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"Impact of Monsanto's commercialization of GM seeds in India: A case study"

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ABSTRACT

Agbiotechnology in the form of genetically modified seeds and genetically modified varieties of plants (GMVs) is viewed as a possible solution to the problem of ensuring "food security", interpreted in the developing countries as protection against famines and malnutrition. However, unlike the earlier green revolution, which literally saved countries like India from famines, GMVs have not been created by public research organizations, but by Western firms with the rationality of profit maximization. Firms like AgrEvo, Novartis, DuPont and Monsanto, the key players in the biotechnology revolution in the United States, continue to be the major

suppliers of GMVs in developing countries. Among the agbiotech companies, Monsanto has been the most active as an international technology supplier.

Studying the consequences of the commercialization of GM seeds in India, is like unravelling a hidden agenda, because it is the result of interaction between a number of actors comprising Western firms, Indian firms, public laboratories, NGOs and consumers in an evolving political and regulatory environment. The consequences can be analyzed along many dimensions. However, for the purposes of this paper, the focus will be on the form of commercialization of GMVs.

An agbiotech firm is simply a new technology provider and in order to commercialize a GMV, it needs to cooperate with seed firms. As in the United States, the creation of a commercially viable GMV is the result of cooperation between an agbiotech firm and a local seed firm. There is a gamut of collaboration strategies to choose from: subsidiaries (i.e. no collaboration), exclusive licensing, non-exclusive licensing, mergers and acquisitions. We know already that the structure of the seed industry in America was changed profoundly by the type of vertical coordinating agreements implemented between agbiotech firms and seed firms. Different types of collaboration impact local crop seed industries and public research laboratories differently. The last point is particularly important, given that in the developing countries, the public laboratories have so far been the main provider of new plant varieties, which are no match for agbiotech firms in terms of their deep pockets, or the funds they can invest into research laboratories. This is doubly true with respect to the public laboratories in developing countries.

Thus the two central questions that will be examined in this paper are:

- What are the determinants of the choice of form of collaboration (subsidiary, exclusive license, non-exclusive license, mergers) for Western agbiotech firms seeking to commercialize GMVs in developing countries?
- What are the consequences of Monsanto's commercialization strategy on the Indian seeds market, the Indian agricultural research system and the incomes of local farmers?

The answers are sought to be provided on the basis of a survey of both the economics and business literature and field interviews with farmers, representatives of seed corporations and seed firm executives.