

In 2010

- Myanmar became the 13th country to commercialize Bt cotton in the world, the fifth country in South and South East Asia, and the 29th country in the world to commercialize biotech crops in 2010.
- A long staple insect resistant Bt cotton variety named "Silver Sixth" or "Ngwe chi 6" was planted by 375,000 farmers on about 270,000 hectares (0.7 hectare per farm), equivalent to 75% of all the cotton grown in Myanmar.



- Traditionally, cotton farmers grew indigenously developed varieties of *Gossypium arboreum* until the large scale commercial adoption of upland cotton varieties of *Gossypium hirsutum* in the 1960s.
- A long staple variety named 'Silver Sixth', popularly known as 'Ngwe chi 6' was developed in Myanmar in 2001 to contain the Bt gene.
- The successful field trial at the Mandalay Research Facilities in 2006-2007 resulted to farmer adoption of the variety on 8,300 hectares in 2007-2008, 140,000 in 2008-2009, 270,000 hectares in 2009-2010 and 2010-2011.
- The yield of short staple conventional cotton has grown at only 2.5% per year whilst the yield of long staple cotton has doubled since the introduction of Ngwe chi 6 in 2006-07.

Biotech Cotton Adoption

- Cotton is traditionally grown in the central zone of Myanmar and is the principal fiber crop of the country, occupying about 350,000 hectares.
- Approximately half a million farmers (an estimated 503,566 farming 368,000 hectares in 2007) cultivate an average 0.7 hectares of cotton per farm.

Status of Biotech Crop Regulation and R&D

- Current Laws that may facilitate the introduction of regulatory biotech and biosafety laws include the Essential Supplies and Services Act, the Pesticide Law, the Plant Pest Quarantine Law, the Seed Law, the National Food Law, and the Animal Health and Development Law.

Population: **50.5 million**
 GDP: **US\$26.5 billion**
 GDP per Capita: **US\$635**
 Agriculture as % GDP: **50.3%**
 Agricultural GDP: **US\$13.3 billion**
 % employed in agriculture: **70%**
 Arable Land (AL): **10.6 million hectares**
 Ratio of AL/Population*: **0.7**

*Ratio: % global arable land / % global population

Major crops:

- Rice
- Pulses
- Beans
- Sesame
- Groundnuts
- Sugarcane
- Cotton

Commercialized Biotech Crop: **Bt Cotton**

Total area under biotech crops in 2010: **270,000 Hectares**



Yield Benefits of Bt Cotton

- The increase in income in using Ngwe chi 6 can be up to three times the income of competing crops such as beans, pulse and sesame, and can even be higher than the income from rice.
- Yield of long staple cotton has risen steeply from 2007 (coincides with introduction of Bt cotton Ngwe chi 6) to 2009 whilst the yield of the short staple cotton has remained stagnant.

- The National Biosafety Framework (NBF) was developed in accordance with the Cartagena Protocol on Biosafety (CPB) that was signed by Myanmar on 11 May 2001 and is pending approval by the legislature of Myanmar.
- Efforts are being made to strengthen the human resources and train manpower in biotechnology areas including agriculture, pharmaceuticals, fermentation and industrial biotechnology in the country.



Excerpts from:

James, Clive. 2010. Global Status of Commercialized Biotech/ GM Crops: 2010. *ISAAA Brief No. 42*. ISAAA: Ithaca, New York.

Other Sources:

The World Bank. <http://www.worldbank.org/>
Food and Agriculture Organization of the United Nations.
<http://www.fao.org/countryprofiles/>

For more information, contact:

ISAAA SEAsiaCenter
c/o IRRI, DAPO Box 7777
Metro Manila, Philippines
Phone: +63 2 845 0563
Telefax: +63 49 5367933
Email: knowledge.center@isaaa.org

Or visit: <http://www.isaaa.org/>