

## Public funding zooms past \$650 mn for Indian life science

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The Government of India has named 2010-20 as the 'decade of innovations' and is currently in the process of formulating a new science, technology and innovation policy in order to live up to the same. Expected to be released in early 2013, the policy would reiterate the government's resolve to increase R&D spending to two percent of the gross domestic product (GDP) by 2017. With the increase in number of publications in scientific journals and the number of patents filed and granted, there are some early evidences of improvements in our global competitiveness.

Speaking at an international conference recently, Mr Vayalar Ravi, Minister of Science and Technology, Government of India, revealed that, "We foresee an opportunity for optimization of investments into R&D when we build on collaborative excellence. Sharing objectives, co-investments and co-generation of values to people through science seem to me as a new paradigm."

The government agencies have been offering various types of research grants and fellowships through soft loans or equity in order to conduct research in various fields of biotechnology and commercialize indigenous biotechnologies. There are three major departments under the Ministry of Science and Technology (S&T), Government of India; each with its own mandate and funding programs. These include the Department of Science and Technology (DST), the Department of Biotechnology (DBT) and the Department of Scientific and Industrial Research (DSIR).

Besides these, the Indian Council for Medical Research (ICMR), the Council for Scientific and Industrial Research (CSIR) and Indian Council of Agricultural Research (ICAR) play a major role in the promotion of biotechnology in the country.

Over the last five years, there has been an increase (up to 25 percent) in public funding to promote research, across all government agencies. The budgetary provision for S&T spending witnessed a 10 percent hike in the recent budget. During

the budget 2011-12, the Ministry for S&T received a total of \$1.03 billion (Rs5,679 crore). The allocation for DBT, DSIR, and DST was \$254.54 million (Rs1400 crore), \$350.90 million (Rs1930 crore), and \$427.09 (Rs2349 crore) respectively.

The DBT, which is the nodal agency for promoting biotechnology in the country, has been spending around \$254.54 million (Rs1,400 crore) each year, to support R&D and innovation. Besides that, about 30 percent of the overall funding goes into the public-private partnerships (PPPs).

The agency currently operates these major funding schemes:

Small Business Innovation Research Initiative (SBIRI), a scheme to promote R&D in small and medium size biotech companies, as of 2012 has assisted more than 112 companies through 19 batches. An estimated amount of \$90.90 million (Rs500 crore) has so far been spent under this scheme.

Biotechnology Industry Partnership Program (BIPP), envisaged as a government partnership program with industries for support on cost sharing basis for high risk discovery and innovation, accelerated technology development. The scheme provides for a government contribution of 30-to-50 percent. It supports the industry in discovery linked innovation with a grant-in-aid up to \$90,909 (Rs50 lakh).

In order to promote and nurture innovative research in biotech enterprises, especially the start-ups and SMEs, the government incorporated Biotechnology Industry Research Assistance Council (BIRAC) as a not-for-profit section 25 company in March this year. Apart from operational cost with an initial outlay of \$127,272 (Rs70 crore), BIRAC will have an additional \$27.27 million (Rs150 crore) to invest in the public-private partnership initiatives. BIRAC's Biotechnology Ignition Grant (BIG) scheme for igniting new ideas was declared open on June, 2012. The scheme is designed to stimulate commercialization of research discoveries by providing very early-stage grants for the development and maturation of those discoveries into marketable product or intellectual property (IP), in particular to help bridge the gap between discovery and invention.

According to Dr Renu Swarup, managing director, BIRAC, "Our mandate is to take discovery forward and encourage product development by indigenous biotechnological companies. We definitely need to instill confidence in the new comers in the industry. We can see more and more people coming forward."

Department of Science and Technology (DST) initiated the Drugs and Pharmaceutical Research Program (DPRP), which has forged 101 collaborative projects so far. However, the budgetary allocation has come down sharply in the recent years. The allocation was \$10.90 million (Rs60 crore) and it was revised drastically to \$9.09 million (Rs50 crore) during the year 2011-12 and further slashed to \$7.27 million (Rs40 crore) in 2012. The annual funding by the agency to the various schemes and fellowship programs is more than Rs2,000 crore.

Fund for Infrastructure Strengthening of Science and Technology (FIST) is another successful ongoing scheme of the DST. Dr T Ramasami, secretary, DST, said that, "The DST has funded close to 200 life sciences research projects and 29 percent of the same are related to biotechnology under different schemes. Bharat Biotech received a funding of Rs32 lakh as loan from the Technology Development Board, which has resulted in development of a product having a price of \$1 per a dose."

Council of Scientific and Industrial Research (CSIR), India's largest research and development (R&D) organization, with 39 laboratories and 50 field stations or extension centers spread across the nation, has a budget allocation of Rs1,750 crore for 2012-13.

CSIR provides grant support to the institutions and organizations at low interest loans (three-to-five percent) under the New Millennium Indian Technology Leadership Initiative (NMLTI). It has enhanced its budget allocation of Rs11.79 crore by adding Rs15 crore, thereby allowing the program to spend about Rs26.79 crore up to 2017.

The Department of Health Research, which comes under the Ministry of Health and Family Welfare and is headed by the director general of ICMR, an apex body for the formulation, coordination and promotion of biomedical research, has a total budget provision of Rs660 crore in 2012-13 as against Rs588.26 crore in 2011-2012. In 2012-13, ICMR got Rs700 crore which is Rs88.15 crore more in comparison to the allocation of Rs621.85 in 2011-12.

According to Dr V M Katoch, director general, ICMR, "During the 10th Five Year Plan period there was a impetus given by the ICMR in developing infrastructure for conduct of fundamental and strategic research. This has resulted in the conduct of research which has provided encouraging leads for development of new products. In the 11th Plan, efforts are being made to pursue the leads for product development. The list of programs which have the potential to be translated into the National Health Care Program/Clinical Practice were obtained from the Directors of the Institutes."

The Indian Council of Agricultural Research (ICAR), an autonomous organization under the Department of Agricultural Research and Education (DARE), Ministry of Agriculture, oversees the agricultural research with special focuses on agri

biotechnology. Compared to the Rs2, 300 crore budget in 2010-11, the agency had Rs2,800 crore planned budget for the year 2011-12. Out of that, close to Rs1,000 crore was spent on the projects focused on biotechnological applications in livestock, crop improvement and field trials. It spends about Rs800 crore annually on various biotechnology-related research projects.

Recently the union cabinet approved a proposal of the Ministry of Agriculture for the establishment of an Indian Institute of Agricultural Biotechnology (IIAB) in Ranchi, Jharkhand. The institute will be set up at a cost of approximately Rs287.50 crore during the 12th Five Year Plan.

The Department of Pharmaceuticals (DoP) has planned to set up a Rs10,000 crore venture capital fund to provide much-needed financial assistance to the players. The DoP will contribute 15 percent of this as the corpus. This is a public-private partnership model and the rest of the funds would be raised from other interested investors. The funds would be raised in three phases, including Rs3,000 crore in 2011-12, Rs5,000 crore by 2013 and Rs2,000 crore by 2015. The complete fund would be utilized by 2015. The plan is to provide financing for new drug discovery projects and for biopharmaceutical products in the country.