



DEPARTMENT OF BIOTECHNOLOGY
Ministry of Science & Technology
Government of India



Biotechnology Industry Research Assistance Council
(A Govt. of India Enterprise)

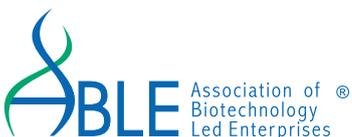


Global Bio-India 2019

Power to Transform Lives
Bioscience to bioeconomy—USD 100 Bn By 2025

Aerocity, Delhi
21st to 23rd November 2019

CONFERENCE REPORT



Confederation of Indian Industry



INVEST INDIA
NATIONAL INVESTMENT PROMOTION
& FACILITATION AGENCY

Global Bio-India 2019 was organized by Department of Biotechnology (DBT), Ministry of Science & Technology, Government of India in association with its Public Sector Undertaking, Biotechnology Industry Research Assistance Council (BIRAC) from 21st - 23rd November 2019 at Aerocity, Delhi. Confederation of Indian Industry (CII), Association of Biotechnology Led Enterprises (ABLE) and Invest India were the partnering agencies for the event.

The event showcased India's potential in the biotech sector both within the country and to the international community. The three-day long event witnessed a rich technical program with various parallel sessions covering important Biotech sessions i.e. Vaccines, Biosimilars, Medical Devices & diagnostics, Agriculture, Industrial Biotech, Bioservices, Emerging therapeutics, AI, Big Data, Discovery Research and Development, Regulatory Compliances, Intellectual Property Rights, Incubation Centres, Entrepreneurship, Startups, Social Innovation, Integration of Startups with National Missions such as Make In India, Ayushman Bharat, Swach Bharat etc. Various unique features of the programme were Investors Reverse Pitching, International Ecosystem Connect, Partnerships, Translational Research, Global partnerships, Conversations with policy leaders, CEOs, Discussions with national and international product development experts, Regulatory experts, and talks by luminaries of the Indian Biotechnology Industry. All together there were 40 sessions, 3 super sessions, 3 CEO panels, 2 workshops, policy dialogues, and a boot camp that took place during the whole Technical programme over a period of 3 days.



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BIRAC
Biotechnology Industry Research Assistance Council
Public Sector Undertaking

Global Bio-India 2019
Power to Transform Lives
Bioscience to Bioeconomy | 2019-2024 | By 2025
Led by Department of Biotechnology, Govt. of India

21-23 November 2019: Aerocity, New Delhi

Biotechnology sector is recognized as the key driver for contributing to India's USD 5 Trn economy target by 2024. As India progresses on this transformational journey, Global Bio-India 2019, the largest Bio event, would showcase opportunities to the world.

Department of Biotechnology (DBT), Ministry of Science & Technology, Government of India and its Public Sector Undertaking, Biotechnology Industry Research Assistance Council (BIRAC) are organizing Global Bio-India Summit 2019, a major international conglomeration of biotechnology stakeholders, including international bodies, regulatory bodies, Central and State Ministries, SMEs, large industries, incubators, research institutions, investors, and the startup ecosystem.

Destination India

- #1** Supplier of DPT, BCG and measles vaccines globally
- #2** Producer of BT Cotton globally
- #3** Producer of the recombinant Hepatitis B vaccine
- 2700+** Startups
- 3rd** Largest biotech destination in the Asia-Pacific Region
- 3%** share in the global biotechnology industry
- 100+** Biotechnology incubators

Event at a glance

- 30+ Countries
- 200+ Exhibitors
- 3500+ Delegates
- 250+ Startups
- 800, 820, 920 Meetings
- Media Interaction
- Awards
- Policy Dialogues
- Bio-Partnering
- Key Global Giants
- CEO Roundtable
- Global Regulators Meet
- Investors Roundtable
- Country Pavilions
- Ministries and Department's Pavilions
- Start-up Biotechnology Grand Challenge Program
- Workshops/Bootcamp
- Startup Pavilion



Who should attend?

- Bio-Pharma
- Bio-Agrif
- Bio-Industrial
- Bio-Energy
- Bio-Services

- Large Industries, SMEs, Startups, Entrepreneurs, Investors in Bio-Pharma, Bio-Agrif, Bio-Industrial, Bio-Energy, Bio-Services, Med-Tech, Bio-IT, CEOs, and CMOs
- Enterprises looking for business partners and distributors in India and other global markets
- Investors seeking opportunity to invest in Biotechnology Sector
- International and Domestic Public officials, Regulatory agencies, Patenting offices, Clinicians, Bio-engineers, Translational Research Institutions, Technology Transfer Offices, Exports and Mentors
- International Biotechnology Industry Associations

A billion reasons to invest in India

- India's Bioeconomy of **USD 50 Bn** in 2018 is expected to grow to **USD 100 Bn** by 2025
- 270+** Incubators & **200+** Biotech Research and Teaching institutions
- 2700+** Biotech Startups to grow upto **10,000+** by 2024
- 600+** Core Biotech Companies
- 57th** rank in Global Innovation Index
- #1** ECR ranking in South Asia

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ABLE Confederation of Indian Industry
CII Confederation of Indian Industry
INVEST INDIA



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In addition, there were 2 Satellite conferences on Nanobiotek and Nano for Agri. Dr. Harsh Vardhan, Hon'ble Union Minister for Science and Technology, Health & Family Welfare and Earth Sciences applauded the efforts taken up by entrepreneurs, innovators in the Biotech sector, for shaping the start-up economy of India and the government enablers efforts in facilitating the start-ups. He gave an honourable mention to Late Shri Atal Bihari Vajpayee's vision that Biotechnology will craft the future of India. He also shed light on the Biotechnology Kisan movement aimed for the protection of the agriculture sector.



2500+
delegates

190
exhibitors

25+
countries

300+
start-ups

50+
incubators

60+
Research
Institutes

800+
business meetings
Representation
from 9 states.

60
government,
research and
educational institutions

Day 1 – 21st November 2019 Inaugural of the Event and Exposition

Dr. Harsh Vardhan, Hon'ble Union Minister for Science and Technology, Health & Family Welfare and Earth Sciences and the Hon'ble Minister of Petroleum and Natural Gas and Steel Shri Dharmendra Pradhan along with Dr. Renu Swarup, Secretary DBT, Chairperson BIRAC inaugurated the event. The inaugural session was also graced by various other dignitaries including Dr. Vinod Paul, Member Health, NITI Aayog, Dr. Kiran Mazumdar Shaw, Chairperson and Managing Director, Biocon Limited, Dr. Naresh Trehan, Chairman, CII National Health Care Council and Chairman & Managing Director, Medanta and Mr. Chandrajit Banerjee, Director General, CII. Afterwards, Hon'ble Minister for Science and Technology along with other dignitaries also inaugurated the Global Bio-India exhibition.

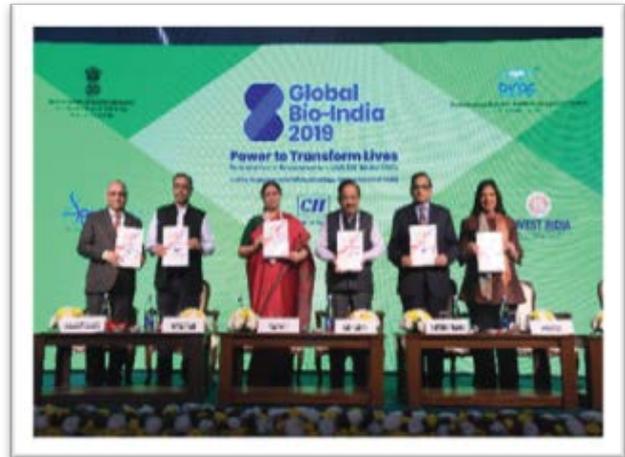
Three sectoral reports were also released during inaugural namely:

- Assessment of Indian Biotechnology Landscape,
- India Bioeconomy Report 2019.
- India: the emerging hub for biologics and bio-similars along with the release of Global Bio-India exhibitor's catalogue.



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Inauguration of the Event and Exhibition

Pertinent Bioeconomy related topics were discussed by the forum of Ministries and Departments elaborated on the government initiatives that will steer India towards USD 5 Trillion Economy by 2024 highlighting the action points, policy framework to establish India as a global hub of Biological manufacturing sector and creating new supply chains for regulated and non-regulated market. Additionally, various policy interventions and reforms that have resulted India to achieve 1st Ease of Doing Business ranking in South Asia and 52nd rank in the Global Innovation index, were also discussed in the session deliberated on the why India is a vibrant innovation destination for the biotech startups.

To accelerate global clean energy innovation an eminent panel talked about various clean energy innovations to achieve cost reductions to provide widely affordable and reliable clean energy solutions that will revolutionize energy systems throughout the world over the next two decades and beyond. The CEO's panel representing Vaccine and biotherapeutics manufacturing sector in India provided insights on the sectoral strength of Indian Bio manufacturing, how India has emerged as a manufacturing leader to cater the need of the world and the future strategy aimed to create India as a global hub of Biological manufacturing sector.

Sessions were designed to promote investment at the state level, State showcase and State connect, Nine states exhibited their innovative strength through no. of technologies developed, IPs generated, etc. States also utilized this platform to talk about their Startups, Entrepreneurs & SME Biotech policies, incubation support, tax incentives & facilitation provided to attract investment in the states. A MoU was signed between DSTE -State of Punjab and BIRAC as knowledge partner to jointly promote biotechnology innovation ecosystem in the state.

Biosimilars are poised to transform healthcare sector. It has opened tremendous opportunities for manufacturing investments in capex, highly skilled human resources and of course, a competitive field that has influenced Biotech Industry in India and South East Asia. Regulators and Industry CEOs discussed the regulatory landscape in light of few under development/ developed products in India, SE Asian countries with Indian and Global regulatory authorities. The International Partnership focussed sessions highlighted the best practices, activities, initiatives and achievements of the partner country's Biotechnology sector viz. Healthcare, Lifesciences, Industrial Biotech, Agri-tech, Clean Energy & Bio-services and also focussed on the government and private sector of the countries to do joint ventures and collaborations.

Antimicrobial resistance (AMR) being a global public health challenge is viewed as posing one of the most serious health threats. The Industries and Lead innovations shed light on the AMR and representatives from DBT, BIRAC, ICMR, CARB-X and discussed the solutions for addressing this imminent health challenge.



To solve a myriad of socio-economic as well as environmental challenges for the collaborative research, the session “Showcasing the Strength of international Partnerships” enumerated country wise priorities and thrust areas where extended cooperation would be required to co-create, co-develop and co-scale. India’s role at international level and expectations of international community from India would be helpful in improvising existing and developing new strategies & implementation.

Furthermore, Indigenous Big Data, National repositories, gene banks providing characterized cell lines, tissue samples and reference material of Indian population have been an invaluable resource. Efficient utilization of the wealth of healthcare data would allow health systems to create holistic views of patients, personalize treatments, improve communication, and enhance health outcomes, the focussed session on Global examples of big Data in Health provided an overview of India’s readiness, execution plans and learnings from countries with experience in this area A separate session on the Compliance Program on Global Harmonization Roundtable Discussion was deliberated on improving access to affordable healthcare, product quality, patient safety and to set the stage for prioritization of the specific actionable steps towards harmonization.



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Day 2 – 22nd November 2019

Being the largest producers and exporters of vaccines, every 3rd child in the world is vaccinated by the vaccines produced in India. The industry representatives shared experience to mitigate risk of the regulatory approval process for vaccination, efforts steering the mass movement and manufacturers' readiness to produce and supply the requisite vaccination doses consistently. The New Product Launch session provided a unique opportunity to 9 selected BIRAC supported startups to launch their product before global community.

India is partnering with various organizations in different countries to address globally relevant unmet challenges, the panelists discussed International partnership e.g. Wellcome Trust, UK, to scout and support innovations in translational medicine, Primary Healthcare system through the various initiatives in India to support high quality bilateral research for Affordable Healthcare in India Grand Challenge India program launched by PMU at BIRAC with Bill & Melinda Gates Foundation. A specialized session for boosting the Indian Start-up ecosystem was conducted on the Enablers for Startup Ecosystem & Market Access Facilitators which deliberated on producing and maintaining start-up ecosystem in the country and the major initiatives of taken by NITI Ayog, DST were also discussed to foster the culture of innovations in India.

A power packed session on Biofuels deliberated on India's current positioning, thrust & efficiency to match global race of developing renewable & sustainable alternative fuels. This congregation of national/international Biofuel Industry & Academic Fraternity brainstormed to find measures to boost Indian Biofuel R&D through required policy inputs. A focussed session Agricultural waste to Value deliberated on designing and developing better waste-to-energy, bioenergy and how the waste can be used for variety of applications to develop clean energy & value-added products. Moreover, the session Destination India: Biopharma R&D provided an insight on Discovery, Knowledge Process Contract and conducive for the industry stakeholders who are considering Destination India as an option in near future. A specialized session on the Startups scale to Global markets through partner countries was also deliberated which elaborated on the IP protection and F2F interactions with representatives from partner countries.

India through various government initiatives and innovation ecosystem strength is now poised to play a vital role in transforming healthcare sector by supported innovations across the sector e.g. Healthcare technologies Telemedicine, Online Pharmacy, Personal Health Management, Fitness & Wellness, Diagnostics, Biotech R&D, Medical Devices & IT/Data. Twelve such exemplary Start-ups showcased their innovation/technology before the global community. Additionally, a fire side chat on Agri focus with Industry leaders, Govt. agencies, private firms & philanthropic organizations over roles of various disruptive technologies destined to play a vital role in transforming Agri-Tech in India. The Panel members chiefly deliberated upon application of Precision farming, Gene editing, RNAi, Digital agriculture, other

emerging technologies including innovations related to development of improved drought resistant varieties, Integrated farming, post-harvest technologies, AI, IoT, Biofortification, precision farming etc. A distinct session on regulatory roadmap for the Novel Preventive Vaccine & Advanced Therapeutics was designed where the forum discussed the learnings, challenges faced by Indian vaccine companies and the regulatory roadmap was discussed between regulators like CDSCO, WHO, MHRA, EFRE, Industry and Academia experts to understand & appreciate each other's perspective.

With the recent technological advancements, globalization and evolving regulatory framework, the biopharma industry continues to face disruptions. Honing the sector's capability is critical for the Indian biopharmaceutical industry to adapt to the changing landscape and to ensure India's competitiveness in the global market. Taking the same into account, United States Pharmacopeia (USP) organised a panel discussion on "Building Capabilities for Quality Drug Development in Biopharma Industry". This session involved key stakeholders from Industry, Regulators and Government, deliberating on the current Government initiatives, policy framework, major challenges and road ahead to boost India's technological and product development capabilities in biopharmaceuticals to enhance its global competitiveness. In the similar context, angel investors have been instrumental in incentivising and shaping the Indian Start-up ecosystem, leading Start-ups to scalability and success. The recent favourable policy reforms have brought some relief for angel investors, with the government providing a simpler mechanism for Start-ups to claim exemption from angel tax retrospectively. As the government and ecosystem enablers unite to support angels, they, in turn, are helping through angel investments in the ecosystem.

Multiple schemes launched by the Government of India like Swachh Bharat, Ayushman Bharat, POSHAN Abhiyaan have achieved great success in spreading awareness across the country. Delegates from diverse background discussed innovative ways to deal with socioeconomic challenges, regulatory transformations and impact of numerous initiatives of Govt. of India, international agencies & philanthropic organizations. India's policy framework promotes growth and attract investments from various national and international innovative companies. And the IP ecosystem is a crucial factor that helps to facilitate the same in the country. The progress made by the Indian Patent Office towards capacity building and modernization is astonishing. The lightspeed commercialization and licensing of Indian biotech/biopharma patents is remarkable. The eminent panel elaborated on the IP ecosystem and showcased India as a great destination for investment in biotech research and IP protection.

To highlight the exceptional achievements, Mr. Piyush Goyal, Hon'ble Minister for Minister of Railways and Commerce, Government of India, along with Dr Renu Swarup, Secretary DBT and Chairperson BIRAC facilitated awards to Indian innovators under various categories. The following awards were awards:

BIRAC Innovators Award

- AlgalRNutraPharmsPvt. Ltd. in collaboration with IIT, Madras: Production of docosahexaenoic acid from microalgae
- Yostra Labs Pvt. Ltd.: NEURO TOUCH™
- JubelN Lifesciences Pvt. Ltd. (Bonayu Lifesciences Pvt. Ltd.): Novel oral thin film platform for drug delivery
- Krimmi Biotech LLP: Validation and bench-scale production of beneficial nematodes waste silkworm pupae against agricultural pest to protect crop

BIRAC National Awards for Indigenous Commercialization 2019

- Coeo Labs Pvt Ltd. for VAPCare: An intelligent secretion and oral hygiene management system to reduce risk of acquiring ventilator associated pneumonia

Second edition WInER Award of the BIRAC - TiE Women in Entrepreneurial research awards (WInER)

- Dr. Renuka Karandikar, BioPrimeAgrisolutionsPvt. Ltd.
- Ms. Neha Rastogi, Agatsa
- Ms. Ritu Malhotra, Eventuate Innovations Pvt. Ltd.

Launch of New Initiatives

- Hon'ble Minister Shri Piyush Goyallaunched the e-Portal www.biotech-solutions.com showcasing BIRAC supported commercialized Biotech Products and Technologies followed by launch of LabtoMarket Catalogue 2nd edition featuring 111 innovative products and technologies by Indian start-ups.
- **List of new initiatives launched by BIRAC**
 - a. Special Call for proposals from North Eastern Regions under Biotech Ignition Grant (BIG) (1st December, 2019-15th January, 2020)
 - b. BIRAC-TiEWInER (Women in Entrepreneurial Research) Award- 3rd Edition (22nd November, 2019-15th January, 2020)
 - c. Special Edition of WInER (Women in Entrepreneurial Research) Award for North Eastern Region (1st December, 2019-15th January, 2020)
 - d. Grand Challenges India call on Creating Integrated Solutions for Primary Healthcare in India (Open call).
 - e. Grand Challenges India call on Addressing the determinants of low performance of Frontline Health Workers.

- **Bio Angels Network (BioAngels)**, which would bring together 50+ angel investors, HNIs, early-stage VCs, 10 corporate/family offices leading to 150 investments in 3 years in Biotech Start-ups.
- BIRAC launched 'India Accelerator Platform for Healthcare Innovations' along with United Nation's Health Innovation Exchange (UNHIE) and Social Alpha. This is conceived as a unique program, which aspires to unlock the potential of the Indian Medical Technologies and Digital Health innovations through successful adoption of 100 Indian innovations in the next five years.





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Day 3 – 23rd November 2019

The third day commenced with session Academia-Startup policies which focussed on various policies, programmes, interventions that are required to boost Academia Start-ups innovation network. Stakeholders also discussed a strategic roadmap to enhance harmony amongst different Academia –Startup ecosystems across the globe. Additionally, the incubator connect session was designed to work towards an improved cooperation on innovation and technology development between global innovators and start-up ecosystems. Through this session Indian researchers, universities, and enterprises were able to team up with global partners to participate in tackling global challenges and learn best practices from the international incubators. A specialized session FIRST HUB resolved queries of Startups, Entrepreneurs, Researchers, Academicians, Incubation Centres, SMEs etc. related to Regulatory pathways and Regulation, Funding opportunities, Mentorship, Investment opportunities, Market access, Industry Academia partnerships, Intellectual Property.

An intensive interactive Boot Camp course was also launched with the focus on development of novel drugs, including recombinant proteins, monoclonal antibodies, fusion proteins, cell therapy, gene therapy and gene editing technologies. The third day of the conference witnessed the strides from Indian Medtech field highlighting the new regulatory regime, expansion/scale-up of certified testing facilities and roadmap for medical device industry in India. As the technological change in the industry requires continuous innovation, which derives from academic research through a transformation process that converts science-oriented knowledge to marketable products, the scientists in various fields witnessed transformation of academic knowledge into products was deliberated in this session. Subsequently the social innovations panel discussion highlighted the ideas, visions and models necessary to manage and scale-up innovative, sustainable businesses which are designed for social good and case studies represented by three successful start-ups in story telling format; 'Workstation spectrometers' by Dr. R. P. Joshi, Founder & CEO RI Instruments & Innovation India, 'Advanced waste management systems' by Mr. Kabir Udeshi, Founder Director, Flycatcher Technologies and 'Portable labor monitoring device' by Mr. Arun Agarwal, Founder, Janitri.

The conference successfully concluded with a special address made by Ms Gautami Tadimalla, Founder, Life Again Foundation. Secretary DBT Dr. Renu Swarup, conveyed her gratitude to the participants, speakers, panellists, partners and organisers for putting together a wonderful event followed by closing remarks from the partners of Global Bio India, CII, ABLE, Make in India, BIRAC.





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There's enormous potential in India for biotech industry, and it's important to host events like Global Bio-India 2019 that attracts leaders in the industry, academia and give them a platform to exchange ideas. The multi-pronged Global Bio-India 2019 was conducive in bringing together the academia, innovators, researchers, start-ups, medium and large companies for facilitating the innovation ecosystem in India. This conference provided an interactive base for the academic research teams and successful start-ups to discuss how to air ideas into markets. The event also saw exhibitors showcasing their products and drawing attentions of potential investors & stakeholders. The Bio-partnering event was fruitful in helping the stakeholders and investors to connect.

Global Bio-India 2019 was a beacon of interdisciplinary cohesiveness of the Indian biotechnology sector. The knowledge that has been generated and shared needs to be disseminated throughout the biotech sector and stakeholders, academia, innovators, researchers, start-ups, need to continue working together to strive to strive towards the goal of \$100Bn bioeconomy through biosciences by 2025.



Global Bio-India 2019

Power to Transform Lives

Bioscience to bioeconomy—USD 100 Bn By 2025

Global Bio-India Secretariat

Make in India Cell

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Organisers

