

EXPERT VIEW

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THE BAGGAGE OF BIOTECHNOLOGY

Modern biotechnology is a toolbox that contains a wide array of tools and techniques to tackle problems in human health, agriculture and environmental protection. Environmental activists have rarely referred to it as “clean technology”. India has long since committed to utilizing modern biotechnology for its economic development and is perhaps the only country with a dedicated government department of biotechnology. If one asks dispassionate questions about the safety and utility of modern biotechnology, one will be surprised to find that a large majority of the public are either neutral or positive about the role of modern biotechnology in improving life on the planet. This is what Philipp Aerni, Florabelle Gaglac and Joachim Scholderer discovered in their research paper *The role of biotechnology in combating climate change: A question of politics?* The paper was published in the Oxford journal *Science and Public Policy* this year.

People in the environmental movement view biotechnology as a problem, and those who believe that it is a solution struggle to frame modern biotechnology as an answer to environmental challenges.

Environmental activists, like any other stakeholder group, have to take care of the vested interests of their donors, for which they need to project environmental problems as “emotional drama”, and accuse decision-makers of not paying sufficient heed to the societal and environmental risks of technology adoption. The risks of technology are presented as political risks and especially so in the case of modern biotechnology, which involves altering natural life forms. And the fact that most modern biotechnology is developed by the private sector, which by itself is suspect in the eyes of almost all political parties, political tensions get much more amplified. In developing countries like India where the major political ethos is still left-leaning and socialistic, anything produced by the private sector is crony-capitalistic for profiteering at the cost of environmental degradation and exploitation. This becomes an incendiary mix.

It is well established that the long-term threat to agriculture will be from climate change; there is a clarion call for environmentally sustainable agriculture. However, the call is for sustainable intensification of agriculture based on the ‘more crop per drop’ dictum. Agriculture has to be intensified if one wants to conserve land mass for purposes other than agricultural. The political sensitivity has reached such ridiculous lengths that most international bodies like the UN, the World Bank, the Asian Development Bank, the African Development Bank and even the Organization for Economic Co-operation and Development (OECD) hardly ever

mention biotechnology as a green technology option to mitigate the effects of climate change on agriculture. Biotechnology as an “environment-friendly” technology has lost its significance in almost all international efforts to mitigate climate change. Agenda 21 and the Rio Declaration of 1992 recommend the use of biotechnology for environmental solutions and strongly recommend technology transfer to developing countries to enable them to conserve natural resources in a sustainable manner. The Convention on Biological Diversity explicitly mentions biotechnology’s role in biodiversity conservation while formulating the Cartagena Protocol on Biosafety, which is used more as a technology denier or a strict regulator rather than as a safe technology facilitator.

After hundreds of millions of dollars spent by the United Nations Environment Programme and the Global Environment Facility for biosafety capacity building, there is not a single developing country that has facilitated any biotechnology transfer for agricultural development. Even the mention of the word ‘biotechnology’ raises howls of protest.

The world has become highly polarized over the technology, which runs the risk of completely losing political support. This situation is best exemplified in India with respect to genetically modified organisms (GMOs) in agriculture that has become a victim of heavy-duty politicization. Biotechnology has made a proven significant contribution to mitigating greenhouse gases, according to the European Commission 2012, US National Research Council 2009, UK Government Office for Science 2011 and OECD 2011, yet decision-makers in India are mortally afraid of taking a favourable decision on biotechnology.

Stakeholder analysis clearly shows support for climate-resilient agriculture using modern GMOs designed for mitigating climate change effects, and also for renewable energy and sustainable industrial processes. The potential of biotechnology to tackle climate change is hardly mentioned publicly, but acknowledged privately. This is absolutely true of policymaking technocrats and bureaucrats in India who join ranks with technology purveyors in support of technology behind closed doors, but have no courage to express support publicly for the fear of public condemnation, egged on by environmental activism. This is nothing but politics rather than real risks of the technology to determine whether biotechnology can be used to tackle the effects of climate change.

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