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Biotech- A priority sector in Odisha

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Biotechnology is a global industry with cross-sectoral applications. The Odisha State can benefit through the new and emerging developments in biotech-health (biopharmaceuticals, vaccines, diagnostics, gene medicines, theranostics), agriculture, food & nutrition, veterinary, fishery, environment, biomaterials, bioelectronics, biominerals, biopolymers, bioenergy, industrial biotech and R&D sectors. Odisha, an emerging State of India should develop a long term mission through Make In Odisha platform and biostartup programs for BioEntrepreneurship and BioIndustry sector development.

Make In Odisha 2018 (MIO, Nov 11-15), the biennial business conclave organized by the State Government hosted the Biotechnology Session on Nov 15, 2018 with two themes (Opportunities in Biotech Sector and Inviting Investments in Biotechnology Sector). An updated Biotechnology Policy 2018 was released by the state govt during the event. The biotech policy has been prepared under the leadership of former Principal Secretary GoO DST, Mr. Nikunja Dhal with advice and input various experts in the committee. The Minister of S&T Mr. Badri Patra along with the delegates released the policy. (Ref:https://investodisha.gov.in/biotechnology-policy/).

Govt of Odisha has identified Biotech as a priority sector in its Industrial Policy Resolution (IPR-2015). The biotech session had a focus on bioentrepreneurship development, a nascent and emerging sector for Odisha. Prior to the MIO biotech session, a road show was organized at Hyderabad. Dr. Mrutyunjay Suar (CEO, KIIT TBI) envisioned that the road show would foster an ecosystem of entrepreneurship, innovation and new ventures.

The govt policy framework covers key areas such as: Vibrant academic and entrepreneurial culture, Funding encompassing all stages of product development from ideation to commercialization, Industry-academia linkages and collaborative research, Technology Business Incubators & Tech Transfer Offices, Connected “complementary” industries, IP & law firms, design vendors, Network of angel and venture capital firms, Enabling regulatory environment, and World-class industrial facilitation. The state has a vision to emerge as a world-class center of biotechnology education, research and innovation, entrepreneurship, product development and manufacturing and to create positive economic spill overs as well as health, environmental and social benefits. The policy has proposed three stages funding that includes Early Stage Grant Funding (upto 30 Lakhs) Equity Funding (“Biotech Startup Seed Fund” with an initial corpus of INR 15 Cr.) and Odisha Technology Acquisition Fund (identify cutting edge technologies in biotech/medtech domains and use licensing models to help start-ups and SMEs. The policy has put equal emphasis on networking and entrepreneurship development.

The GoO’s DST, Industries Dept, GoI’s DBT/BIRAC & DST represented the biotech session. Odisha CM Mr. Naveen Patnaik’s welcome message was broadcasted. Odisha S&T Cabinet Minister (Mr. Badri Patra), Chief Secretary of Odisha (Mr. Aditya Padhi), Former Development Commissioner and current Chief Advisor (Special Initiatives) to the CM with the rank of CS (Mr. R. Balakrishnan), DST former Principal Secretary (Mr Nikunja Dhal), DST Additional Secretary Mr. Rasid Khan, DST/Biotech (Technical) Deputy Director (Dr. Puspashree Puhan) and various govt officials participated in the meeting. DBT Secretary (Dr. Renu Swarup) joined through video conference. Dr. G. Padmanaban (Sr Sc and Inno Advisor, BIRAC) gave the key note address. Dr. Krishna Ella (Chairman, Odisha Biotech Park and Bharat Biotech) was the Chief Guest. OBPPL was represented by Dr. Ella and Mr. A. Arunachalam, Project Head, OBPPL. The panel theme was BioMedTechHealth. The panel was coordinated by Dr. Satyaprakash Dash (Director, Global Innovations Impact Lab-PATH India), and the esteemed panelists were Dr. Amulya Panda (Director, NII), Dr. TS Rao (Sr. Advisor, DBT), Dr. SMukherjee (Mission Director, PMU, DBT-BIRAC-BMGF-WT), Dr. Satish Rath (CIM, Xerox Inno), Dr. Goutam Das (General Secretary, ABLE), Dr. Ajay Parida (Director, ILS), Dr. Sujay Singh (CEO, Imgenex India), & Dr. Sumona Mishra (Founder/CEO, Prantae Solutions). ICMR-RMRC, BBSR Director (Dr. Sanghamitra Pati) participated in the discussions related to biomedical as applied to public health. ABLE India (Mr. N. Suresh, COO and Dr. Goutam Das, General Secretary) participated in the event. Startup entrepreneurs, prestartup founders from health, medical devices, pharma, agro, food, fishery, herbal medicines, bioenergy and environment were in the audience and some participated in interviews and discussions.

Odisha has attracted top investments in diverse sectors like mining, smart cities, energy, infrastructure etc., however, the corpus of biotech investment is minimal. Most of the biostartups in the State (except 2-3 biofirms) are based on research, innovation, technology, proof of concept development through govt soft money grants, DBT/BIRAC funds and institutional grants. Private Sector biotech investment through private placement, bank investment, angel network, VC funds need strategic planning. Odisha needs effective marketing for the biosectors to attract local, regional, national or international investors. GoO’s Invest Odisha, MSME, Startup Odisha and GoI’s DBT, DST have supported the bioentrepreneurship initiatives through govt grants.

Odisha has developed research institutional clusters by hosting major institutions such as: ICMR-RMRC, ILS, IIT, AIIMS, NIT Rourkela, NISER, Xavier’s, IIM Sambalpur, IISER Berhampur, Institute of Central Institute of Freshwater Aquaculture (ICAR), National Rice Research Institute, Cuttack (ICAR), Institute of Material and Mineral Technology (CSIR), NIST Berhampur, KIIT School of Biotechnology, OUAT and regional universities. Presently, Odisha produces approximately 700 Biotech graduates per year. However, the bioentrepreneurship development has been a challenging opportunity for Odisha.

BCIL MD Dr. Purnima Sharma had lead the very first biotech investment symposium in BBSR during 2005 (Ref: Document on advantages offered by Orissa for biotechnology investments. Sept 2005. 107 pages report submitted by BCIL to GoO DST).

During 2010, KIIT U took a revolutionary approach under the leadership of Dr. Suar and started the KIIT Technology Business Incubator and BioIncubator with emphasis on biotechnology entrepreneurship. KIIT TBI till date has supported 65 biostartups that will grow by a number of 25 more in 2019, out of which 12 graduated and currently has 47 incubatees. 50000 square feet of modern incubation space has been in-built.

Odisha Biotech Park Private Limited (OBPPL, BBSR) is a SPV set up by Bharat Biotech and GoO. The biopark has developed a master plan over 65 Acre of land area to use 40 acre for biotech corridor, 14.86 acre for commercial corridor, and 9.75 acre for a BioIncubator. During the MIO 2018, Dr. Ella (Chairman, Bharat Biotech International Ltd and Chairman, OBPPL) announced an investment intention (Rs 500 crore, phasewise) in a vaccine manufacturing unit to be built in the BioPark. This BioPark would host and incubate anchor companies, startups, bioincubator, manufacturing units, service units and would attract investor NRIs and local/regional/national/international investors.

Other upcoming incubators, Tech Parks, Food Parks, e-cells have initiated entrepreneurship programs through govt funded innovation grants for scientists, engineers, students, faculties and prospective bioentrepreneurs.

About 15-20 names of biofirms (med, agri) are registered and few enlisted in the Govt Startup Directory, but no specific activity reported. There are no FDA approved or CGMP facility (biotech/biopharma) built in Odisha so far and both the pvt sector industry and selected public sector institutions will need biologics CGMP units along with national/intl regulatory compliance.

Both bioentrepreneurship and bioindustry sectors are biggest gap areas for Odisha. The industrial/commercial biotech revenue of Odisha made products is insignificant. However some local companies are producing/marketing research reagents, diagnostic kits (pre-clinical), bio-herbals, bio-gas and bio-fertilizers. Odisha State is about 20-25 years behind the top 4-5 bio-clusters based in other advanced Indian States. One of the most challenging areas of Odisha biotech industries are productization and commercialization through technology transfer. And the State needs high specialty skillsets in bioproduct development and biomanufacturing as per national/intl regulatory compliance guidelines.

Odisha offers new opportunities in BioManufacturing (vaccines, biogenerics, diagnostics, bio-energy, bio-herbals, bio-agro, bio-fertilizers, bioinformatics (IT-BT services), natural products), setting an Odisha Biotech Fund (OBF) through investment partners, agriculture biotechnology and biotech seeds, bioenergy/biofuel/biogas and biopolymer/biomaterial sectors. Two items were also proposed by bioentrepreneurs on the prospective creation of Biotechnology Industry Odisha (BIO), a bio-entrepreneurship/industry association and to organize OdishaBio (like Karnataka Bio, Gujarat Bio) in coop with govt/pvt sector.

Odisha should focus on both bio-tech and bio-based business models by using Open Innovation along with Closed Innovation to utilize reverse bioengineering, reverse innovation, re-invention, re-innovation, bioinformatics services, biosimilar/vaccine biomanufacturing, through short-term, mid-term, long-term business strategies.

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