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GM CROP TECHNOLOGY FACT SHEET

In the fifteen years since 1996, adoption of GM crops by farmers worldwide has been on a scale unprecedented in the entire history of agriculture with documented social, environmental and economic benefits[1]

GM crop technology represents the most sustainable form of crop productivity intensification presently available, and only a very limited percentage of all available options have been exploited so far – whether crops or traits. The pace of fundamental discovery research (new gene functions) far outstrips present capacity to convert this knowledge into new traits in different crops. Much more investment and durable public private partnerships are required to close this "application gap" and deliver new crop varieties for new environments and purposes.

In 2011, 1.25 billion hectares were planted with GM crops in 29 countries worldwide, notably by 16.7 million resource-poor small- holders in developing countries. The aggregated data 1996-2011 show significant environmental and socio-economic benefits:

1. A 2011 study showed GM traits have added 83.5 million tons of soybeans, 130.5 million tons of corn, 10.5 million tons of cotton lint and 5.5 million tons of canola to global productivity;

2. There have been substantial economic benefits at the farm level amounting to $14 billion in 2010 alone and increases in crop production and value of $78 billion for the fifteen year period since 1996 of which 40% were due to reduced production costs and 60% through production gains of 276 million tons.

3. The share of the farm income gains cumulatively (1996-2010), has been about 50% each for farmers in developing and developed countries, but for the first time in 2010, income gains were higher in developing than developed countries;

[1] James, Clive. 2011. Global Status of Commercialized Biotech/GM Crops: 2011. ISAAA Brief No. 43. ISAAA: Ithaca, NY.

4. GM crops have contributed to significantly reducing the release of greenhouse gas emissions from agricultural practices resulting from less fuel use and additional soil carbon storage from reduced tillage with GM crops. *In 2010, this was equivalent to removing 19 billion kg of carbon dioxide from the atmosphere or equal to removing 9 million cars from the road for one year;*

5. GM crops have reduced pesticide spraying (1996-2010) by 443 million kg a.i. and as a result decreased the environmental impact associated with herbicide and insecticide use on the area planted to biotech crops by over 20%;

6. Herbicide tolerant GM crops have facilitated the adoption of no/reduced tillage production systems in many regions, especially South America. This has made important contributions to reducing soil erosion and improving soil moisture levels.

7. ***If GM technology had not been available to the (14 million) farmers using the technology in 2009, maintaining global production levels at the 2009 levels would have required additional plantings of 3.8 million ha of soybeans, 5.6 million ha of corn, 2.6 million ha of cotton and 0.3 million ha of canola. This total area requirement is equivalent to about 7% of the arable land in the US, or 24% of the arable land in Brazil[2] .***

[2] GM crops: global socio-economic and environmental impacts 1996-2009. Brookes, G., and Barfoot P., PG Economics Ltd., UK (2011).