# Cotton in China—a giant with intensive sustainable smallholdings run by women

hina has been the world's top cotton producer for more than 20 years. CIRAD conducted surveys in Hebei and Jiangsu provinces, in collaboration with its Chinese partners, to assess smallholder cotton production patterns. Structurally, China is still a cotton importer. The adoption of genetically modified cotton varieties has not altered this situation because of the tiny size of farms. Chinese family agriculture is highly resilient due to diversification of farm family income sources, and labour reorganization, with women taking on a key role—this flexible setting should enable China to maintain its top world cotton production ranking.

Women—the main full-time farmers (Hebei province). © M. Fok

#### Fibre (t) Area (ha) Cotton area and fibre production patterns since 1981. 8 000 000 7 000 000 6 000 000 5 000 000 4 000 000 3 000 000 2 000 000 1 000 000 1985 1990 1995 2005 \_\_\_\_\_ Total area \_\_\_\_ Total prod. \_\_\_\_\_ Yellow R. prod. Yangse R. prod. - Xinjiang prod

## Cotton production in three expansive areas

In China, cotton was grown on an area of almost 5 million ha in 2005. Crop yields are amongst the highest in the world, i.e. around 3 500 kg/ha of seed cotton.

The Yellow River Valley is the traditional cotton-growing area, and it is also where genetically modified varieties are the most widely cropped. The autonomous region of Xinjiang, a dry area in western China, currently accounts for more than a third of the national cotton production. Further south, in the Yangtze River Valley, cotton is hampered by having to be integrated in systems with two to three crop cycles.

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Farmers using their own vehicles to deliver harvested cotton to a buying centre (Hebei province). © M. Fok

### Intensive technically-advanced cotton production

High sustainable crop yields are achieved through supplementary irrigation, plastic mulching and application of high dosages of inputs (fertilizers, pesticides, growth regulators). There is also high labour investment on garden-sized plots, for transplanting, weeding and topping plants after the fruiting stage.

The government has long been subsidizing cotton crop intensification in various ways with the aim of reducing input expenditures. Substantial decentralized research is also being supported, which has given rise to many

original and widely adopted innovations (transplanting techniques; cotton growth regulation systems; genetically modified varieties containing two complementary genes, including one Bt gene; and hybrid varieties). The cotton industry was liberalized after the mid-1990s and crop intensification strategies are still being implemented despite the high cost to farmers.



Tiny part-time farms managed by women

Chinese farms are generally a few thousand square metres in size (0.3-0.6 ha). An average farming family consists of three to four members, but only one to two of them actually work in the crop fields. Women seldom have a salaried job outside of the family farm, so it could be stated that farming is now generally managed by women and elderly people.

CIRAD's surveys conducted in Hebei and Jiangsu provinces revealed that farming is no longer the main income source of farming families. Nonagricultural income enables farmers to practice intensified cropping and to sell their farm produce when the prices are most favourable. This factor

enhances their resilience. The gap is widening with urban dwellers, but farmers' living standards are improving, as many households are now equipped with various appliances (TV, washing machine, microwave oven, residential phones and cell phones).

#### For further information

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#### Partners

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Home of a farmer involved

in input distribution

(Jiangsu province).



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