

[P1.49]

Environmental safety, socioeconomics and public awareness of GMOs in Brazil – the context of LAC-Biosafety Project.

D.M.F. Capalbo*¹, D.P. Paula², S.M. Mendes³, E.R. Sujii², C. Pires², O.M.N. Arantes^{1,6} et al
¹*Embrapa Environment, Brazil*, ²*Embrapa Genetic Resources and Biotechnology, Brazil*,
³*Embrapa Maize and Sorgum, Brazil*, ⁴*State University of Campinas, Brazil*, ⁵*Embrapa Cassava and Tropical Fruits, Brazil*, ⁶*Consultant, Brazil*

In Brazil research activities regarding the GMOs' biosafety had been developed mainly on risk assessment, but very little on socioeconomic impact and risk communication. These topics were covered through the participation of Brazil in the LAC-Biosafety project (www.lacbiosafety.org) in cooperation with Colombia, Costa Rica and Peru. The project was structured in two components: one technical-scientific (gene flow, non-target organisms and socio-economy); and other for communication and public perception. In Brazil the project had the support of specialists from universities and from Embrapa, besides focal points in Ministries (mainly Agriculture, Environment, and Science and Technology).

Findings: **a) gene flow:** studies were concentrated in an *ex-ante* evaluation of cassava (*Manihot esculenta*, Euphorbiaceae), as a model, since Brazil has no GM cassava under development. One important finding in this subproject was that on the Cerrado biome (most of the commercial production), it was detected the occurrence of wild species of cassava, an abundance of pollination vectors and potential cross ability among wild species and commercial cultivars. So, more detailed studies are urgent in order to subsidize further environmental risk analysis of GM cassava in Brazil; **b) effects on non-target organisms (NTO):** studies were focused on current protocols and methodologies for evaluating effects of GM cotton and maize on NTOs. The results suggest that studies with NTOs in laboratory have greater effectiveness in capturing the effects of negative impacts, especially when studying behavioral alterations of natural enemies. Field assessments with analysis of ecological indexes contribute less because, in most cases, they do not reach the level of species. Moreover, the negative impact is more detectable in guilds of parasitoids and herbivores than in other guilds, suggesting that the guild should be a focus for assessments; **c) socioeconomic study:** comprised the evaluation of *ex-ante* and *ex-post* impact of the adoption of GM varieties in three different important cotton production regions. Some similar activities on GM maize were also organized applying CGE-regional methods and risk analysis. The investigation allowed the study of seed production chain and an analysis on the problem of piracy and its effects on smallholder production and productivity. **d) the public perception approach,** attached to the communication initiative and the technical component of the research project was a pioneer initiative in Brazil. An online questionnaire (to detect the needs of information for the general public) and individual interviews (for the organized society) were applied, in order to build and deliver a variety of communication products, covering a large extension of the country stakeholders demands (TV, radio, newspapers, seminars, internet, pamphlets, among others).

It was also possible to develop capacity building activities for decision makers, practitioners and communication professionals.

An important **outreach** was the establishment of a cooperation project with Kenya, Uganda and Tanzania (<http://www.africa-brazil.org>).

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