it is increasingly seen as incorporating objectives around diversity and quality; and,
        - China's livestock sector is very reliant on feed imports and, for some commodities, is highly exposed to changes in key supplying countries.
    - **'Quality' food** – This narrative includes concerns about food safety and nutritional quality, and incorporates connections between human wellbeing and environmental sustainability.
    - **Food in 'abundance' or 'excess'** – Greater abundance of food has increased people's quality of life but has also brought new challenges and risks, including inefficient resource use and environmental damage, food waste, health problems associated with shifting consumption patterns, and social concerns.
- Each of these narratives offers one perspective that can inform discussions on future food system priorities – enough food for people now and in the future; safe and nutritious food that does not harm the environment; abundant and diverse foods that do not undermine good health or the long-term sustainability of the food system.

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Addressing policy challenges and the role of research

Although many government policies have been developed to address the environmental, health and food safety issues arising from food systems change in China, many policy challenges remain. The following approaches and perspectives may be worth considering:

- Food supply chains are often long and complex; a **life cycle analysis** approach can help decision makers understand impacts across the system and identify where trade-offs are required.
- A **food systems perspective** (see 'Overview of changes and drivers in China's food system') can show how different issues requiring policy attention are interconnected and can help identify common drivers.
- While trade-offs may need to be made in some areas, substantial opportunities exist to achieve **synergies across diverse policy domains.** For example, policies to moderate meat consumption can yield both environmental and health benefits.
- **Prioritising objectives** is difficult but unavoidable in many areas and clear vision is required as the basis for those prioritisations.
- A **scenarios development approach** can be useful in exploring the possible future implications of current trends, and in identifying where policy interventions may help give rise to more positive future outcomes.
- Western experience suggests that 'soft' measures (e.g. education and awareness-raising) to encourage people to break with unhealthy dietary patterns are of limited use and China may need to consider **stronger measures** (e.g. fat and sugar taxes and public procurement standards); these could be oriented towards improving both public health and environmental sustainability.
- The diversity of China's agro-ecosystems and its uneven economic development may require **differentiated and targeted policies** that take into account the specific challenges, needs, resources and capacities of different regions, producers and consumers.
- Poor coordination between government agencies has been a major obstacle to effective policy implementation in the cross-sectoral realm of food policy; **greater coordination** at both the national and local level is required.
- More research is required on ways to **address barriers to effective policy implementation**. For example, economic incentives faced by producers and local governments often run counter to policy objectives, limiting technology adoption, despite policy encouragement.
- More analysis is required of the relationship between **scaling up** production and environmental, economic and food safety impacts.
- Given the scale and complexity of the challenges that China's food system faces, and its international relevance**, international collaboration and new research partnerships** could be useful in generating new knowledge.

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The FCRN is supported by the **CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS)**, a 10-year research initiative of the CGIAR, the **Oxford Martin Programme on the Future of Food** and the **Esmée Fairbairn Foundation**.

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