

YULIAN LI



China must protect high-quality arable land

Figures from a national survey of land use seem positive, but the effort exposed some worrying trends, says Xiangbin Kong.

According to the Chinese government, China needs a minimum of 120 million hectares of arable land to feed its people. That is the 'red line' for food security that officials have pledged to protect.

So it may seem like good news that the most recent comprehensive survey of national land use in China has reported a healthy surplus — some 135 million hectares of the country are classed as planted with crops — rice paddy fields, irrigable land and dry farms. Simultaneously, total grain production hit a record 602 million tonnes in 2013, after a decade of continuous growth.

I fear these figures are not as positive as they seem. Moreover, I worry that they may create a false sense of security and encourage policy-makers to relax efforts to protect China's arable land. We should not be misled by the superficial surplus. The story is not so simple. Although the quantity of arable land in China seems healthy, there are serious concerns about its quality — and of its ability to supply future generations with enough food.

I was involved in the land-use assessment — the second National Land Resource Survey of China — and am pleased to see the results published and discussed. The survey completed its work in 2009, but the previous central government declined to publish the results, because members did not agree with the findings of the first such survey, finished in 1996.

This is not unusual. Surveys to classify large areas of remote land are difficult. A study published in December suggested that the area of cropland abandoned since 1990 in western Russia, Belarus and Ukraine has been severely underestimated.

When President Xi Jinping came to power in 2012, he investigated the discrepancy in the Chinese figures and decided that the results of the second survey were robust, because they are based on high-resolution remote sensing and backed up by investigation on the ground. He authorized China's land and resources ministry (MLRC) to release the results at the end of 2013. At a press conference on 30 December, officials from the MLRC pledged to continue to protect arable land, and reinforced their commitment to the food security red line.

Beyond the headline figures, there are some worrying trends. Although the overall area of arable land has increased in the time between the two surveys, the quality of the land, and so its suitability, has decreased. Some 3 million hectares of high-quality arable land and some 1 million hectares of paddy land have been built on or converted to urban use in just over a decade. More than 3 million hectares have been contaminated with pollution. The effects were shown starkly last year, when heavy metals such as cadmium appeared on the tables of restaurants as a result

of rice being planted in polluted fields in Hunan province.

Arable land lost to development and contamination is frequently replaced by marginal and lower-quality alternatives — although land surveys such as ours do not distinguish between them. Of the land identified as arable in the latest figures, more than 4 million hectares in the southwest of the country are high in the mountains. And almost 6 million hectares are in converted forest and grassland in the north, an ecologically fragile flood zone. Broadly, there has been a shift from growing crops in China's warm and humid south to the less suitable cold and water-limited north.

The amount of available land has peaked. There is no spare high-quality arable land that can be cultivated as existing farmland is lost to development. Further conversion of grassland and forest produces low-grade alternatives, at great ecological cost. Rather than signalling security, the new land-use figures show that China is overusing its remaining high-quality arable land. It is growing more food on less land, a situation that leaves little scope for expansion — and little in reserve as water shortages reduce yields in the north still further.

China needs to act to preserve its remaining high-quality arable land by classifying tracts of land as for permanent arable use, particularly in the southeast and in the suburbs of big cities. Restrictions should be put on development there, and greater efforts made to prohibit the agricultural conversion of marginal land in the north. Together, this would slow the agricultural shift towards the north and buy China some time.

China should also rethink its existing protection policy for arable land, which contributes to the problem because its programmes focus only on individual administrative regions. Instead, China should set aside crop production 'priority zones' at a national, provincial and county level on the basis of the arable land's potential grain productivity and distribution.

These zones should introduce protection for other types of farmland, increase the subsidies paid to households that increase crop production per hectare, and make available funds for reclamation and restoration of degraded land to produce crops. This is a key point. China must work harder to improve the quality of low- and medium-grade arable land, which the country will increasingly rely on to feed itself. Better rural roads, forest management, and more irrigation canals and ditches are less newsworthy than headline announcements about record crop production, but, in the medium and long term, they will be more useful. ■

Xiangbin Kong is a land-use scientist at the College of Resources and Environment, China Agricultural University, Beijing.
e-mail: kxb@cau.edu.cn

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