

Strategic Analysis Paper

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China's Quest for Nutritional Security

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Key Points

- Nutritional security is becoming an important facet of Chinese food security.
- Iron–deficiency anaemia is one of greatest challenges to China's nutritional security
- The Chinese working population will shrink relative to its elderly population out to 2050. Improved productivity per capita is needed to make up for this deficit.
- Since anaemia leads to losses in economic productivity, nutrition–based food security strategies, especially in rural provinces, are needed.

Summary

Nutrition needs to become a central policy consideration in China's broader food security strategy. China's working population (15 – 60 years old) is set to recede out to 2050 while its elderly population (over 60 years old) is expected to become the largest group in the country by the same date. A smaller working-age population is likely to lead to labour shortages, which is why the government must ensure its population has food rich in protein, iron, vitamins and zinc to safeguard maximum productivity. Stronger nutritional efforts need to be made in rural China, particularly with children. These provinces will prove a valuable source of migrant labour and, if nutritional deficiencies are not addressed, they will present an economic burden on health services out to 2050.

Analysis

As part of China's food security strategy, nutritional security is rarely a talking point. As a country whose history has been intermittently chequered with famine, China's food security has traditionally been based on self-sufficiency through self-reliance. This mentality changed as policymakers realised that agricultural practices, such as fertiliser overuse to increase grain production, and the reduction of arable land, mainly due to urbanisation, had derailed efforts to become food self-sufficient. Nonetheless, China has maintained a commitment to 95 per cent self-sufficiency in grains. After failing to achieve this policy goal in 2014, it implemented the "Domestic Supply with 'moderate imports'" policy which legitimised foreign agricultural imports as a way of ensuring grain self-sufficiency. [Analysts](#), however, contend that around the same time China proved itself to be a net importer of food, unable to pursue its self-sufficiency aims.

The nutritional value of food, as opposed to the amount of food being produced or imported into a country, has historically been ignored and disregarded as a measure of food security. According to [some](#) food policy experts, countries like China need to start thinking about food security in terms of calories and nutrition instead of simply having enough food; just because foods weigh the same does not mean they are nutritional equals. A focus for China should be tackling one of the most prevalent nutritional disorders affecting the country: iron-deficiency anaemia (IDA). Anaemia is a low level of haemoglobin in the blood cells which correlates with a lower number of red blood cells. Red blood cells carry oxygen and with less oxygen reaching the body's cells, tiredness, lethargy and heart problems result in a drop in performance levels. A lack of vitamin B12, iron deficiency and sickle cell anaemia all cause the health disorder, but iron deficiency is often the main culprit. China's working population is receding and the elderly population is growing, which is why less people, out to 2050, will be required to be more productive. The rural migrant labour supply could be better utilised, however, poor nutrition is an obstacle that needs to be addressed if progress is to be made.

The Importance of Iron-Deficiency Anaemia and Nutrition

National Economic Performance and Population Productivity

Though it may appear a relatively niche topic, IDA is one of the most pressing nutritional issues across the globe. Poor nutrition negatively affects the working performance of an individual, both physically and intellectually, and puts pressure on population growth. The economic performance of a country is often determined by its industrial base, the size of its population or the level of access it has to modern technology. An often underrated aspect of a country's economic potential, however, is individual productivity, which is partly determined by nutrition. According to a World Bank report, losses in productivity caused by malnutrition are three fold:

- Direct losses in physical productivity
- Indirect losses from poor cognitive losses and loss in schooling
- Losses in resources from increased health care costs

The importance of nutrition to the Chinese workforce will become apparent by 2050, if not sooner. China is set to get older before it gets richer which is why it's shrinking workforce needs to focus on being as productive as possible. According to the WHO 'over the next 25 years China's elderly population is expected to more than double from 12.4 per cent (168 million) in 2010 to 28 per cent (402 million) in 2040.' The 70–74 age bracket will be the largest group in the country by 2050. There will be, however, 43 per cent less people aged 15–24 in 2050 than there were in 2010. According to the World Economic Forum, the working population, having reached 925 million in 2011, is expected to decline to some 225 million people in 2050. While China will still have one of the biggest workforces in the world in 2050, the probable 500 million elderly people will put a tremendous burden on its economy.

China's economy has grown massively over the past decades and for the government to continue this growth, more people, especially from rural areas, may be required to move to urban centres and work. China's rural population is set to grow by 2.6 per cent over the next 15 years (with a reduction in the last five years) while others estimated that China was supposed to have used up most of its migrant labour by the second decade of the 21st century. Given the government's urbanisation plans, it is possible that the rural population could decline out to 2050.

China is now preparing for this transition in both urban and rural centres. Since the labour supply is expected to recede, China's long-term growth is predicated on higher productivity from the existing labour pool. Nutrition, in particular iron-deficiency, will be a critical component in unlocking the population's maximum productivity. Eliminating anaemia has a number of economic benefits. According to the World Bank, 'a 15–17 per cent increase in adult productivity, which adds up to two per cent of GDP in the worst affected countries', is possible when anaemia is abolished completely. People are more energetic, are less susceptible to diseases like cancer or arthritis and, because of their improved diet, are less likely to take consecutive sick days. The same report argues that malnutrition, height and weight all affect individual productivity. Studies in Brazil and the United States point to a connection between height and weight in adults and wages even after education was controlled. In Brazil, for example, a one per cent increase in height translated to a four per cent wage increase. The report continues by saying that 'low birthweights may reduce a person's IQ by 5 percentage points. IDA consistently reduces performance on tests of mental abilities (including IQ) by eight points or 0.5 to 1.5 standard deviations in children.'

A Focus to 2050: Rural Nutrition

China's nutritional security strategy will not only need to focus on the wealthy coastal population, but on the 650 million people living in China's rural areas. The effects of IDA are more widespread in the west and south-west of the country and this combined with the country's rapidly ageing population (which is also disproportionately affected by IDA) will strain the national economy. Improving nutritional investments in rural provinces will enable them to unlock their economic potential and free up national health services. While China has managed to reduce urban poverty, with around 1.6 per cent of urbanites living under the poverty line, rural poverty remains prevalent, with around one in ten rural dwellers still

in poverty. With immigration not being an option and the country's lacklustre birth rate failing to meet targets, the government may be compelled to inject its shrinking workforce with migrant labour not just in urban centres but in western or southern provinces.

Before it does this, the government will need to address the rampant malnutrition that is holding the rural population, particularly children, back. According to some, China's rural problem is nutrition. A study looking at levels of anaemia in Qinghai, Ningxai, Shaanxi and Sichuan Province of students 8–12 years of age, found that 34 per cent of children were anaemic. Given those results, the report argues 'that there are an additional 30-50 per cent of students that are iron-deficient.' Even though the WHO states that any population with an anaemia level breaching five per cent must be treated immediately, there is evidence to suggest these children have been left behind by the government and their guardians. The same report cites a previously completed survey that found that 90 per cent of school principals at sample schools admitted that anaemia was not a major health concern or that they did not know what IDA was.

A denial of the problem means officials are ill equipped to deal with it. This needs to change if the government has any desire of extracting economic potential from its citizenry. Some analysts believe that spending on early childhood education and health pays off for society more than spending on adult education. According to a paper published in *Science*, 'the gross domestic product lost to stunting can be more than a country's spending on health.'

As birth rates founder and immigration is cast aside as a viable population-boosting supplement, the Chinese Government may have to tap into its rural population to boost the labour pool. Some argue that a tighter labour market will mean high manufacturing costs and that an older labour market will mean lower productivity. The government needs to tap into its youth, both rural and urban, to offset these challenges. The government needs to invest in education and health in its rural population to alleviate market stresses and social safety burdens. Urban progress has been made, but further advancements in rural IDA could present Beijing with a fresh pool of labour.

Micronutrient Deficiencies in China: A Focus on Anaemia

Anaemia is an enduring yet under researched public health problem in China. According to the World Health Organisation (WHO) iron deficiency is the most common nutritional disorder in the world. Around two billion people – over 30 per cent of the global population – are anaemic. Iron deficiency affects both the rich and the poor, reduces the work capacity of those affected and can leave the anaemic vulnerable to other diseases like AIDS/HIV and malaria.

Statistically speaking, it is hard to document anaemia in China. The sheer size of its population and the rural-urban disparity makes it difficult to gather accurate data. The most recent reports were conducted some time ago, but nonetheless reveal that China's population still suffers from severe anaemia. Studies and surveys conducted over the last ten to 15 years have revealed that while the number of those affected by IDA is declining, it remains a prevalent threat, especially in rural regions.

In [2002](#), according to the China National Nutrition and Health Survey, the overall prevalence of anaemia was 20.1 per cent with around 245 million people estimated to be effected, 208 million of which were affected due to iron deficiency.

In 2009, a [study](#) suggested that 13.4 per cent of the population of Central and Eastern Asia was anaemic with around 180 million people afflicted with the health disorder. Rising incomes and better living standards were attributed to the decline and researchers found that there was a correlation between lower levels of iron deficiency and an improved diet rich in zinc, iron and protein. Nonetheless, rural and migrant populations were still disproportionately affected relative to urban centres. According to the study, anaemia rates ranged from 20–50 per cent in rural school children in western China and that anaemia rates were around 50–70 per cent among six to 12 month old babies in Qinghai and Yunnan Provinces. If the anaemia rate is as high as it is among these subgroups, then it is possible that the anaemia rate is highly prevalent in the west and south-west regions of China.

This year an [examination](#) of the 2010–2012 National Nutrition and Health Survey found that over the last ten years, anaemia levels among rural residents had fallen to 9.7 per cent but still remains prevalent in some communities. Though the IDA levels in women aged 18–44 has improved, it is still the highest out of all age groups. The issue has gained international attention with the World Health Assembly proposing efforts to reduce anaemia in ‘women of childbearing age’ by 50 per cent before 2025. The rate of anaemia is particularly concentrated among the elderly and rural children. Since a third of China’s population by 2050 will be elderly, more ground needs to be gained in this area. In 2014, China became an ageing society, with the elderly population increasing to around 200 million people. According to the 2012 National Nutrition and Health Survey, China’s elderly population is expected to grow significantly out to 2050 and will constitute at least a third of the population.

The latest statistics were taken from a rural–focussed study, but, given the economic gains made in urban areas, it can be assumed that anaemia in these areas has been significantly reduced, especially since rural IDA has seen reductions.

Statistics gathered over the last 10–15 years reveals why nutrition needs to be taken more seriously as the composition of the population changes out to 2050. Since the removal of the one–child policy in 2015, China has projected that an additional three million babies will be born annually over the next five years. If these projections prove to be correct, the increased youth population will help to arrest the huge age deficit arising in the country and increase the number of people who will be of working age around the time China’s elderly are set to dominate the demographic landscape. China will not be able to repopulate its working population with healthy and productive people if children and childbearing women, as some of the largest IDA–afflicted groups, are not given adequate education health services and nutritious food.

Conclusion

Nutrition will become a fundamental focus point for Beijing out to 2030 and on to 2050. China has released two major documents titled “China’s National Program for Food and

Nutrition (2014–2020)” and the “National Nutrition Program (2017–2030).” Both address nutritional challenges, with the latter focussing intently on reducing anaemia in children and pregnant women and reducing nutritional deficiencies in people’s diets. Though there are a number of solutions on hand, such as artificial intelligence and robotics to minimise the effect of China’s retreating labour pool, nutrition should not be ignored. A greater nutritional investment in the rural poor could ease labour market tensions, or, at the very least, ease the burden they will inevitably have on the country’s economy. A largely unenergetic and unproductive population disconnected from the coastal east is not a recipe for national success.

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