

A solution towards addressing the farm technology drought

The Centre can extend the model of Defence for acquiring cutting-edge foreign knowhow in agri.

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It's hardly a secret that barring in wheat or paddy, no major yield breakthrough has been achieved by Indian scientists for over two decades.

The recent confrontation between Monsanto and the Centre over pricing of Bt cotton seed technology has yet again brought into focus the need to constantly update technology to sustain gains in agriculture. It's hardly a secret that barring in wheat or paddy, no major yield breakthrough has been achieved by Indian scientists for over two decades. This is more so in pulses, oilseeds and high-value agriculture sectors like horticulture, dairy and poultry.

Dramatic productivity gains in major cereals during the seventies and eighties were made possible mainly through technology sharing by non-profit international research bodies,

such as CIMMYT (the International Maize and Wheat Improvement Center, Mexico) and the International Rice Research Institute in Manila. While our scientists improved many of the genetic lines sourced from these centres and adapted them to the country's huge diversity of agro-climatic conditions, the original strains and the science behind them were, however, developed in foreign labs before they could support technology in Indian fields.

It was this international cooperation between government, non-government and research bodies that enabled Indian farmers, at least in the better resource-endowed regions, to achieve significant productivity breakthroughs in wheat and rice. By the early 1990s, India was self-sufficient in foodgrain production.

Recapitulating this history is important in the context of the on-going dispute with Monsanto because it reveals how the then government clearly differentiated between strategy and tactics. The reflexive anti-US and anti-MNC sentiment, prevalent among influential sections of academia, civil society and the media, apart from bureaucratic and political circles here, wasn't any weaker then than now. Yet, the political leadership stared down a shrill campaign to block the import of a small quantity of breeder seeds of dwarf wheat varieties for multiplication in India; from its standpoint, the larger strategic objective of food security was more important than any short-term tactical loss of support among key support bases.

Ending dependence on food aid was given higher priority than pandering to fears regarding destruction of indigenous bio-diversity or loss of seed sovereignty.

In the instant case, more than one senior agricultural scientist has confirmed to this writer that Monsanto had originally made an offer for an outright transfer of its Bt gene technology to the Centre for a one-time payment in single-digit million US dollars. The Centre could, then, allow any public or private entity to produce cotton seeds incorporating this technology at a fixed royalty. In retrospect, this may have been a major missed opportunity.

The Monsanto offer was made sometime in the mid-1990s, but a combination of scientific pride and bureaucratic caution seemingly ensured that it never got beyond a few conversations. Monsanto subsequently licensed the technology to a joint venture with a private Indian seed company.

The commercial royalty levied on this technology lies at the heart of the current dispute with some of the sub-licensee firms that have incorporated it into their own cotton hybrids. With various courts and the Competition Commission of India, too, getting involved, we'll have to wait and see how the issue gets resolved.

However, the larger question — of accessing cutting-edge technology, spanning crop husbandry and even high-value agriculture — remains unanswered. Frequent technology upgrades are critical to attain the ambitious vision of doubling farm incomes by 2022.

Can it be done without seeking technology from outside? The answer is an unequivocal no.

The approach to acquiring critical agricultural technology could follow the pattern emerging in another area of strategic importance: Defence. To provide the armed forces with cutting-edge capabilities, the Centre is today taking the lead for identifying proprietary technologies and negotiating their transfer to Indian entities (often from one foreign private company to an Indian one), so that the necessary platforms (guns, tanks, fighter jets, warships etc.) are manufactured in India.

Technology for agriculture needs to be approached in a similar manner. Let the NitiAayog list critical gaps in our agri technology portfolio and fill a priority list with outright import and adaptation of on-the-shelf technologies from anywhere in the world. The Centre can negotiate the purchase of the identified technologies, using government-to-government purchase mechanisms similar to those in defence acquisitions. This will greatly reduce the commercial complexity of such buy-outs, with the Centre holding the rights to domestically license a range of technologies at reasonable rates of royalty (or even zero where warranted, such as in pulses).

But why not simply liberalise flows of planting material or germplasm from abroad and allow private entities to enter into tie-ups of their choosing? Well, the chances are we will run into a hundred Monsanto-type problems.

The political economy of agriculture now will not permit market forces to have free play; the temptation for state agents to influence economic decisions would remain a threat to businesses in the near term. Only when this situation has improved over a decade or so, and market-determined pricing for inputs becomes accepted practice, can one realistically expect agricultural technology liberalisation in the full sense.