

**SUMMARY OF THE FSN FORUM DISCUSSION TOPIC  
GENETICALLY MODIFIED ORGANISMS AND FOOD SECURITY  
FROM 31TH MAR TO 9TH MAY 2008**

## **I. ISSUES**

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- The majority of the research and development for genetic crops has been based in developed countries and on commercial cash crops with little discussion on smallholder/ local community needs and production (K. James).
- Despite many available studies, there are not enough studies on the impact of particular GE crops on small-scale farmers in developing countries and more should be done (G. Gruere).
- Focus the discussion of GMOs on developing countries has two distinct disadvantages (G. Kent):
  - it makes it more difficult to see that there are similar issues in developed countries;
  - It makes it more difficult to see that the problem is really global in scope and structure. Any study that focuses on the national level will have difficulty seeing the global relationships at work.

## **II. GMOs BENEFITS**

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- Genetically modified (GM) food crops have the potential to raise agricultural productivity (FSN Forum team).
- The greatest cited benefit among technology users was **operational, including timing and efficacy of weed control, facilitating farming of a larger land base**. According to a survey in 2003, among 10 ranked benefits, increased yield was 6th and increased revenue ranked last (E. A. Clark, cited by I. Nuñez).
- The effects of GM crops on smallholder farmers largely vary depending on the particular cases, and that no generalization should be done. But the overall overview is relatively positive. GE crops could deliver benefits to small scale farmers, but that there was a large variance across cases, including exceptions where they were not effective (G. Gruere).

## **III. GMOs RISKS AND CRITICS**

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- About 99 percent of GM land on the planet is sown to just two traits - herbicide tolerance (HT) and Bt, which causes plants to synthesize their own insecticide. There is **no trait about quality** (E. A. Clark, cited by I. Nuñez).
- Among the risks of greatest concern are loss of markets, loss of farmer rights under the Technology Use Agreement, higher seed costs and lawsuits (E. A. Clark, cited by I. Nuñez).
- GMOs involve **more pesticides & increasing application of chemical fertilizers**. However, over the long term, it has been proven that effective pest suppression and increased crop yields are a function of proper farming methods, not increased agronomic input (P. Hartmann)
- There are various risks in growing the first generation GM crops, especially for the **control of agriculture and food by few, powerful and uncontrollable companies**. These risks are

considerably increased especially when transformation events are for pharmaceutical products. There are serious difficulties to evaluate and control these risks in rich countries that dispose of much more facilities and means.  
(M. Ferry).

- Genetically modified plant, especially the Bt Cotton, caused the apparition of resistant insects and the substitution of targeted pests by secondary pests that become serious pests (M. Ferry).
- Genetically modified food crops are associated with the risk of market access losses in sensitive importing countries (Forum team).
- Even when GM technologies generate benefits, there is a centralization of power and, correlated with that, a steady concentration of the profits in fewer hands. The primary producers are increasingly marginalized: their share of the overall benefits is steadily reduced. **For the farmers** themselves, in the end **the benefits may be illusory** (G. Kent).
- In a survey of how Canadian farmers have been impacted by GM technology, a Canadian farmer said that the loss of [European] markets due to GM had a huge financial impact and that it was likely larger than the cost of controlling volunteers or benefit of easy weed control (E. A. Clark, cited by I. Nuñez).
- GM technology can lead to bad environmental and economic consequences (M. Ferry).

#### IV. RELATED STUDIES /ACTIVITIES

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- IFPRI's comprehensive review of the literature on the economic impact of GE crops in developing countries (G. Gruere)
- A workshop with economic and social experts that have conducted case studies on the impact of particular GE crops on small-scale farmers in developing countries (Bt cotton in China, India, South Africa, Colombia, Bt corn in Honduras and the Philippines, HT soybeans in Bolivia). The workshop is part of a project lead by Oxfam America and IDRC Canada with multiple partners (G. Gruere).
- **East China:**
  - There is strong and very well supported evidence of a clear success of Bt cotton in reducing pesticide use, leading to health benefits, larger incomes for small farmers (G. Gruere).
  - However, China farmers were overusing pesticides and Bt Cotton is producing a pesticide permanently and at high level (M. Ferry).
- **India:**
  - Studies showed that Bt cotton is largely responsible for the observed doubling of the average yield level in less than 5 years- the acceleration of yields in India has been just phenomenal. Bt cotton is in average an expensive yet profitable technology for Indian farmers overall, reducing pesticide (by about 30-40%), increasing yields (by about 30-40%), increasing overall costs (by about 15%), but also resulting in net income increases (by over 50%) (G. Gruere). The overlook is positive but many farmers gained, while some farmers actually lost.
  - However, the assertion that India has doubled its yield in cotton within 5 years because of the genetically modified cotton may be false. Data concerning

comparisons of yield in India between Bt and traditional cotton are very variable and contradictory. The high increase of yield is much more based on Mahyco-Monsanto company propaganda than on reality (M. Ferry).

- **South Africa:** it was a "**technological success but an institutional failure**". Studies had its own methodological and data limitations, but basically showing positive average productivity and income effects for smallholder farmers with important variations by season (G. Gruere).
- **Philippines:** three studies conducted on Bt corn have been rather positive effects, in terms of productivity, income and potentially poverty reduction and quality of life (G. Gruere).

## V. OTHER COMMENTS

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- Many factors seem to determine success or failures, especially the level of seed prices (as expected), the use of adequate varieties for the transgene, information available to farmers, and the institutional context (G. Gruere).
- There are a number of current projects that do focus on the use of technologies for small-scale farmers, but they have all faced challenges, notably because of the difficulty of setting up strong public private partnership and because of both the lack of functional biosafety systems in developing countries, and/or the high cost of these regulations for any public developer (G. Gruere).
- One issue faced by the developers of GMOs products is lack of market access in developed countries (Europe, Japan, South Korea, Australia, New Zealand) due to regulations and their indirect effects on purchaser of GM products (G. Gruere)
- GMOs are just one more step in the long-range pattern of the industrialization of agriculture (G. Kent). One major feature of the industrialization of agriculture process is the removal of decision-making from the farm level to more distant sites. It begins with the consolidation of small holdings into large holdings, but goes on from there until it spans the globe (G. Kent).

## VI. REFERENCES

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