



## China's scientists must engage the public on GM

The country's shifting stance on genetic modification for crops needs the support of researchers to persuade a sceptical public, says Qiang Wang.

China is about to get serious on the use of genetic modification (GM). After years of uncertainty, funding cuts and public arguments, the country's central government has issued a clear edict: China needs GM, and it will work to become a world leader in the development and application of the technology.

The intent is signalled by the government's first policy document of the year. Issued on 1 February, the state's No. 1 Central Document pledges more government support for research on GM techniques, especially for crops. China has expressed similar enthusiasm for GM technology before, and then backed off in the face of public protest. The policy document shows that the Chinese government does not want that to happen again. The document highlights the need for comprehensive studies to make sure that the technology is safe to use, and it also stresses that Chinese scientists must do more to convince a sceptical public of its benefits.

The new responsibility placed on Chinese researchers to communicate with the public is a significant and positive step forward. It could help to counter the widespread and irrational fear in China that GM food is unsafe to eat. A 2010 online poll of nearly 50,000 Internet users conducted by the news portal *China Daily* found that 84% would not choose GM food for safety reasons. Irrational opinions have sometimes been so strong that scientists have been intimidated and shied away from speaking out. They fear the 'soft violence of violent language' that is too often directed at researchers who simply advocate the commercialization of GM technology.

China cannot afford to turn its back on GM. Policy-makers are right to include the technology in a new agricultural model for the country. To be self-sufficient, China must grow food for nearly one-fifth of the world's population, with access to just 6% of the world's fresh water and 7% of the world's arable land. In recent decades, China has performed heroic and produced more and more grain — nearly doubling production between 1978 and 2013. But at what cost? The increase was driven by a sixfold rise in the use of chemical fertilizers, which pollute the land and water. Despite China's reputation as a global factory, national reports identify agriculture, not industry, as the biggest source of pollution.

GM technology has the potential to produce more food with less pollution. Without it, China seems likely to become more dependent on imports to feed its people. China imported a record 90 million tonnes of grain last year; cereal imports were up one-third on 2013.

Chinese policy-makers recognize the appeal of GM technology, but must address hostile public opinion. Official announcements on the

subject in 2014 even neglected to use the term, preferring instead the euphemism 'molecular breeding'. This might seem surprising given the Chinese government's intolerance of dissent on some issues. But GM technology is seen as a less politically controversial topic, and one with more flexibility for public opinion to steer policy. As a result, China's GM-crop-planting areas have declined since the late 1990s. Brazil and India now grow more GM crops than China. Funding has also been cut: money for major GM-seed cultivation programmes was cut to 400 million yuan (US\$63 million) in 2013, down from 2 billion yuan in 2010.

Although China imports substantial amounts of GM products — maize (corn) and soya bean among them — it grows only cotton and papaya commercially. Cultivation of GM staple food crops, including rice, is banned, despite the government declaring in 2009 that two GM rice varieties were safe to grow.

The new central document does not introduce specific policies or commitments to boost GM cultivation. These are likely to come later, from specific government agencies. But the decree is an important and influential signal of the state's intentions. Similar documents issued in the early 1980s, for example, accelerated land reforms, and catalysed the dismantling of Mao Zedong's collective ownership of farms. This is widely seen as the start of broader changes in Chinese society, from a planned to a market-based economy.

China needs a similar shift in its attitudes to GM. Despite their enthusiasm for GM technology, and their awareness of its importance for domestic agriculture and food production, the Chinese authorities have so far failed to weigh

in on the very public debate over its safety. But it now looks as though that will change.

Most scientists in China work directly or indirectly for the government. Traditionally, these researchers have not been given, or been encouraged to take on, any broader social duties or responsibilities. The latest step could see Chinese scientists talking to the public about GM, as part of a wider effort to overturn scepticism and hostility.

The popularity of social-media sites such as WeChat, which has around 400 million registered users in China, and Weibo (the Chinese version of Twitter) gives researchers a new way to enter into genuine and respectful dialogue over the true risks and benefits of GM. If China is to make good on its intentions to boost its GM efforts, then more scientists speaking up is a good place to start. ■

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