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CENTRE MOOTS POLICY ON SYNTHETIC BIOLOGY

Relevant for: Science & Technology | Topic: Achievements of Indians in science & technology

Not on the plate:A protest against genetically modified foods and agro products, in Chandigarh.File photo | Photo Credit: AKHILESH KUMAR

The Centre is working on a national policy on synthetic biology, an emerging science that deals with engineering life forms for a wide range of applications from making designer medicines to foods.

The 70-page ‘compilation’ document, as it is called, lays out the state of synthetic biology internationally with respect to research and development and the involvement of the private sector, globally, in dealing with synthetic biology.

“Though it is not customary to elaborate the principles of international law and policies, as presented in this compilation, it is important to consider these elements while developing the national policy, especially since the science and regulatory framework related to use of the science is driven by global considerations and decisions,” the experts note.

As part of the 12th Five-Year Plan, India had set up a task force on systems biology and synthetic biology research in 2011.

This body underlined the potential benefits from synthetic biotechnology in biofuels, bioremediation, biosensors, food and health and made a strong case for a push for the technology and highlighted that India could be a world leader as a protector and supporter of “open source biological platforms”.

However, Parliament is yet to clear the Biotechnology Regulatory Authority of India Bill, 2013, that had mooted the creation of an independent regulator to adjudicate research around genetic engineering that could have also encompassed synthetic biology. There’s also a ban on commercial genetically modified brinjal and many States have restrictions on field trials on GM food crops.

Top technology

Synthetic biology, the report notes, is seen as one of the top 10 breakthrough technologies as part of the “new industrial revolution” that are “most likely to change the world”, and the regulation of both the benefits and risks become important for the international community and the accelerating pace of scientific research and research irregularities about the specific benefits of synthetic biology created “complex challenges” for national regulation.

“The regulatory challenge is how to leverage its anticipated benefits while guarding against its potential risks. The laws and regulations framework governing traditional tools and products of biotechnology can be applicable to this relatively nascent field in some ways, but most often it fails to fully adapt to the evolving possibilities of synthetic biology,” it notes.

Instances of application of synthetic biology include the use of gene editing systems such as CRISPR that allow defective genes in animals, plants and even people to be silenced, or changed, and control biological outcomes.

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