बाइरैक
इग्नाइट इनोवेट इंक्यूबैट

birac
Ignite Innovate Incubate

Azadi Ka Amrit Mahotsav

10th

Annual Report | 2021-22

Biotechnology Industry Research Assistance Council
A Government of India Enterprise, Under Department of Biotechnology
Ministry of Science & Technology, Government of India

10 YEARS OF birac

Annual Report 2021-22

Biotechnology Industry Research Assistance Council

A Government of India Enterprise, Under Department of Biotechnology
Ministry of Science & Technology, Government of India

Biotech Expo Inauguration by Hon'ble PM








ABOUT BIRAC

VISION

Stimulate, foster and enhance the strategic research and innovation capabilities of the Indian biotech industry, particularly start-ups and SMEs, for creation of affordable products addressing the needs of the largest section of society.

MISSION

Facilitate and mentor the generation and translation of innovative ideas into biotech products and services by the industry, promote academia - industry collaboration, forge international linkages, encourage techno entrepreneurship and enable creation and sustainability of viable bio enterprises.

FOCUS

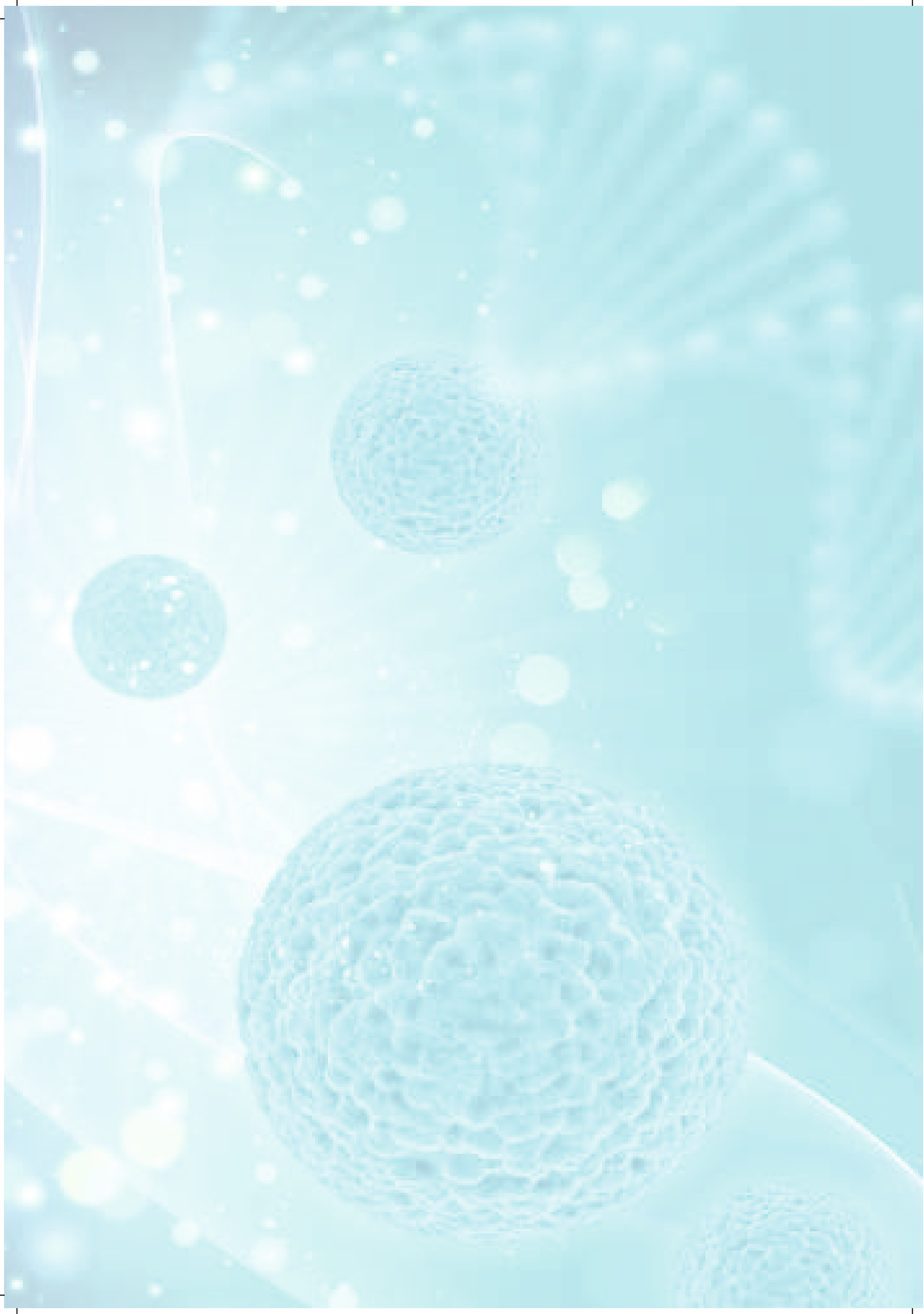
Empowering and Enabling the Biotech Innovation Ecosystem for affordable product development.

CORE VALUES

Integrity → Transparency → Team work → Excellence → Commitment

KEY STRATEGIES

- Foster innovation and entrepreneurship in all places of research
- Promote affordable innovation in key social sectors
- Higher focus on startups & small and medium enterprises
- Contribute through partners for capacity enhancement
- Encourage diffusion of innovation through partners
- Enable commercialisation of discovery
- Ensure global competitiveness of Indian enterprises



EXECUTIVE SUMMARY

Biotechnology Industry Research Assistance Council (BIRAC) is a Not-for-profit, Section 8, Public Sector Enterprise set up in 2012 with a mandate to strengthen and empower emerging Biotech enterprises. The organization is committed to deliver the required outcome of promoting, nurturing and enabling the Biotech Innovation Ecosystem for development of globally competitive affordable products to address the unmet needs of society at large. Over 10 years of existence, BIRAC has taken up a multitude of activities from providing funds for high-risk translational research, supporting nascent ideas, capacity building through creating bioincubation centers as shared infrastructure, handholding through mentoring and training, to policy advocacy for empowering the biotech ecosystem in India.

Biotechnology has been recognized as the sunrise sector as it holds immense potential to contribute to India's target of USD 5 Trillion by 2024. Policy initiatives of the Government of India (GoI) such as Make in India and Startup India programs are aimed to develop India as a world-class Biotechnology innovation and Bio-manufacturing hub. The Indian Bio-Economy for 2021 is estimated at $80.12 billion. This accounted for nearly 2.6 percent share of India's GDP. India's Bioeconomy continued to perform well even during the pandemic years and registered 14.1% growth. The strong biotech ecosystem in the country responded successfully to the needs of Covid vaccine and testing in record times. The Bio-Economy target for 2025 is $150 billion where Biopharma, Diagnostics, Medical Devices, and Bio-industrial segments are likely to see growth both in consumption and exports. Global challenges like climate change require a reduction in carbon footprint. India's target for achieving global commitment of carbon net zero target is 2070, European countries & North America intend to achieve it before 2050. Here, innovative biotech-based solutions are expected to play a critical role. Likewise, alternate solutions for reducing dependence on non-renewable resources are also expected to evolve from biotech interventions. For example, ethanol production from natural resources for fuel blending, bioplastics to replace non-degradable polymers, biofertilizers and biopesticides to replace chemicals and pesticides, bioprocesses as green solution to replace polluting chemicals/ chemical synthesis. Biotech innovation ecosystem is largely driven by startups. The total number of biotech start-ups in 2021 has increased to 5365.There were 1128 new biotech startups registered in 2021. The growth of biotech innovation ecosystem in the country is linked with the pioneering & dedicated efforts of BIRAC. The success of the BIRAC model is primarily the outcome of the vision of the Department of Biotechnology (DBT) to promote innovation and R&D. BIRAC's programs, schemes and activities have been designed for the ecosystem growth requirements. Based on ground-level assessment by Project Divisions & Stakeholder's consultations, new schemes/programs are added & existing ones improvised. BIRAC schemes and activities are meant to create a pipeline of entrepreneurs & Startups in the country by providing systematic and value-added handholding during the journey of an idea maturing into a product for commercialization.

Over the last 10 years, BIRAC has contributed significantly to the growth of biotech ecosystem. Constantly growing numbers of applications received for funding support, increasing number of Startups, awards, recognition of Indian startups at national and international platforms, and commercialization of Made in India products reflect a tangible growth of the Biotech Startup Ecosystem in the country. BIRAC has over the years supported 4000+ beneficiaries.

75
Incubation Centres

7.1 Lakh+
Sq.ft. Incubation space

10 Lakh+
Students/ entrepreneurs engaged

800+
Products in market

1300+
IPs filed

25,000+
Proposals assessed

3700+
Startups/ Entrepreneurs supported

4000 Cr+
Follow-on-funding raised by >130 startups

100+
National & International Partnerships

350+
Academia Supported

30,000+
High skilled jobs created

10,000+
Mentor Pool

6300 Cr+
Total Investment

3900 Cr+
BIRAC Funding

2400 Cr+
Co-funding by Industry & Others

10 Years of BIRAC:
Nurturing & Strengthening Biotech Innovation Enterprise

To showcase the strengths of Biotech Startup Ecosystem, first of its kind, a mega national event called Biotech Startup Expo 2022 was recently organized. The Expo was inaugurated by Hon'ble Prime Minister Shri Narendra Modi Ji. The event witnessed a footfall of 5000+delegates over 2 days.

Biotech Startup Expo 2022 inaugurated by Hon'ble Prime Minister

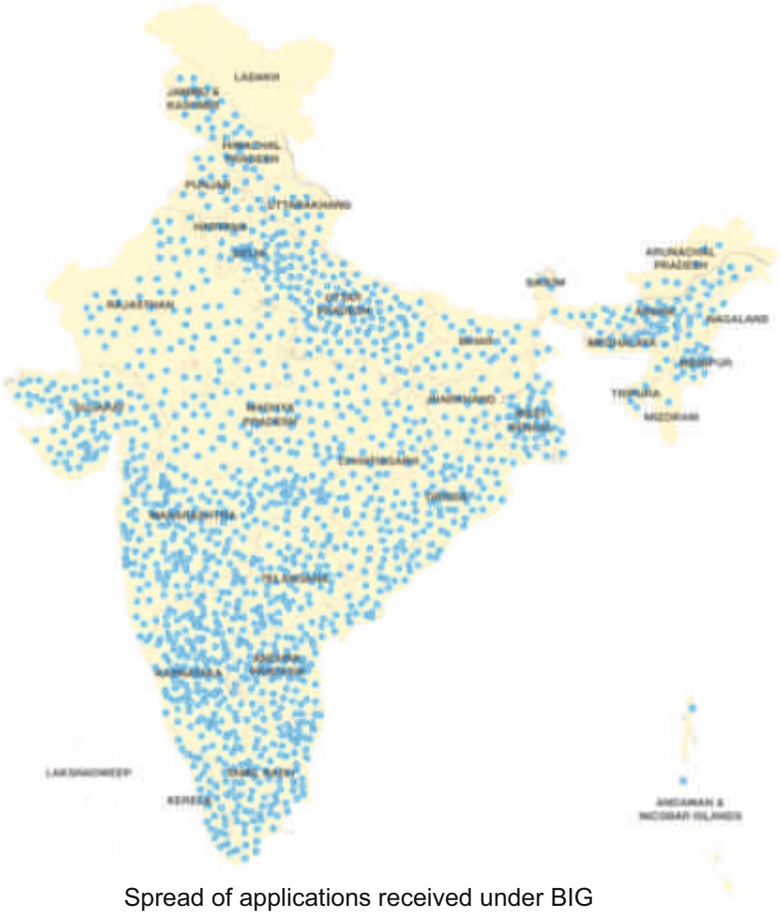
BIRAC operates through Public Private Partnerships (PPP) using various models:

BIRAC's programs, schemes and policy initiatives are supplemented through strategic collaborations, partnerships with National & International bodies, Government departments, Agencies, States, Industry, Angels/ VCs, Mentors, Experts, Philanthropic organizations, NGOs etc.

*BIRAC's Partners'

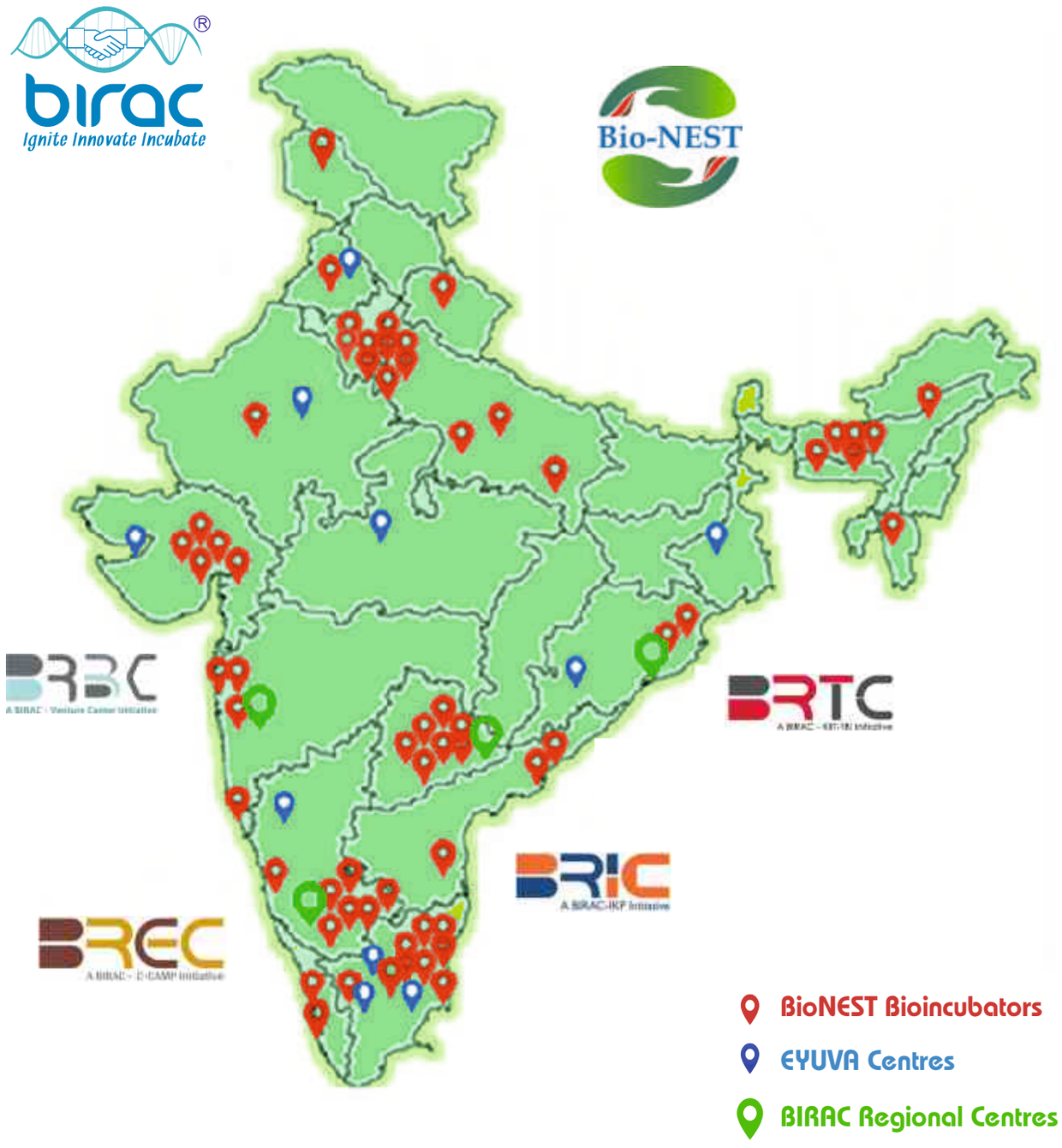
*Non-exhaustive representation

BIRAC's BIG programme has been instrumental in nurturing a pipeline of biotech startups. So far, more than 800 innovative ideas have been supported out of 10,000 applications received from across the country. The spread of aspirants covers 550+ cities and 38 aspirational districts pan India. More than 50% of the applications under BIG are from Tier 2&3 cities. Early-stage schemes like SITARE, Social Innovation Immersion Programme (SIIP) create a pipeline of innovators for BIG scheme.



Spread of applications received under BIG

BIRAC's Bioincubation (BioNEST) and pre-incubation (EYUVA) programmes have created & supported 74 bioincubation facilities across the country. These facilities provide nurturing grounds to nascent ideas by providing access to high end infrastructure, specialized and advanced equipment, business mentorship, IP, legal and regulatory guidance, and networking opportunities. These facilities are located within Universities, Research Institutes, Research Hospitals, or as stand-alone centres. The centres have also been seeded in emerging clusters of Tier 2/3 cities bringing opportunities closer to the entrepreneurs, thereby obviating the need to dislocate from their home towns for the lack of opportunities locally. BioNEST Incubators have supported more than 1800 incubatees, more than 1300 IPs have been filed by the incubatees and 800+ products have reached market.



Incubation Centers, Pre-incubation centers & BIRAC Regional Centers

Small Business Innovation Research Initiative (SBIRI) and Biotechnology Industry Partnership Programme (BIPP) Schemes under the umbrella of i4: Intensifying the Impact of Industrial Innovation to support biotechnological product/technology development by strengthening R&D capabilities of start-ups/companies/ LLPs. i4 provides the desired impetus for taking translational ideas forward for validation, scale-up, demonstration and pre-commercialization. SBIRI facilitates companies to take their Proof of Concept (PoC) towards early-stage validation. While BIG scheme becomes a feeder line for SBIRI, non-BIRAC funded startups can also apply. Since its inception in 2005, the scheme has supported 318 projects resulting in the validation/commercialization of 57 products/technologies and filing of 46 patents. BIPP scheme serves as a launch pad for scaling and commercializing high-risk innovations through cost-sharing between BIRAC and the Industry. Here SBIRI graduates and industry R&D leads are a potential feeder line. Since its inception, 232 projects including 65 collaborative projects have been supported under BIPP. A total of 63 products/technologies have been developed till date. While some of these have already been commercialized, others are at the pre-commercialization stage.

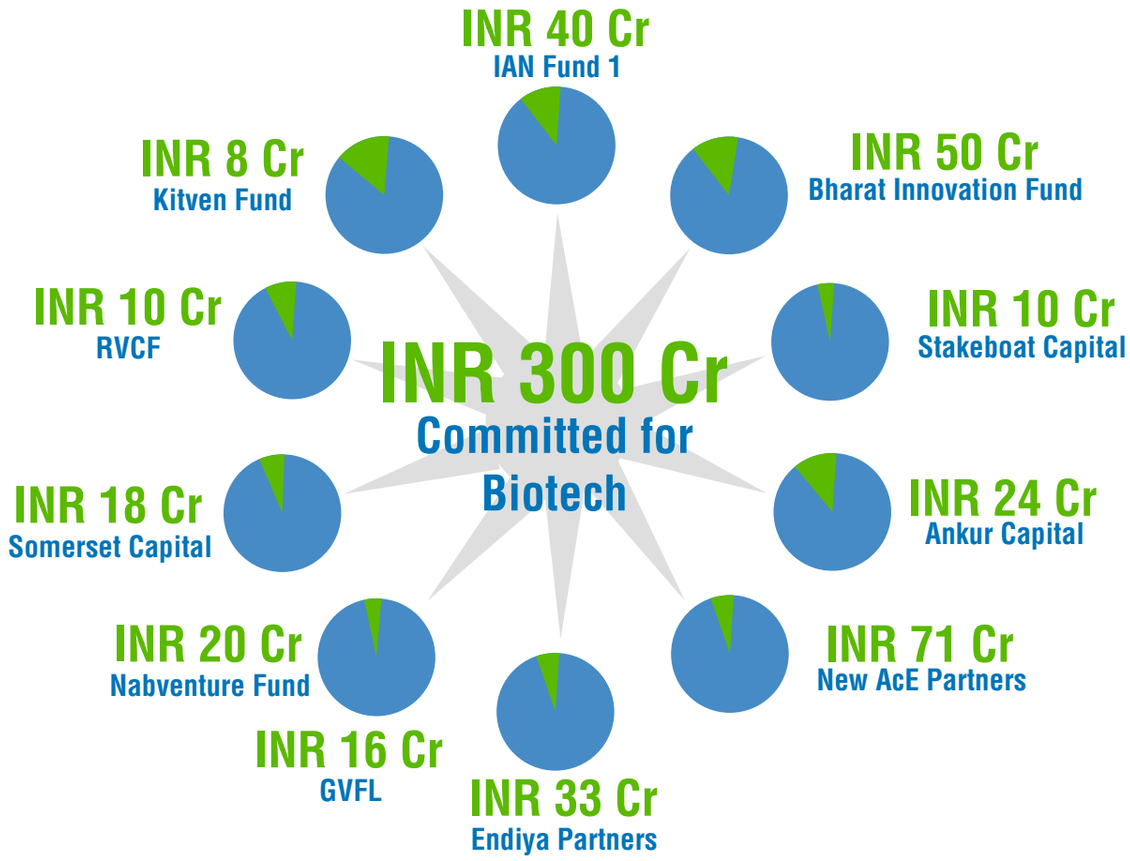
i4 Achievements

To boost translational research within academia, BIRAC initiated the PACE Scheme (Promoting Academic Research Conversion to Enterprise). PACE has 2 components, namely AIR (Academic Innovation Research) which promotes the development of Proof-of-Concept (PoC) for a process/product by academia; and CRS (Contract Research Scheme) which enables validation of a process or prototype (developed by the academia) by an industry partner. So far, 145 projects have been supported under the scheme, with 10 technologies/products validated and 16 IPs generated. Early Translation Accelerators (ETAs) have also been established by BIRAC to realize academic discoveries into products by providing translational support for integration with industry.

Towards the end of the product development cycle (Pre-product stage/Pre-revenue stage), additional funds are required for preparing the ground for market launch, test-validation in targeted markets, and commercialization of successfully validated products/technologies. Such support is given under the Product Commercialization Program (PCP).

There are certain equity schemes as well. SEED (Sustainable Entrepreneurship and Enterprise Development) Fund; LEAP (Launching Entrepreneurial Driven Affordable Products) Fund and Biotechnology Innovation (AcE –

Accelerating Entrepreneurs) Fund-of-Funds, which offer support to the early-stage start-ups for differential growth and help the entities to attract private investment from Angels and VCs. By FY 2021-22, 122 startups have been supported through equity support under SEED and LEAP. Out of these startups, more than 60% have raised follow on funding amounting to about INR 390 Cr. We can now see increasing numbers of Startups getting investments from Angels, HNIs, and early-stage VCs contributing to the growth story of biotech industry. AcE-Fund-of-Funds has 10 daughter funds with BIRAC's investment commitment of INR 114.5 Cr. This has successfully mobilized INR 375 Cr investment in 65 biotech Companies.



AcE Daughter Funds

BIRAC recently entered into a partnership with IAN to launch a unique platform called BioAngels, which is expected to be India's single largest horizontal platform for seed and early-stage investing. BioAngels platform is now operational.

The COVID-19 pandemic brought in several challenges. India's biotech innovation ecosystem was able to convert some of it into opportunities. BIRAC responded to the new requirements posed by the Covid-19 Pandemic by offering funding and other support under various initiatives like COVID Research Consortium, Fast Track funding scheme, regulatory facilitation through frequent FIRST Hub Meetings, etc. Support was extended for the development of vaccines, therapeutics, diagnostic kits, remote monitoring devices, masks, coveralls, sanitizers, health and vital monitoring devices which were the need of the hour. In addition, several parallel efforts were undertaken under Mission COVID Suraksha to make India self-reliant. India's success in the COVID vaccine segment has been globally recognized and made India proud. Four Covid vaccines have been validated through BIRAC support:

ZyCoV-D
(Cadila Healthcare)

World's first DNA Vaccine for COVID-19, received EUA for 12 years and above age

Corbevax
(Biological E)

Protein Subunit Vaccine, received EUA for 05 years and above age

GEMCOVAC-19
(Gennova Biopharmaceuticals)

mRNA vaccine, received EUA

BBV 154
(Bharat Biotech)

Replication deficient Chimpanzee adenovirus-based Intranasal vaccine

Covid Vaccines validated through BIRAC support

In addition to the above, Capacity building for animal challenge studies and clinical immunogenicity assays were supported. 19 sites have been supported to ensure availability and access to Good Clinical Practice (GCP) compliant clinical trial sites for vaccine developers. Facility augmentation to support COVID vaccine manufacturing is also being undertaken at Bharat Biotech International Limited (BBIL), Malur facility and Indian Immunologicals Limited (IIL), Hyderabad.

BIRAC is known for active engagement with biotech startups, incubators, Industry, Investors, academia & other Stakeholders including our partners. 4 Regional centers of BIRAC (BRIC, BREC, BRBC, and BRTC) also conduct several focused niche area meetings, regulatory workshops, entrepreneurship development workshops, roadshows, grant writing workshops as well as support several technology networks and platforms. Various annual events like Global Bio India, BIRAC Foundation Day, Innovator`s Meet provide platforms for start-ups to meet, showcase, network & share learnings among peers & Industry.

BIRAC also sponsors startups for international immersion programs & exposure to global competitions such as SLUSH, Finland; Latitude59, Estonia, MEDinISAREL, InSpRENEUR 3.0 and IGNITE mentoring school in UK.

BIRAC's in-house IP & Technology Management group provides support to startups, institutes, academia, and SMEs on various aspects of IP & Technology Management which includes Patent Searches (Freedom-To-Operate, Patent landscape, Patentability search), facilitation of Patent drafting & filing, Technology evaluation and its commercialization. BIRAC-PATH (Patenting and Technology for Harnessing Innovations) scheme is to facilitate the protection of IPR in India as well as internationally. BIRAC also facilitates Technology Transfer and commercialization of the innovations/technologies developed by the BIRAC innovators. FIRST Hub, a facilitation unit having representatives from DBT, BIRAC, CDSCO, NiB, GeM, KIHT addresses the queries of Entrepreneurs. 50+ meetings of the group have been organized along with Special Session on COVID-19 conducted to address more than 750 queries of innovators. Regulatory Information and Facilitation Centre (RIFC) at BIRAC's Regional Centre- BRBC also assists bio-entrepreneurs in planning, seeking and securing regulatory approvals.

An important element of BIRAC's strategy is to help catalyze technology transfer between academia and industry both within and outside the country. BIRAC under the National BioPharma Mission has supported 7 Technology Transfer Offices (TTOs) complementing the BioNEST Incubators. BIRAC has also created an innovation showcase portal (https://biotechinnovations.com), which features 750+ products/technologies from BIRAC supported Biotech Startups for global access and facilitates connections between technology seekers and innovators.

BIRAC has built significant partnerships to implement its vision and mission. These partnerships include both national and international organizations such as World Bank, Bill & Melinda Gates Foundation (BMGF), Wellcome Trust, CEFIPRA, Business Finland, USAID, Vinnova – Sweden, Social alpha, Tata Trust, WISH foundation, NESTA, CARB-X, TiE-Delhi NCR, ISBA, NASSCOM, UKRI to name a few. BIRAC also works closely with other public agencies and governmental departments such as DPITT, DST, MeitY, MoHFW, ICMR, CSIR Department of Agriculture, MNRE, TDB etc. to implement its mandate. BIRAC has close connects with industry associations such as CII, FICCI, ABLE, others.

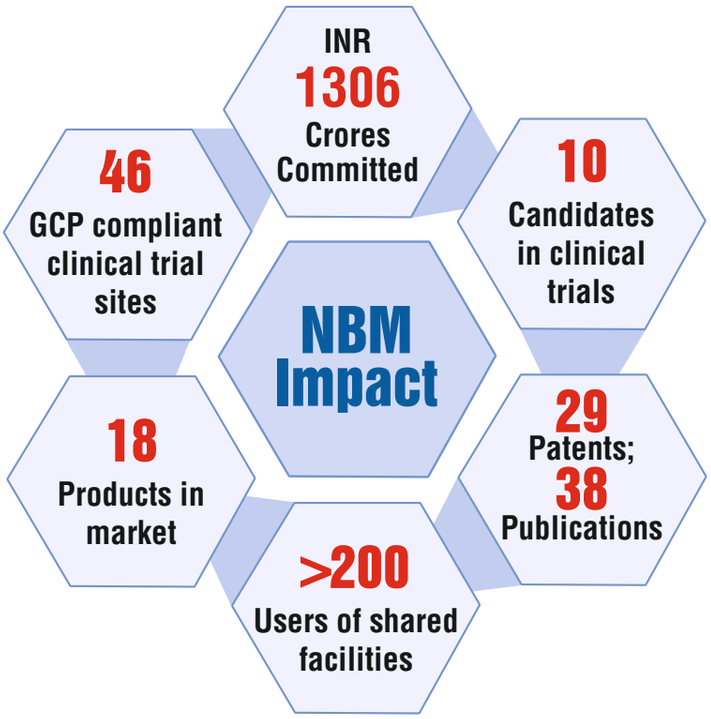
The Make in India (MII) Cell for Biotechnology at BIRAC ensures wider dissemination of Government programmes and other information relevant to the establishment and growth of startups, SMEs and large companies. MII Cell also contributes to the Start-up India action plan integrating BIRAC's facilitation for funding and incubation support to start-ups. The cell carries out regular mapping of the Indian Bioeconomy and biotech innovation ecosystem, guides the investors, Startups, and entrepreneurs onto the gamut of business-related issues in biotechnology such as regulatory landscape in the country, investment opportunities, FDI/EXIM/ Industrial policies while working closely with Invest India and Startup India Cell at DPIIT. Policy-level suggestions, initiatives, and identification and creation of national and international opportunities for innovators are also being supported by this cell.

Strategic reports like Annual India Bioeconomy Report (IBER), BIRAC's Support to Startup Ecosystem in the Country have become referral documents for national and international database/stakeholders. CSR initiative that enabled receipt of funds for BIRAC & BIRAC supported incubators is also steered by the cell. Technology cluster as a national initiative recommended by MII cell through BIRAC is under MoF consideration.

BIRAC also houses a Project Management Unit (PMU) for Grand Challenges India (GCI), in collaboration with DBT and Bill & Melinda Gates Foundation (BMGF). GCI has a wide mandate and covers a broad range of health and developmental priorities, ranging from maternal and child health; infectious diseases; vaccines; point-of-care diagnostics; agriculture; food and nutrition to other related arenas of developing nations. GCI manages 34 programs at various stages in their lifecycle; from basic science research in laboratories, to proof-of-concept projects and potentially to scale-up innovation projects across the aforesaid thematic areas.

The Grand Challenges India supported India's first indigenously developed quadrivalent HPV types (6,11,16 and 18) vaccine for cervical cancer prevention, which has received marketing authorization approval from the Drug Controller General of India (DCGI) for CERVAVAC on 12th July 2022.

The National Biopharma Mission (NBM) is a government-industry-academia collaboration dedicated to 'Accelerating Discovery Research to Early Development for Biopharmaceuticals', funded at a total cost of INR 1500 Cr, co-funded by the World Bank at 50% cost sharing with Department of Biotechnology. The mission is supporting 197 grantees working in different verticals-Medical devices and diagnostics, Vaccines and Biotherapeutics to plug in the necessary gaps in biopharmaceutical development pipeline.



DBT's Ind-CEPI mission entitled "Epidemic preparedness through rapid vaccine development: Support of Indian vaccine development aligned with the global initiative of the Coalition for Epidemic Preparedness Innovations (CEPI)" is being implemented through a dedicated Program Management Unit (PMU). It has supported the mRNA vaccine candidate by Gennova Biopharmaceuticals Ltd. and Chikungunya vaccine candidate by Bharat Biotech International Ltd. The mission organized an e-Course Series "Strengthening Clinical Trial Research Capacity in Neighbouring Countries" in collaboration with CDSA, Faridabad. Ind-CEPI is also providing consultancy support for the development of Quality Management System and currently, six facilities have been selected for consultancy support that are expected to reach GLP and ISO 17025:2017 accreditation.

In addition, there are other special niche area programs like Program on Synthetic biology, Innovation Clean Technology-scale up, Program on Gaur Gum, Mission program on Antimicrobial Resistance, New Drug Development Program, Mission program on Technologies for Swachh Bharat, Secondary Agriculture Entrepreneurial Network, BIRAC Innovation Challenge Award-SoCH, Women entrepreneurship promotion programmes.

New Initiatives:

During the FY 2021-22, BIRAC took up a few new initiatives including setting up BioNEST Incubator clusters, launch of focused calls, partnering with relevant private organizations and states, such as the following:.

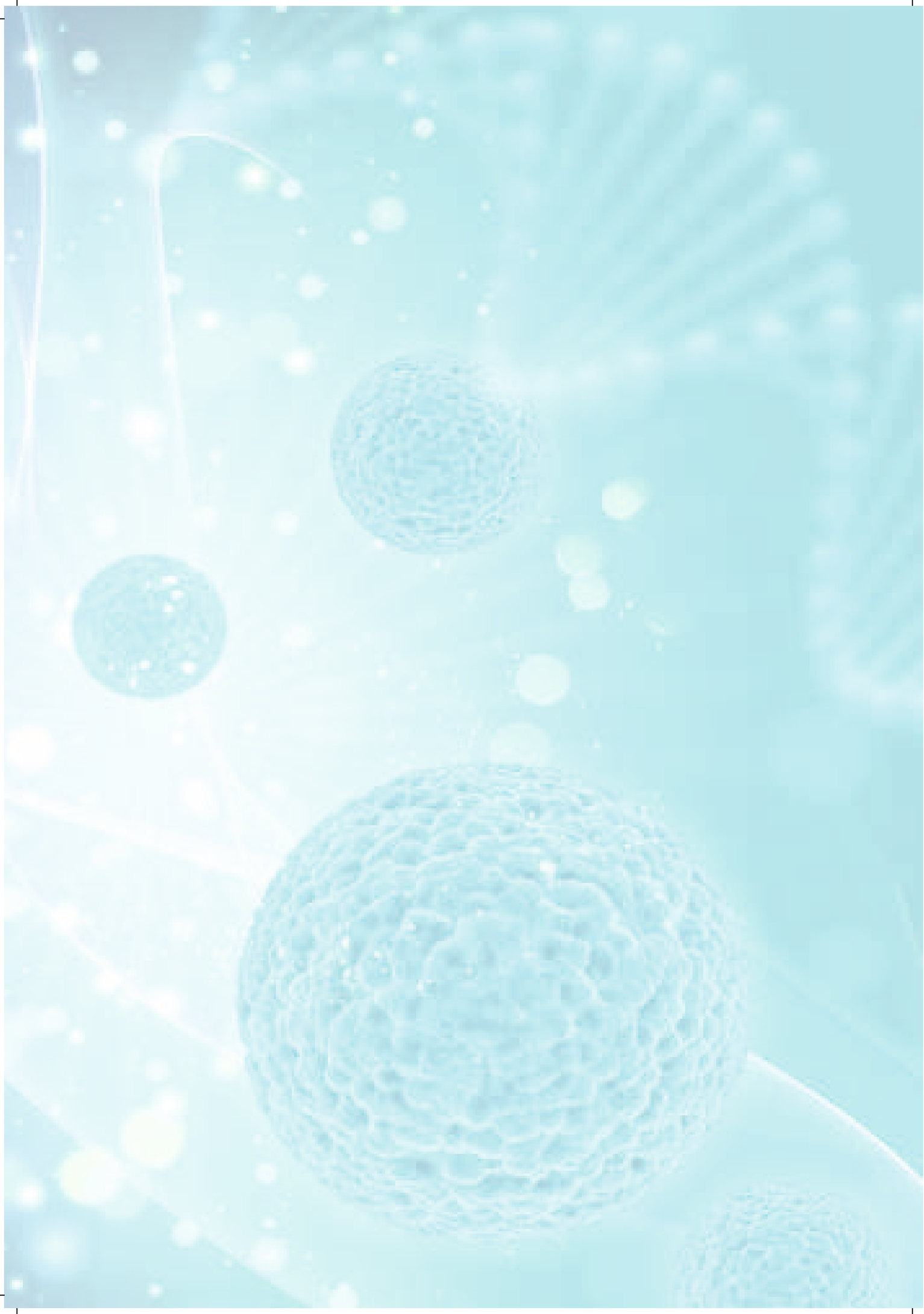
- Launch of Amrit Grand Challenge "जनCARE" program to identify and support 75 innovations in Digital Healthtech in partnership with NASSCOM, GCI and IKP Knowledge Park is an example of an important partnered initiative. About 50% of funding requirement has been mobilized from external partners.

- Punjab State Council for Science and Technology joined hands with BIRAC for field validation of two healthcare startups under the "जनCARE" Innovation Challenge.
- BIRAC in partnership with IKP Knowledge Park announced a Grand Challenge in "Agri-technology Translation to Boost Farmers' Income" with the mandate to identify 'ready to deploy' and 'scalable innovations' in agriculture that will help in increasing the incomes of farming households.
- BIRAC can now receive and deploy Corporate Social Responsibility (CSR) Funds for promoting social impact innovations in varied areas including healthcare, agriculture, clean environment and so on. Under this initiative, Stryker India Private Limited and Stryker Global Technology Center Private Limited joined hands with BIRAC this year to support digital health tech innovations.
- Several bioclusters are also taking shape. BioNEST incubators created 7 soft clusters. There has been a special focus on East & North East to nurture and provide handholding for Biotech entrepreneurship in order to harness the regional strengths for development of biotech enterprises. BIRAC's Regional Centre BRTC at KIIT-BioNEST and special call for North East under BIG are two such initiatives undertaken to promote entrepreneurship and harness local potential in the North East Region.

Way forward:

India's Biotech Startup ecosystem is poised to scale and grow globally. A momentum is evident with the creation of a critical mass of Startups, Incubation facilities, and investors pool that have emerged in the last 10 years. BIRAC's investment in the ecosystem over these years has attracted infusement of equivalent or rather higher volume of private funding into startups by Angels and VCs. The number of biotech products reaching to the market, jobs created, outreach efforts, etc. have scaled 10 times. This is likely to increase and grow further by several folds in the next 5 years putting the onus on central bodies like BIRAC to respond and lead this growth change.

As we move on, BIRAC's endeavor would be to consolidate what it has created so far and pick on those critical components which need to be built upon. Atamnirbhar Bharat, Biosciences to Bioeconomy, Power to Transform Lives, VigyanSeVikas, sustaining innovation and facilitating the Startup Biotech Ecosystem towards commercialization of products and technologies would be high on priority.



CONTENT

Biotechnology Industry Research Assistance Council

CIN: U73100DL2012NPL233152
Regd office: 1st Floor, MTNL Building, 9, CGO Complex, Lodhi Road, New Delhi-110003
Website: www.birac.nic.in | **Email:** birac.dbt@nic.in
Tel: 011-24389600 | **Fax:** 011-24389611

Notice

Notice is hereby given that the Tenth Annual General Meeting of the Company will be held on:

Day and Date: Thursday 24th November, 2022 **Time:** 2:00 P.M

Venue: 1st Floor, MNTL Building, 9 CGO Complex, Lodhi Road, New Delhi -110003

for transacting the following business:

Ordinary Business:

1. To receive, consider and adopt the Audited Financial Statement of the Company as on March 31, 2022 together with the Reports of the Directors and Auditor thereon and comments of the Comptroller & Auditor General of India in terms of Section 143(6)(b) of the Companies Act, 2013;
2. To fix the remuneration of the Statutory Auditor for the financial year 2022-23, in terms of provisions of Section 139(5) read with Section 142 of the Companies Act, 2013.

Special Business:

3. **To appoint Dr. Subhra Ranjan Chakrabarti, (DIN No. 09435840) as Director (Operations) of the Company and pass the following resolutions as an Ordinary Resolution:**

   To consider and if thought fit, to pass with or without modification(s), the following Resolution as an Ordinary Resolution :

   "RESOLVED THAT pursuant to provisions of Section 152 and other applicable provisions of the Companies Act, 2013 read with rules made thereunder (including any statutory modification(s) or re-enactment thereof for the time being in force) and as per the provisions of Articles of Association of the Company, Dr. Subhra Ranjan Chakrabarti (DIN No. 09435840), who was appointed as Director (Operations) as per order dated no. PSU-13/14/2020-AIPSU-DBT dated 02.12.2021 issued by Department of Biotechnology, Ministry of Science and Technology acting on behalf on President of India and subsequently appointed as an Additional Director (Operations) by the Board of Directors w.e.f effective activation of his DIN number to hold office until the date of Annual General Meeting, in terms of Section 161 of the Companies Act, 2013 be and is hereby appointed as Director (Operations) of the Company on **terms and conditions** as fixed by the Government of India.

   RESOLVED FURTHER THAT the Managing Director of the Company and Company Secretary be and are severally hereby authorized to file forms with the Registrar of Companies Delhi, to make necessary entries in the statutory registers of the Company and to do all such acts/deeds/things as may deem fit to give effect to this resolution."

4. **To appoint FCA Ms. Nidhi Shrivastava, (DIN No. 09436809) as Director (Finance) of the Company and pass the following resolutions as an Ordinary Resolution:**

   To consider and if thought fit, to pass with or without modification(s), the following Resolution as an Ordinary Resolution :

   "RESOLVED THAT pursuant to provisions of Section 152 and other applicable provisions of the Companies Act, 2013 read with rules made thereunder (including any statutory modification(s) or re-enactment thereof for the time being in force) and as per the provisions of Articles of Association of the Company, FCA Ms. Nidhi Shrivastava (DIN No. 09436809), who was appointed as Director (Finance) as per order dated no. PSU-13/14/2020-AIPSU-DBT dated 02.12.2021 issued by Department of Biotechnology, Ministry of Science and Technology acting on behalf on President of India and subsequently appointed as an Additional Director (Finance) by the Board of Directors w.e.f effective activation of her DIN number to hold office until the date of Annual General Meeting, in terms of Section 161 of the Companies Act, 2013 be and is hereby appointed as Director (Finance) of the Company on **terms and conditions** as fixed by the Government of India.

   RESOLVED FURTHER THAT the Managing Director of the Company and Company Secretary be and are severally hereby authorized to file forms with the Registrar of Companies Delhi, to make necessary entries in the statutory registers of the Company and to do all such acts/deeds/things as may deem fit to give effect to this resolution."

NOTES:

1. MEMBERS ENTITLED TO ATTEND AND VOTE MAY APPOINT ONE OR MORE PROXIES TO ATTEND AND VOTE INSTEAD OF THEMSELVES. PROXIES TO BE VALID MUST BE RECEIVED AT THE REGISTERED OFFICE OF THE COMPANY NOT LESS THAN FORTY-EIGHT HOURS BEFORE THE APPOINTED TIME OF THE MEETING.
2. A statement pursuant to Section 102 of the Companies Act, relating to the Special Business item 3 & 4 to be transacted at the Annual General Meeting is annexed hereto.
3. **Profile of Director Operations:**

   Dr. Subhra Ranjan Chakrabarti is the Director (Operations) of Biotechnology Industry Research Assistance Council (BIRAC), Department of Biotechnology, Government of India. Prior to this, he was the Associate Vice President and Manufacturing Technology Leader for South for Global Program with Sanofi Healthcare India Private Limited (Previously Shantha Biotechnics), Hyderabad. He has eight years of research experience in the academic environment and concurrent twenty years in a leading Biotechnology Company in the area of vaccines, Monoclonal Antibodies, Recombinant therapeutics, and cancer research. During this period, he has contributed significantly in all the areas of the product value chain. Dr. Chakrabarti also lead several successful vaccine manufacturing technology transfer and validations. He obtained his PhD in Biophysics and Molecular Biology from University of Calcutta. He completed his post-doctoral research at the Cardinal Bernardin Cancer Center, LUMC, Illinois, USA. He has several publications to his credit.
4. **Profile of Director Finance:**

   FCA Ms. Nidhi Shrivastava is a Fellow member of The Institute of Chartered Accountants of India and holds a Bachelor's degree in Law from Delhi University. She has also graduated in Environmental Sciences from Ramjas College, North Campus, Delhi University along with certification in "Risk Mitigation through Forensic document examination" from LNJN, Ministry of Home Affairs. As an astute professional, FCA Ms. Nidhi Shrivastava has over 20 years of diverse experience in various aspects of Finance & Accounts with thematic expertise in Financial Planning, Budgeting, Taxation, Audit, Banking a Treasury, Asset Liability Management and Fund Management etc. FCA Ms. Nidhi Shrivastava has played an instrumental role at several noteworthy companies which include NTC Ltd., NAFED, Deloitte and Ernst & Young.
5. Only bonafide members of the Company whose names appear in the Register of Members in possession of valid attendance slips duly filed and signed will be permitted to attend the meeting. The Company reserves its right to take all steps as may be deemed necessary to restrict non-members from attending the meeting.
6. It will be appreciated that queries, if any, on accounts and operations of the Company are sent to the registered office of the Company at least 48 hours in advance of the meeting so that the information may be made readily available.
7. This meeting is being called at shorter notice with the consent of the requisite number of shareholders as prescribed under Companies Act, 2013.

By Order of the Board

Sd/-
Kavita Anandani
Company Secretary

Registered Office:
1st Floor, MTNL Building, 9, CGO Complex, Lodhi Road, New Delhi-110 003

Date: 7th November, 2022

Annexure to Notice

Explanatory Statement

Pursuant to Section 102 of the Companies Act 2013

Item No. 3

Appointment of Dr. Subhra Ranjan Chakrabarti (DIN No. 09435840): The Board of Directors have appointed Dr. Subhra Ranjan Chakrabarti, (DIN No. 09435840) as Director (Operations) as per order dated no. PSU-13/14/2020-AIPSU-DBT dated 02.12.2021 issued by Department of Biotechnology, Ministry of Science and Technology acting on behalf of President of India and subsequently appointed as an Additional Director (Operations) by the Board of Directors w.e.f activation of his DIN number to hold office until the date of Annual General Meeting, in terms of Section 161 of the Companies Act, 2013. Further, in terms of Section 152(2) of the Companies Act, 2013 every director shall be appointed by the Company in the general meeting.

He is not holding any directorship and he does not hold any equity shares of the Company. He does not have inter-se relationship with other directors on the Board of the Company.

Except Dr. Subhra Ranjan Chakrabarti, none of the Directors interested or concerned in this resolution.

The Board Recommends the Ordinary Resolution as set out at item no. 3 for approval of members.

Item No. 4

Appointment of FCA Ms. Nidhi Shrivastava (DIN No 09436809): The Board of Directors have appointed FCA Ms. Nidhi Shrivastava, (DIN No. 09436809) as Director (Finance) as per order dated no. PSU-13/14/2020-AIPSU-DBT dated 02.12.2021 issued by Department of Biotechnology, Ministry of Science and Technology acting on behalf of President of India and subsequently appointed as an Additional Director (Finance) by the Board of Directors w.e.f activation of her DIN number to hold office until the date of Annual General Meeting, in terms of Section 161 of the Companies Act, 2013. Further, in terms of Section 152(2) of the Companies Act, 2013 every director shall be appointed by the Company in the general meeting.

She is not holding any directorship and she does not hold any equity shares of the Company. She does not have inter-se relationship with other directors on the Board of the Company.

Except FCA Ms. Nidhi Shrivastava, none of the Directors interested or concerned in this resolution.

The Board Recommends the Ordinary Resolution as set out at item no. 4 for approval of members.

By Order of the Board

Sd/-
Kavita Anandani
Company Secretary

Registered Office:
1st Floor, MTNL Building, 9, CGO Complex,
Lodhi Road, New Delhi-110 003

Date: 7th November, 2022

CHAIRPERSON'S MESSAGE

Dr. Rajesh S. Gokhale
Secretary, Department of Biotechnology
Ministry of Science & Technology, Government of India &
Chairman, BIRAC

It gives me immense pleasure to reflect upon BIRAC's progress over the past year. I take this opportunity to thank the entire BIRAC team, our experts, partners and grantees for their commitment towards our shared vision of strengthening the biotech ecosystem in the country. Over the past 10 years, BIRAC has made great strides in nurturing the talent pool and providing startups the opportunity to Seed, Succeed and Scale.

India's biotech sector has drawn global recognition, especially during the pandemic period. We all witnessed how COVID-19 vaccination has substantially altered the course of pandemic, saving tens and millions of lives globally. It inspires a sense of pride that many of the BIRAC supported innovators have come forward with their innovative solutions to address the challenge of COVID-19. This demonstrates that with the advancements, Indian biotechnology industry is becoming a leading destination for clinical trials, contract research and manufacturing activities globally.

Our other flagship programs such as BIG, SBIRI, BIPP, CRS, BioNEST Incubators, SEED and LEAP Fund continue to provide pathways for the development of products and technologies which will contribute to improved healthcare, agriculture, food and nutrition, animal husbandry, new forms of biofuels & energy sources and a cleaner environment. Through all these programs, startups have received not only funding support but access to mentors and expertise for regulatory, go-to-market strategy, fundraising and commercialization which has been facilitated by BIRAC.

BIRAC through its BioNEST scheme supported 4 new BioIncubators this year. This is in addition to the support extended to the existing 60 BioNEST incubators. Product Commercialization Program Fund initiated by BIRAC for funding startups with matured products/technologies meets the challenges towards large scale commercialization. First Hub program is first of its kind platform created by BIRAC to address regulatory queries of startups. The program has been very well received by both innovators as well as regulators. During the FY 2021-22, >50 meetings were organized and >750 queries were addressed under First Hub sessions.

BIRAC continues to foster deeper engagement with all our national and international partners to fuel the ecosystem through interactions with high quality investors and industry leaders.

Biotech Startup Expo-2022 was organized by DBT-BIRAC, inaugurated by our Hon'ble Prime Minister on 9th June, 2022 as a part of 10 years celebration of BIRAC's enabling efforts towards progressing India's Biotech Sector. The two-day event was a congregation of biotech stakeholders

across the country. The program also exhibited the Biotech Startups and Bio-incubators and was open to general public to explore the products and infrastructure being created by the country, for the country.

DBT-BIRAC hosted its 10th Biotech Innovators Meet on 28th September 2021, under the Azadi Ka Amrit Mahotsav banner honoring 'Vigyan se Vikas'. The launch of a nationwide Grand Innovation challenge program, "Amrit Grand Challenge-JanCARE" by BIRAC was also announced during the meet. Partnership with other Ministries and National initiatives include Make-in-India, Startup India, and Invest India help in building aligned strategies for biotechnology to fulfill the needs of the nation.

BIRAC has been complying with the requirements of Corporate Governance as stipulated by the Department of Public Enterprises (DPE) for Central Public Sector Enterprises (CPSEs). The Corporate Governance report for the year 2021-22 forms part of this Annual Report.

I am confident that BIRAC will continue to bring in transformational change through supporting and sustaining cutting edge technologies that would offer solutions to challenges faced not only by the country, but also by the rest of the world.

Dr. Rajesh S Gokhale
Secretary, DBT & Chairperson, BIRAC

MANAGING DIRECTOR'S MESSAGE

Dr. Alka Sharma
Scientist 'H'/Senior Adviser,
DBT and
Managing Director, BIRAC

It is a great privilege to share my thoughts with you for the first time since taking over as the Managing Director of BIRAC. The annual report provides a good opportunity to reflect on the previous year, and assess our accomplishments. Being a part of BIRAC's family and writing for this 10th Annual Report gives me immense satisfaction in summarizing BIRAC's performance.

The schemes and programs of BIRAC have been strategically designed to cater to the entire product development cycle vis-a-vis ideation, proof of concept, validation, and commercialization. The last two years brought to the forefront, the need for agility, adaptability, and transformation, as the biotechnology industry grappled with one of the most challenging periods in recent history. Department of Biotechnology along with BIRAC has been at the forefront in the fight against the pandemic.

Since its inception, BIRAC's mission has been to create an enabling innovation ecosystem that fosters the needs of young entrepreneurs and start-ups. Over these last 10 years, BIRAC has made a significant contribution towards development of the innovation ecosystem in biotech & related areas by supporting >1,200 start-ups and entrepreneurs through its various schemes. A pool of approximately 3,500 startup-strong biotech ecosystems across India has been created and >750 biotech products and technologies have been supported till now.

In the year 2021-22, under the COVID-19 Research Consortium, a number of projects have been implemented for development of vaccines, diagnostics, re-purposing of drugs and therapeutics.

During the FY 2021-22, the first National Call for E-YUVA Fellows and Innovation Fellows and 2 new calls- BIG 19 and BIG 20 were launched and 179 E-YUVA fellows and 18 Innovation Fellows have been selected from across the country. Further, 46 projects under SBIRI and 44 projects have been supported under BIPP alongwith 76 ongoing projects (including 19 new projects) involving 84 academic institutions, 18 companies, and 38 collaborations have been supported under PACE. Likewise, the SPARSH program has been successful in creating a vibrant biotech start-up culture in the country.

Global collaborations are crucial to the efficient and effective working of the organization. Therefore, BIRAC has initiated partnerships with several national and global partners to participate in various collaborations. BIRAC has supported the technology development and transfer program of bio-fortified and disease-resistance in bananas from Queensland University of Technology (QUT), Australia to be translated by the 5 Indian Research Institutes. Through all these efforts, we are building a stronger, more resilient organization whose entire ethos is understanding the innovation ecosystem and solving the most pressing needs of society. BIRAC has supported breakthrough medical innovations that will benefit patients as well as societies for decades to come. The advancements through various innovations will not only have dramatic implications for people and society but also help reshape the vast sectors of the world economy.

BIRAC's efforts in the last ten years have resulted in significant changes in the landscape of the Indian biotechnology sector through its talent, vision, and conviction to strengthen and reinvent the innovation ecosystem.

Dr. Alka Sharma
Scientist 'H'/Senior Adviser, DBT and
Managing Director, BIRAC

BOARD OF DIRECTORS

@Dr. Rajesh S Gokhale	:	Chairman
*Dr. Renu Swarup	:	Chairperson
**Dr. Alka Sharma	:	Managing Director
***Ms. Anju Bhalla	:	Managing Director
Dr. Subhra Ranjan Chakrabarti	:	Director (Operations) appointed on the post w.e.f 14th December 2021
FCA Ms. Nidhi Shrivastava	:	Director (Finance) appointed on the post w.e.f 15th December 2021
Government Nominee Director		
# Shri Vishvajit Sahay	:	Government Nominee Director

@ Was Appointed as Chairman w.e.f November, 1, 2021
****Held position of Chairperson till October, 31, 2021***
**** *Was appointed as Managing Director on additional charge w.e.f. October 10, 2021***
******Held the position of Managing Director on additional charge till October 9, 2021***
 # Was appointed as Government Nominee Director w.e.f. December 24, 2020

CHAIRMAN

Dr. Rajesh S. Gokhale
Secretary, Department of Biotechnology
Ministry of Science & Technology, Government of India &
Chairman, BIRAC

Prof. Rajesh S. Gokhale is the Secretary at Department of Biotechnology in the Ministry of Science & Technology, Government of India. He is presently on deputation from Indian Institute of Science Education & Research (IISER) Pune. Prior to this, he was at National Institute of Immunology (NII) and was also Director of CSIR-Institute of Genomics and Integrative Biology (CSIR-IGIB) for seven-and-half years. During his tenure he established the South Campus of CSIR-IGIB, where he led interdisciplinary initiatives in translational genomics research programs focused in delineating a variety of complex diseases.

Dr. Gokhale is trained as a chemical biologist from Indian Institute of Science (IISc), Bangalore and Stanford University, USA. His significant research contributions are in discovering novel metabolites and their pathways, which dictate pathophysiology of human diseases. Recent work from his laboratory have identified two novel metabolites from infectious pathogen Mycobacterium tuberculosis, that are crucial for initiating complex infection process. His group have also significantly contributed to the understanding of autoimmune disease Vitiligo. Studies from his group has elucidated complex interplay between metabolic reprogramming and immune system, to develop novel therapeutic strategies that can tackle the underlying causes, rather than just the symptoms.

Scientific work from his laboratory has been published in prestigious journals like Nature, Nature Chemical Biology, Molecular Cell, The Proceedings of the National Academy of Sciences etc. He has mentored more than 200 students and about 25 students have completed PhD thesis from his group.

Dr Gokhale co-founded Vyome Biosciences Pvt. Ltd. (VYOME) in 2010, a biopharmaceutical company developing best in class drugs for dermatology. This company is presently completing Phase IIb clinical trial for drug-resistant acne and has launched OTC products in the market. Dr. Gokhale was a Wellcome Trust Senior Research Fellow, UK and an International HHMI Fellow, USA. He is recipient of several awards, including Infosys Prize, Shanti Swarup Bhatnagar Prize, National Bioscience Award, J C Bose National Fellowship and IIT Bombay Distinguished Alumni Award. He is also Fellow of all the three Indian National Science Academies.

MANAGING DIRECTOR

Dr. Alka Sharma
Sr. Advisor, Department of Biotechnology
Ministry of Science & Technology, Government of India
Managing Director, BIRAC

Dr. Alka Sharma is currently Scientist 'H'/Senior Adviser in the Department of Biotechnology (DBT), Ministry of Science & Technology, Government of India. Currently, she is also the Managing Director of Biotechnology Industry Research Assistance Council (a PSU of DBT). She is dealing with research and policy issues in the emerging areas of biotechnology. She has made significant contributions in med-tech innovation with national and international partnerships; early and late translational research on various domain specific areas of biotechnology.

She has been instrumental in promoting and supporting public-private partnership across the country and also for commercialization of indigenous and affordable technologies for a large number of patients in urban/rural settings. Her efforts have resulted in creation of several biotech start-ups; development of functional biomedical device prototypes; transfer of technologies; creation of a pool of med- tech innovators in the country. She is actively involved in formulating legislation in Biotech sector and headed the Biosafety Regulation Division including RCGM in DBT. She is the Coordinator for Management of COVID-19 related activities in DBT/BIRAC.

She has received training at the Department of Microbiology and Infectious Diseases, NIH, USA for the management of extramural programmes. She has also received "CSIR Technology Award for Innovation" for her translational work.

GOVERNMENT NOMINEE DIRECTOR

Shri Vishvajit Sahay
Additional Secretary & Financial Adviser, Department of Science & Technology and
Government Nominee Director, BIRAC

Shri Vishvajit Sahay belongs to the 1990 batch of the Indian Defence Accounts Service. An alumnus of St. Stephen's College Delhi, he has diverse experience of working in the Government of India, having earlier served as Jt. Secretary in the department of Heavy Industry and Director in the Ministry of Information & Broadcasting. He has held additional charge of the posts of Chairman & Managing Director, Heavy Engineering Corporation Ranchi, a Schedule 'A' CPSE, CEO & Project Director of National Automotive Testing Research & Development Infrastructure Project (NATRIP) and Director in the Directorate of Film Festivals, Delhi. Within the Defence Accounts Department, he has experience of working in the Acquisitions Wing of the Ministry of Defence as Finance Manager (Land Systems), a cadre post in the MoD. He has also worked in several field and Headquarters Organizations of the Defence Accounts Department with experience of closely working with the MOD, Army and Ordnance Factories. He is presently working as Additional Secretary and Financial Advisor in the Department of Science & Technology with additional charge of the Department of Biotechnology and Ministry of Earth Sciences.

DIRECTOR OPERATIONS

Dr. Subhra Ranjan Chakrabarti
Director (Operations), BIRAC

Dr. Subhra Ranjan Chakrabarti is the Director (Operations) of Biotechnology Industry Research Assistance Council (BIRAC), Department of Biotechnology, Government of India. Prior to this, he was the Associate Vice President and Manufacturing Technology Leader for South for Global Program with Sanofi Healthcare India Private Limited (Previously Shantha Biotechnics), Hyderabad. He has eight years of research experience in the academic environment and concurrent twenty years in a leading Biotechnology Company in the area of vaccines, Monoclonal Antibodies, Recombinant therapeutics, and cancer research. During this period, he has contributed significantly in all the areas of the product value chain. Dr. Chakrabarti also lead several successful vaccine manufacturing technology transfers and validations. He obtained his PhD in Biophysics and Molecular Biology from University of Calcutta. He completed his post-doctoral research at the Cardinal Bernardin Cancer Center, LUMC, Illinois, USA. He has several publications to his credit.

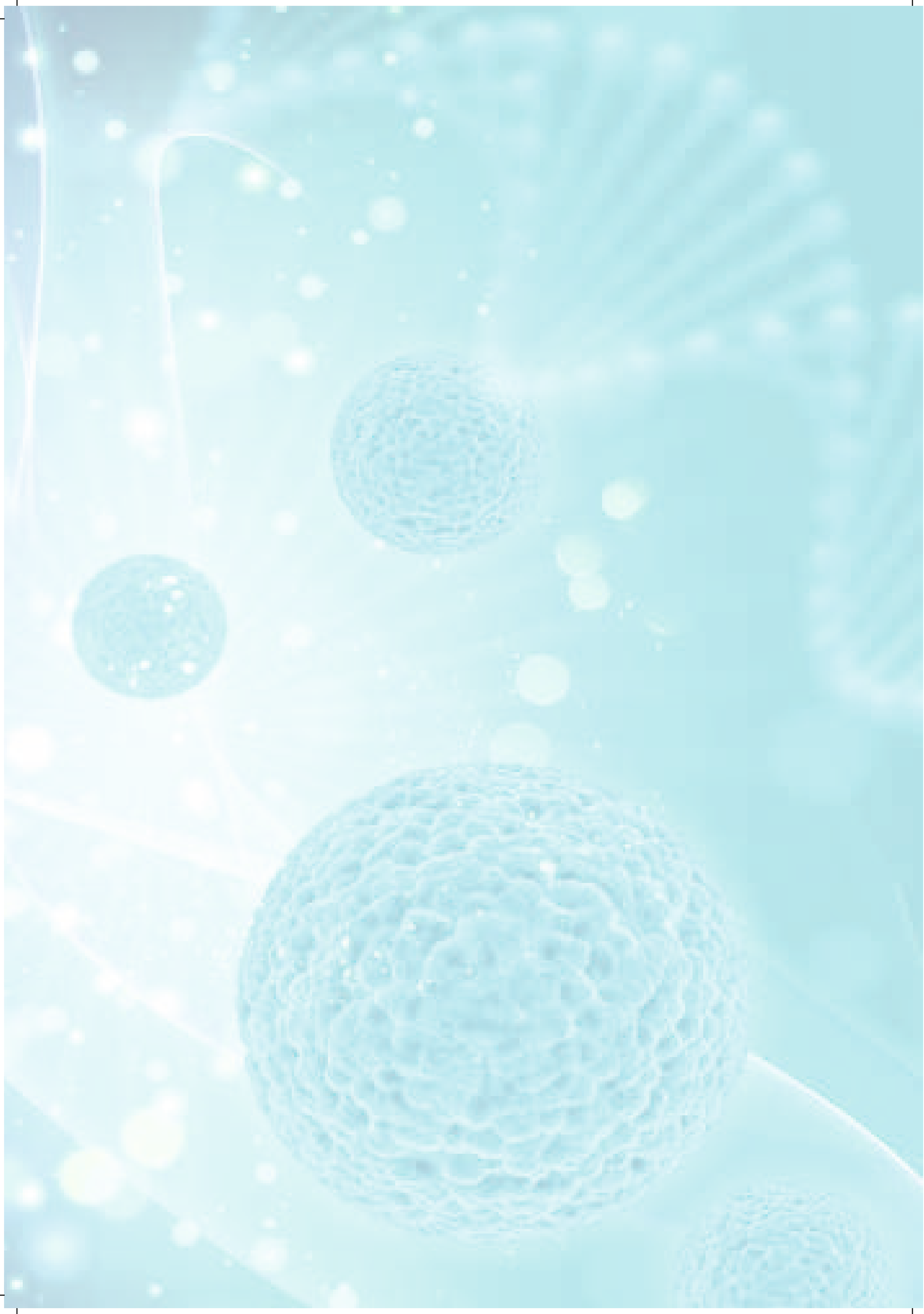
DIRECTOR FINANCE

FCA Ms. Nidhi Shrivastava
Director Finance, BIRAC

FCA Ms. Nidhi Shrivastava is a Fellow member of The Institute of Chartered Accountants of India and holds a Bachelor's degree in Law from Delhi University. She has also graduated in Environmental Sciences from Ramjas College, North Campus, Delhi University along with certification in "Risk Mitigation through Forensic document examination" from LNJN, Ministry of Home Affairs. As an astute professional, FCA Ms. Nidhi Shrivastava has over 20 years of diverse experience in various aspects of Finance & Accounts with thematic expertise in Financial Planning, Budgeting, Taxation, Audit, banking a Treasury, Asset Liability Management and Fund Management etc. FCA Ms. Nidhi Shrivastava has played an instrumental role at several noteworthy companies which include NTC Ltd., NAFED, Deloitte and Ernst & Young.

CORPORATE INFORMATION

REGISTERED OFFICE	:	1st Floor, MTNL Building, 9, CGO Complex, Lodhi Road, New Delhi – 110003 CIN: U73100DL2012NPL233152 **Website:** www.birac.nic.in **Email:** birac.dbt@nic.in **Tel:** +91-11-24389600 **Fax:** +91-11-24389611 **Twitter handle:** @BIRAC_2012
STATUTORY AUDITORS	:	**LUNAWAT & Co.** Chartered Accountants 109, Magnum House-I, Karampura Complex, New Delhi – 110015 **Tel:** 01145581264 **Email:** ca@lunawat.com
BANKERS	:	**Union Bank of India** Block 11, Ground Floor, CGO Complex, Lodhi Road, New Delhi -110003.
	:	**STATE BANK OF INDIA** Ground Floor, Core 6, SCOPE Complex, Lodhi Road, New Delhi -110003.
	:	**HDFC Bank Ltd** A3 NDSE, South Ex Part 1 New Delhi-110049
	:	**Union Bank of India** MTNL Building, Opp. Gate No. 13 JLN Stadium, New Delhi- 110003
COMPANY SECRETARY	:	**Ms. Kavita Anandani**



Director's Report

DIRECTORS' REPORT

To the Members,

1. ABOUT BIRAC

Biotechnology Industry Research Assistance Council (BIRAC) is a not-for-profit Section 8 company incorporated under the Companies Act, 1956 and a Schedule B, Public Sector Enterprise, set up by Department of Biotechnology (DBT), Ministry of Science & Technology, Government of India as an interface agency to strengthen and empower the emerging biotech enterprise to undertake strategic research and innovation, addressing nationally relevant product development needs. BIRAC is at the industry-academia interface and implements its mandate through a wide range of impact initiatives, be it providing access to risk capital through targeted funding, technology transfer, IP management and handholding schemes that help bring innovation excellence to the biotech firms and make them globally competitive. In its ten years of existence, BIRAC has initiated several schemes, networks and platforms that help to bridge the existing gaps in the industry-academia Innovation research and facilitate novel, high quality affordable product development through cutting edge technologies. BIRAC has initiated partnerships with several national and global partners to collaborate and deliver the salient features of its mandate.

2. OUR PHILOSOPHY & ACHIEVEMENTS

Biotech sector is complex, multi-disciplinary, knowledge intensive, prone to high attrition that inherently has long gestation. It requires patient risk-capital with access to high end infrastructure and cost intensive consumables and equipment. For Biotech sector to innovate and translate scientific knowledge into products and technologies, needed an enabler that could support and holistically nurture the ecosystem. BIRAC has emerged as a recognized enabling agency that has nurtured the biotech innovation ecosystem in the country. BIRAC's ability and commitment has demonstrated with evidence seeding of a globally competent biotech ecosystem. It has resulted in progression of hundreds of innovations into commercialized products and technologies to address the societal unmet needs. With support from the Department of Biotechnology, today India's Biotech Innovation ecosystem is recognized not only locally but globally as well.

BIRAC's vision has been to 'Stimulate, foster and enhance the strategic research and innovation capabilities of the Indian biotech industry, particularly start-ups and SMEs, for creation of affordable, globally competitive products addressing the unmet need.

Over the last 10 years, BIRAC has been instrumental in creating and expanding the base of the 'Innovation Pyramid'. It has successfully inculcated a culture of biotech entrepreneurship in the country. This ecosystem is growing year on year and requires handholding that is constantly evolving. Need assessment followed by actionable measures are required on a constant basis, to bridge the gap and expedite the growth. BIRAC, known for its agility and strategic initiatives, has revised existing schemes, operationalized a few new schemes, enhanced strategic capacity building and expanded the partnership network in order to bring new and value added opportunities for Biotech Start-ups, Entrepreneurs across the stages of product development cycle.

BIRAC has established a network of 75 specialized bio-incubation centres in 21 States/ UTs under BioNEST (Incubation) and E-YUVA (pre-incubation) schemes. Regular nationwide awareness programs, workshops, webinars have started resulting in engagement at tier 2, tier 3 cities, and aspirational districts. BIRAC's flagship scheme-Biotechnology Ignition Grant (BIG) receives close to 1500 applications per year. Out of the 10,000+ applications received from aspirants, more than 50% have come from non-metros & non-tier 1 cities; 38 aspirational districts have got integrated.

There are 5365 biotech startups in the country as of Dec 2021. BIRAC's BioNEST incubation centre network has been accessed by 1800+ incubatees. Considering this subset alone, more than 1200 IPs have

been filed and 700+ biotech products/ technologies reached the market. BIRAC's handholding and support has covered 377 academic institutes. Covid pandemic was litmus test of the strength of biotech innovation ecosystem in the country where Large and Medium scale industries along with Startups, Research Institutes, other stakeholders all came together to deliver 5 Covid Vaccines, 1800+ diagnostic kits for Covid testing, Solutions for step down ICUs, remote monitoring of patients, N95 Masks, Coveralls, Sanitizers, health and vital monitoring devices and tests for all including remote and low resource areas.

Path from discovery to identification of translational lead candidates is often contained in the research institutes and other knowledge creation centres. The journey for translation of leads into a product requires integration of diverse specialized teams and stakeholders. If you look at from an umbrella perspective, several thousands of such endeavors are progressing simultaneously in the ecosystem and therefore require a large number of diverse players to contribute with complementary roles and responsibilities. BIRAC has consciously expanded partnerships and alliances with Indian and overseas entities, stakeholders. Being a Government of India Enterprise, BIRAC has connected with Ministries, Departments, G2G, G2S, G2B, Industry, Academia, Investors, Legal, IP, Regulatory professionals, mentors, and experts. Benefits of such engagements become accessible to the entire ecosystem including individual entrepreneurs and startup companies.

Some partnerships provide funding while others open up access to networks and knowledge. Some of these partners have also collaborated for launch of new programs and initiatives with BIRAC. For Example, Grand Challenges India, National BioPharma Mission, Ind-CEPI, Mission Covid Suraksha, Swachh Bharat, Startup India, Make In India, Ayushman Bharat, Aatmanirbhar Bharat.

Platforms: Bringing together the biotech community stakeholders

BIRAC spear heads periodic national and international events that bring together stakeholders for showcasing India's growing strength in the sector, creating opportunities to connect, co-develop, co-create and co-scale. There is a great emphasis on peer to peer learning, identification of gaps and opportunities, networking, and showcasing. Global Bio India 2021; Biotech Startup Expo 2022 are two such marquee events hosted by BIRAC that have successfully created internationally recognized platforms.

We have created national level annual platforms such as Innovators Meet, Foundation Day for Startups and Entrepreneurs to bring together Technical Experts, Business Leaders, Innovators and Entrepreneurs on a common showcasing and interaction platform.

For operational purposes, BIRAC has a well established online portal called 3i portal that is deployed for application submission, screening and post grant monitoring. BIRAC 3i Portal provides a user friendly, bilingual and convenient solution for the effective management of various funding schemes. The 3i portal provides a single-window access to information and services that are electronically delivered to its user/s.

Biotech Innovation Showcase e-portal (https://biotechinnovations.com) features 750 products, technologies from BIRAC supported startups and companies that is accessible in public domain.

3. AUDIT COMMITTEE

BIRAC is a Schedule B CPSE under the Department of Biotechnology, Ministry of Science and Technology registered as a Section 8 Not-for-profit Company under the Companies Act, 2013. The constitution of the Audit Committee is a requirement under the Corporate Governance Guidelines issued by the Department of Public Enterprises (DPE). During the year, BIRAC has not been able to re-constitute an Audit Committee as the term of office of the Independent Directors was up to March 15, 2020, the appointment of new Non-official Directors is under process with the Department of Public Enterprises (DPE).

4. FINANCIAL STATEMENT

The financial statement is made on accrual method of accounting under the historical cost convention, in accordance with the accounting standards issued by the Institute of Chartered Accountants of India.

5. ANNUAL RETURN

Pursuant to Section 92(3) read with Section 134(3)(a) of the Act, the Annual Return as on March 31, 2022 is available on the Company's website on www.birac.nic.in (web link of BIRAC website).

6. NUMBER OF MEETINGS OF THE BOARD

The Board met 6 (Six) times during the financial year, the details of which are given in the Corporate Governance Report, which forms a part of the Annual Report. The intervening gap between any two meetings was as prescribed under the Companies Act, 2013 and as per relaxation given by MCA during the pandemic times.

7. PARTICULARS OF CONTRACTS OR ARRANGEMENTS MADE WITH RELATED PARTIES

BIRAC has not entered into any contracts or arrangements with related parties as per the provisions of Section 188(1) of the Companies Act, 2013.

8. RTI

BIRAC follows all the necessary procedures and processes in accordance with the Right to Information Act, 2005, as amended from time to time and Government Guidelines. It has appointed a Central Public Information Officer (CPIO), Deemed Public Information Officer (DPIO), Transparency Officer and an Appellate Authority. The details are available on its website (https://www.birac.nic.in).

9. RISK MANAGEMENT POLICY

BIRAC has a Risk Management Policy in place approved by the Board. The mandate of BIRAC is to nurture innovation by mentoring and funding high risk, highly innovative projects by itself or with multiple partners throughout the innovation value chain, namely, early stage innovation research, product development, product validation and commercialization. BIRAC, being a Government organization, the need for Risk Management is reflected in its commitment to ensure transparency and public accountability of its partnerships, activities and schemes. The schemes, activities, workshops and partnerships are monitored by Standard applications, formats, MoUs and funding agreement which have inbuilt controls and accountability mechanisms at every stage.

There is a proper technical evaluation of projects by a Committee of experts and an in-house legal drafting and vetting process, financial due diligence and screening of projects is undertaken, internal controls and audit protocols are in place with the Comptroller & Auditor General of India (C&AG) conducting supplementary audit.

Risk Management monitoring process in the organization is based on compliance reporting in the Risk calendar which is circulated to all the Department Heads with comprehensive parameters drawn from the Risk Register for managing schemes, activities and providing funding support. The Board ensures the integration and alignment of the risk management system with the corporate and operational objectives and also ascertains that risk management is undertaken as a part of normal business practice and not as a separate task at set times

10. DISCLOSURE UNDER THE SEXUAL HARASSMENT OF WOMEN AT WORKPLACE (PREVENTION, PROHIBITION AND REDRESSAL) ACT, 2013

BIRAC has in place an Internal Complaints Committee under the Prevention of Sexual Harassment of Women at the Workplace (Prevention, Prohibition and Redressal) Act, 2013 and the rules notified thereunder with the terms of reference as required under the CSS (Conduct) Rules and the Guidelines laid down by the Hon'ble Supreme Court in Vishaka and others vs. State of Rajasthan. The mandate of the Internal Complaints Committee is to redress the complaints, if any, received regarding sexual harassment as defined in the said Act.

All employees of BIRAC including regular employees, contractual, part time, daily wage earners, either employed directly or through an agent or contractor, whether for remuneration or not, trainees, apprentices, those working on a voluntary basis, directors and experts on various committees are covered under this policy.

The organization has not received any grievances under this Act, during the financial year 2021-22. During the year 2021-22, a workshop was conducted on "Gender Sensitization & Prevention of Sexual Harassment at Workplace" to sensitise the employees on Gender issues and educate them on the various aspects of the Act.

11. PROCUREMENT FROM MICRO AND SMALL ENTERPRISES (MSES)

The Total annual procurement for financial year 2021-22 was Rs. 2,48,03,590/-, out of which the procurement from MSEs was Rs. 2,18,76,727 amounting to 88.20% of the total procurement and the procurement from MSEs owned by Women Entrepreneurs was Nil amounting to Nil of the total procurement from MSEs.

12. DIRECTORS RESPONSIBILITY STATEMENT

In accordance with the provisions of Section 134(5) of the Companies Act, 2013, the Directors' state that:

- in the preparation of the annual accounts, the applicable accounting standards had been followed

  along with proper explanation relating to material departures;
- the directors had selected such accounting policies and applied them consistently and made judgements and estimates that are reasonable and prudent so as to give a true and fair view of the state of affairs of the company at the end of the financial year and of the profit and loss of the company for that period;
- the directors had taken proper and sufficient care for the maintenance of adequate accounting records in accordance with the provisions of this Act or safeguarding the assets of the Company and for preventing and detecting fraud and other irregularities;
- the directors has prepared the annual accounts on a going concern basis; and
- the directors had devised proper systems to ensure compliance with the provisions of all applicable laws and that such systems were adequate and operating effectively.

13. CORPORATE GOVERNANCE

A separate report on Corporate Governance is annexed with this report.

14. AUDITORS' REPORT

M/s. Lunawat & Co., Chartered Accountants are the Statutory Auditors of the Company appointed by the Comptroller and Auditor General of India for the period under review (Financial year 2021-22). The Auditors' report and CAG report are appended to the financial statements and are self-explanatory and suitably explained in the various Notes to the accounts.

15. BANKERS

The Bankers of the organization are:

- Union Bank of India, Block 11, CGO Complex, Lodhi Road, New Delhi – 110003.
- State Bank of India, Core 6, SCOPE Complex, Lodhi Road, New Delhi – 110003
- HDFC Bank Ltd, A3 NDSE , South Ex Part 1, New Delhi- 110049
- Union Bank of India, MTNL Building, Opp. Gate No 13 JLN Stadium New Delhi – 110003.

16. ABOUT DIRECTORS

BIRAC is guided by a Board comprising of senior professionals, academicians, policy makers and eminent professionals from the industry. Dr. Rajesh S. Gokhale, Secretary, DBT is the Chairman of BIRAC w.e.f November 1, 2021. The tenure of Dr. Renu Swarup, Secretary, DBT as a Chairperson, BIRAC ended on October 31, 2021. Dr. Alka Sharma, Scientist H, DBT has been given additional charge as Managing Director, BIRAC from October 10, 2021. The tenure of Ms. Anju Bhalla, as Managing Director (additional charge), BIRAC ended on October, 9, 2021. Further, Shri Vishvajit Sahay, Additional Secretary & Financial Advisor, DBT was continue as Government Nominee Director on the Board of BIRAC w.e.f. December 24, 2020. Dr. Subhra Ranjan Chakrabarti was appointed as Director Operation w.e.f December 14, 2021 on the Board of BIRAC. FCA Ms. Nidhi Shrivastava was appointed as Director Finance w.e.f December 15, 2021 on the Board of BIRAC.

17. CONSERVATION OF ENERGY, TECHNOLOGY ABSORPTION AND FOREIGN EXCHANGE EARNINGS AND OUTGO

The information pertaining to conservation of energy, technology absorption, foreign exchange earnings and outgo as required under Section 134(3)(m) of the Companies Act, 2013 read with Rule 8(3) of the Companies (Accounts) Rules, 2014 is as follows:

A. Conservation of Energy

Disclosure regarding conservation of energy is not applicable to our Company.

B. Technology Absorption, Adoption and Innovation

Particulars required under Rule 8(3)(B) of the Companies (Accounts) Rules, 2014 have not been given since the company has no direct Research and Development activity. However, the main function of BIRAC is to facilitate and provide financial support for generation and translation of innovative ideas into biotech products/technologies, foster innovation in all places of research and to encourage diffusion of innovation through partners. The details are provided in the Management Discussion and Analysis Report.

C. Foreign Exchange Earnings & Outgo

The foreign exchange earnings and outgo during the year are given below:

Grant received in foreign exchange to the extent utilized (in Rs.)	19,87,91,430
Foreign Exchange outflow (in Rs.)	
A. Technology Transfer	2,317,858
B. Books, Journal and Database Subscriptions	3,758,620
C. Entrepreneurship Development	-
D. Advertisement/Publicity/Publication	-
E. Foreign Travel and Meetings	145,215
CIF Value of Import	-

18. Particulars of loans, guarantees or investments under Section 186

The details of Loans and investments as covered under the provisions of Section 186 of the Companies Act, 2013 are given in notes no. 6 and 7 of notes forming part of the Balance Sheet as on March 31, 2022.

19. Significant Orders Passed by Regulators or Courts or Tribunal

There are no significant material orders passed by the Regulators/Courts /Tribunals which would impact the going concern status of the Company and its future operations.

20. Frauds Reported by Auditors Under Section 143(12), other than those which are Reportable to the Central Government

The Statutory Auditors have not reported any incident of fraud to the Board of Directors of the Company.

21. Details of application made or any proceeding pending under the Insolvency and Bankruptcy Code, 2016 (31 of 2016) during the year alongwith their status as at the end of the financial year

Two cases are pending under the Insolvency and Bankruptcy Code, 2016 (31 of 2016) as on 31st March, 2022.Total amount outstanding from Abhay Cotex Private Limited is Rs. 5,17,82,338.77 and Hydrolina Biotech Private Limited is Rs. 5,98,17,975.98.

22. One-time Settlement and Valuation

Biotechnology Industry Research Assistance Council (BIRAC) is a not-for-profit Section 8, Schedule B, Central Public Sector Enterprise (CPSE), set up by Department of Biotechnology (DBT), Government of India has not taken any loan from Banks and Financial Institutions.

23. Corporate Social Responsibility under Section 135 of Companies Act, 2013

(a) CSR Contribution by BIRAC

The Board of BIRAC at its 45th Board Meeting held on February 24, 2021 approved the Corporate Social Responsibility Policy (CSR Policy). The CSR Policy of the BIRAC was formulated in line with the provisions of the Companies Act, 2013 read with the Companies (Corporate Social Responsibility) Rules, 2014 and 'DPE Guidelines'.

Further, as per Companies (Amendment) Act, 2020 (applicable w.e.f. 22nd January, 2021), if the amount to be spent by a company does not exceed fifty lakh rupees, the requirement for constitution of the CSR

Committee shall not be applicable and the functions of such Committee provided under Section 135 shall be discharged by the Board of Directors of the company.

Hence, as per the above-mentioned provision, the Board in its 49th Board Meeting held on November, 30, 2021 has approved the budgetary allocation of Rs. 10,80,794/- being 2% of the net surplus/profit made during three immediately preceding financial years for CSR activities During financial year 2021-22, the Board of Directors authorised the Managing Director to examine the proposals as Chairperson of the CSR Internal Committee. Further, the CSR Committee members deliberated and approved that the CSR Fund for the Financial Year 2021-22 of Rs 10,80,794 (Rupees Ten Lakh Eighty Thousand Seven Hundred Ninety-Four only) be deployed to Swachh Bharat Kosh which is one of the listed activities specified in Schedule VII (i) of Companies Act, 2013.

A detailed report on CSR activities as per the provisions of the Companies Act, 2013 is available at Annexure-1 to this report.

The CSR policy of the Company has been provided on the Company's website at **https://www.birac.nic.in.**

(b) To take note of CSR funding first time received by BIRAC

BIRAC has registered itself as an implementing agency under the Companies Act 2013 and rules made thereunder vide filling the Form CSR-1 to the Ministry of Corporate Affairs (MCA). The CSR registration number is CSR00025388.

BIRAC can undertake CSR activities as permitted by its Memorandum of Association and for activities as specified under Schedule-VII 9(a) of the Companies Act, 2013.

"9(a) Contribution to incubators or research and development projects in the field of science, technology, engineering and medicine, funded by the Central Government or State Government or Public Sector Undertaking or any agency of the Central Government or State Government."

BIRAC being a Section 8 company, the Board in its 40th Board Meeting held on 12th February, 2020 has approved accepting CSR fund for furthering the mandate of BIRAC for setting up Incubation centers and innovation networks in the country.

For the year ended on 31st March 2022, BIRAC has received the CSR funds of Rs. 26.00 lakhs (Twenty-Six Lakhs only) each from Stryker India Private Limited and Stryker Global Technology Center Private Limited for ongoing project. The Company has transferred the funds into unspent CSR accounts which would be utilised during the financial year for ongoing project, against which utilisation certificate is pending as on 31.03.2022.

ACKNOWLEDGMENT

The Directors wish to place on record their appreciation for the valuable guidance and co-operation extended by the Auditors, Banks and various Government agencies. The Directors also wish to place on record their appreciation for the sincere efforts put in by the executives and staff of the Company.

For and on behalf of Board

Sd/-

Dr. Alka Sharma
(Managing Director)

Sd/-

FCA Ms. Nidhi Shrivastava
(Director- Finance)

Date: 24th November, 2022
Place: New Delhi

Management Discussion & Analysis

MANAGEMENT DISCUSSION AND ANALYSIS REPORT

(Forming Part of the Directors Report for 2021-22)

INDUSTRIAL STRUCTURE AND DEVELOPMENT

"Aatmanirbhar Bharat" and "India as Innovation Hub for the World"-clarion calls from Hon'ble Prime Minister, reflect potential of the growing Biotech Innovation ecosystem in the country. At the same time it instills confidence to face challenges and take up new targets for delivery. India has rapidly moved up to become the 3rd largest startup nation in the world. Year 2021-22 saw induction of 44 new unicorns in the list of 100 (end of 2021). The total number has increased to 107 now. Health & Wellness, and Services space in the biotech sector has started seeing the emergence of unicorns-Innovaccer, Prystine Care, Curefit, Pharmeasy. With Covid highlighting the inadequacies of the fragile healthcare infrastructure, the Digital Healthtech and Deep-tech startups are poised to grow as we move ahead. Covid also highlighted that it is important to consider One health i.e., human, animals & environment management, not limited to the mankind alone.

Likewise, India's commitment of achieving carbon net zero by 2070 would drive the innovations in new areas, such as, green solutions for manufacturing processes, bio-polymers, clean energy, waste to value and circular bioeconomy. The ban on single use plastics would push finding of alternate biodegradable materials, bio-polymers reflecting long term policy commitment and vision for the future India. Early success in Ethanol blending program as seen in achievement of 10% blending milestone in June 2021 ahead of schedule, has led to the advancement of the 20% blending target to 2025-26, from the earlier target of 2030. This is a critical policy push for the Bio-fuel subsector.

India's ranking has improved in the Global Innovation Index (GII) 2022 to 40th place, up from 46th in 2021 & 48th position in the previous year's ranking.

India's bioeconomy is expected to reach $150 billion by 2025 and through multiplier cascading effect, expected to contribute in meeting the national target of $5 trillion economy by 2025.

According to the "Indian Bioeconomy Report" published by ABLE and BIRAC in July 2022, India's Bioeconomy grew to 80.1 billion USD for calendar year 2021 up from $70.2 billion in 2020. India registered 14.1% growth last year in Bioeconomy despite covid challenges leading to widespread lockdowns, breakdown of logistics services and losses seen in business, jobs, and health. It is noteworthy that economic growth in several other sectors during covid period saw either a stunted or negative growth. This further justifies the growth potential of the Biotech – the sunrise sector for India.

While 2020 saw the introduction of Covid-19 crisis, the second wave in 2021 brought in the heightened challenge with spread of delta and omega mutants. In response, the phenomenal strength and confidence of Indian Biotech Industry in the Vaccines and Diagnostics also peaked making 2021-22 as a unique year of India's Biotech Industry prowess. Indigenous Covid Vaccines-developed, tested and manufactured in India, helped the nation to manage the pandemic and achieve 1.6 Bn immunization doses. The industry ramped up its vaccine capabilities, and scaled up Covid-19 testing. BioPharma industry invested to upscale vaccine doses manufacturing capacities by 3 times compared to 2020, consolidating the collective output capacity to 5.5 Bn doses. Similarly, Covid testing capacities were increased from 25 Million tests in 2020 to 2000 Million tests in 2021. There are more than 1800 RT-PCR diagnostics test kits registered in India dramatically reducing the costs. Made In India - Affordable and Accessible Vaccines, Drugs and diagnostics helped in extending the health care covering pan-India. India could also extend the friendly hand to more than 50 countries and provided Covid vaccines and diagnostics. This indigenous self-reliance or Aatmanirbharta obviated the need of importing vaccines, diagnostics and thus, saved us from an imminent import cost burden. Ironically, Covid added $14.56 Bn in 2021 to India's Bioeconomy compared to $5.5 Bn in 2020.

India's initiatives to deal with Covid-19 succeeded due to the collective strength of biotech innovation ecosystem in the country, that is powered by continuous efforts of the Central and State Government, Industry, Academia, Incubators and Startups, Regulators, Investors, philanthropic organizations, others. BIRAC played an enabling

role to integrate these stakeholders in public private partnership mode. This has helped to create a conducive framework for capacity building and nurturing of the biotech innovation ecosystem. For example, Mission Covid Suraksha supported 12-14 vaccine and therapeutic projects from research to clinical development; establishment of BSL3 facilities; development of immunogenicity testing assays etc. BIRAC's earlier initiatives of capacity enhancement through National BioPharma Mission such as development of Clinical Trial network complemented these developments.

The framework of selection, monitoring and handholding of grantees for their project progression were also redefined and improved by migrating to online/hybrid meetings mode integrating national and international experts. BIRAC ensured timely launch of relevant initiatives like Covid Research Consortium, Fast Track Review and COVID Suraksha to facilitate start-ups and biotech companies.

We witnessed growth in number of biotech startups in the country. About 1000 biotech startups were added in 2021, taking the total count to 5365. The biotech startup numbers are likely to increase further to about 10,000 by 2025.

The pandemic has provided the country with an opportunity to play the lead role in the global biotech ecosystem. India is on a new path -- from being the pharmacy of the world to become the hub of cutting-edge innovations and research. Going forward, this first hand experience generated in developing novel vaccines and diagnostics would help the industry to innovate and develop affordable, accessible and scalable solutions for other communicable and non-communicable diseases.

Government's role in harnessing the biotechnology potential of the country have been critical for strengthening the roots of innovations and research & development. BIRAC was set up as a dedicated agency by the Department of Biotechnology for spurring and promoting of innovation and entrepreneurship in the Biotech sector. During the last 10 years of its existence, BIRAC has made significant contribution in developing and strengthening biotech ecosystem in the country through various schemes and programmes such as BIG, BIPP, SBIRI, PACE, BioNEST, SITARE, eYUVA, SIIP etc. Provisions have also been created for regulatory and IP support such as FIRST Hub, RIFC and BIRAC PATH. Besides various funding programs that have spurred incorporation of new start-ups in the field of biotechnology, BIRAC has made serious efforts to make early stage private capital/ seed money accessible to the start-ups through equity schemes like SEED, LEAP, AcE, BioAngels. BIRAC has forged various national and international partnerships to facilitate networking and stakeholder connects. Through BIRAC's BioNEST programme, 64 bioincubation facilities have been established across the country. To cater to the growing number of biotech startups, such common access infrastructure is a basic requirement. Startups who have progressed to technology readiness level of 5 and above require advanced infrastructural facilities and additional funds to progress to pilot stage and early stage manufacturing. This is a gap in the ecosystem at present. Technology Clusters providing advanced infrastructural access are required to cater to the pipeline of startup candidates emerging out of the incubation centre network.

BIRAC has been instrumental in connecting its beneficiaries with venture capitalists, biotech/healthcare accelerators and early stage funders. This fiscal year saw encouraging examples of follow on funding raised by biotech startups. Nearly INR 2000 Cr have been raised cumulatively by 30 startups. Startups seeded about 5-10 years ago have started to receive recognition and registered a stronger presence in the public media this year. For instance, GPS renewables set up INR 120 Cr plant in Indore; String Bio raised $20 Mn USD investments; Huwel Technologies registered INR 80 Cr turnover compared to INR 40 lakhs 3 years ago; Sanfe has turned into INR 100 Cr+ turnover company from a <INR 5 Cr valuation company 3 years ago; ImmunoACT raised INR 56 Cr private investments and so on.

For awareness and networking, it is important to showcase. Two major events, namely Global Bio India in March 2021 and Biotech Startup Expo in June 2022 were organized by BIRAC recently. This is to showcase the country's strength and highlight the impact of biotechnology sector in addressing the unmet needs with globally competitive products/ technologies.

Since inception, BIRAC has launched several programmes and initiatives in close alignment with Government of India's national missions such as Start-up India, Make in India, Swachh Bharat, Swasth Bharat, Ayushman Bharat, Atmanirbhar Bharat etc. The resulting innovations can potentially contribute towards the economic and scientific development of the nation, making it Aatmanirbhar. BIRAC has to step up efforts to extend the reach to tier 2, tier 3 cities, and aspirational districts. This would address the unmet needs through technology adoption at the last mile and promote sustained development.

STRENGTHS AND WEAKNESSES

BIRAC's enabling role for nurturing the biotech innovation ecosystem in the country is well recognized. BIRAC has created a vibrant Startup ecosystem in the country. In last 10 years, from 50 startups, the number has risen to 5365 biotech startups. The network of biotech specialized incubation centres has seen corresponding growth from 4 to 74. Especially with respect to Startup India mission, BIRAC's operational models are being referred by other enabling agencies, departments and ministries. A typical Startup beneficiary of BIRAC's ecosystem is considered as 'credible' in the ecosystem when it comes to trusting the technology being offered, evaluation for follow on funding investments, awards and recognition.

BIRAC is approached as a knowledge partner both within the country and international bodies. Most recent example is Foreign, Commonwealth Development Office (FCDO), Govt of UK; Multinational companies like Takeda, Stryker etc. BIRAC has inspired origin of new schemes such as Startup India Seed fund scheme by DPIIT/ Startup India. Make In India Cell at BIRAC provides handholding at the State level. More than 22 states now have a dedicated Biotech State Policy. BIRAC has actively contributed to Make in India Biotech Strategy and Start up India. All such national missions mention BIRAC as the go-to partner in the realm of biotechnology. BIRAC's vision and mission directly aligns with the National Biotechnology Development Strategy (NBDS), formulated by DBT. There is a strong focus on strengthening partnership with public and private entities sharing common goals including Niti Aayog, CDSCO, Atal Innovation Mission, MeitY, ICMR, NASSCOM, Tata Trust, MNCs, World Bank, BMGF, Gates Foundation, TiE-Delhi NCR, etc.

BIRAC's programs have evolved based on continuous scoping for gap identification through ground level assessment and stakeholders feedback. Examples of new programs and initiatives launched based on this feedback cycle include JanCARE program for field validation; Assistive Technologies Quest; Innovation Challenge for Clean Cooking Solution; thematic i4 call to promote Synthetic Biology led solutions; launch of a dedicated e-portal (www.biotechinnovations.com) to showcase 750 biotech solutions; others. Similarly, the implementation processes, onboarding of new partners, mentors and experts also keep dynamically evolving.

Regulatory landscape is one of the key factors that would determine the future growth of Indian biotechnology sector. Aligning with government policy of Ease of Doing Business, BIRAC has been sharing inputs to regulatory agencies for building a transparent evidence based regulatory landscape in India in various fields including green solutions, biosimilars, stem cells, medical technology, clinical trials and bio-agri products.

Covid pandemic required diversion of BIRAC's resources on priority which was quintessential. This has however adversely affected the survival and progression of Startups, entrepreneurs pursing non-covid solutions.

While the capacities, infrastructure and the overall environment that facilitates entrepreneurship and innovation have improved significantly in the recent past, it is not adequate for the ecosystem growth & scaling. The growing ecosystem requires next level of enablement such as (a) Capacity building with high-end common access infrastructure facilities to propel Startups from pilot and reach manufacturing stage, (b) Larger funding and resources to scale the ecosystem, (c) induction of Industry for closer participation in driving the innovations, (d) Global ecosystem connect, (e) Private equity capital access to promote deep tech innovation etc. To undertake such critical additional tasks and deliver effectively, is challenging given the limitation of resources available to BIRAC (both funding ability and manpower). The urge and speed to deliver, both need to be in sync with the growing pace of Startups.

For future India, biotech innovation ecosystem needs to scale many folds in order to remain competitive and harness its full potential. The number of biotech start-ups are expected to grow 2x i.e., from 5000+ in 2021 to 10,000 by 2025. To enable and support scaling of ecosystem, BIRAC must also scale the network of Bioincubation centres, build a continuous pipeline of Entrepreneurs, Start-ups and expand provisions for deployment of innovative products in market. In order to stay effective and meaningful, BIRAC's funding resources need 5x scaling over next 5 years, and about 10x in 8-10 years to meet the expected outcome. While public funding agency i.e., parent institution (DBT) has been extending the possible support, BIRAC may need to complement additional funding availability from alternate extramural resources, CSR etc.

RISK AND GOVERNANCE

The biotechnology innovation pathway involves long gestation period. This exerts enormous pressure on start-ups that are attempting to build novel, high quality and affordable products in India. There is an inherent failure associated with the innovation cycle. Only a fraction (industry norm is about 10%) is expected to progress from one stage to the next. In order to enable successful translation, the number of attempts need to be increased based on simple principles of probability. Therefore, we need to consolidate and expand the pipeline of supported entrepreneurs and startups.

Appreciating ground realities of the realm is therefore important at all levels of administrative, bureaucratic and third party evaluation. This would instill confidence and promote decision making especially in case of failures, pragmatic case to case evaluation, handholding, and bring focus to direct the energies and resources for higher likelihood of success.

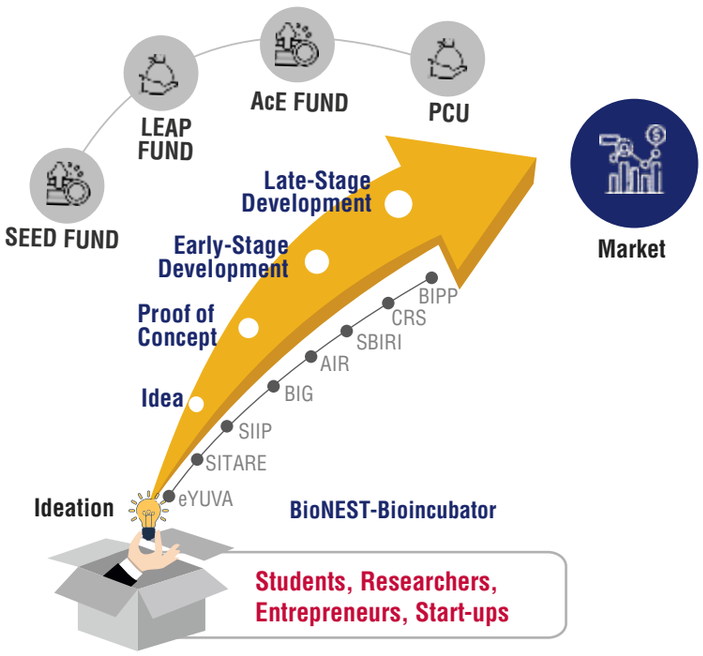
The startups seeded and supported by BIRAC 5-10 years ago, are now seeing public recognition while raising Series A, pre-series A money, successful deployment of their products/ technologies in the ecosystem. Such numbers are small but are increasing each year as we progress. For instance, this year the amount of follow on funding i.e., INR 2000+ Cr raised by Startups, is 3x higher compared to previous years.

One of the gaps in Indian biotech Start-up ecosystem is lack of participation of private equity – (i) Pre-series 'Angel Funding' in the range of INR 1 to 5 Cr, and (ii) Growth capital for potential Biotech start-ups at series A and above. This funding is crucial for start-ups to cross the valley of death. BIRAC in its limited capacity has initiated a Fund of Funds called Biotechnology Innovation Fund - AcE (Accelerating Entrepreneurs) to support up to INR 7 Cr/start-up. This initiative has been able to successfully mobilize a commitment of more than INR 349 Cr Private equity for biotech start-ups. In addition to this, "BioAngels" Platform operationalized recently, is also expected to mobilize Private Equity. Such a dedicated biotech investor network did not exist in the country. The platform is based on an open & transparent architecture which allows Angels, VCs to join for syndicate investments. Equity scheme (i.e., SEED, LEAP) indicators from last 3 years show that about 60-70% of supported Startups have been able to successfully raise Angels and pre-VC funds. Funds extended by BIRAC through equity fund partner incubators have catalyzed mobilization of 5-10x follow on funds, along with augmenting the progression of about 100 Startups to commercialization stage.

These are encouraging trends. Ground level experience from AcE, LEAP and SEED schemes indicates that such efforts can be expanded and scaled up. Though BIRAC's inherent strength is limited to handle equity assets by itself, we need to identify and create complementary channels, develop strengths and train human resources for undertaking it at scale besides infusing larger funds through Public and Private resources.

Covid has brought renewed recognition to India's biotech ecosystem. This is an opportunity for India to scale and go global. BIRAC is connected through regular partnerships and activities with several international partners. This is an area that requires strengthening too, laying out provisions and framing relevant processes. Going forward, participation of Innovations from India at the global level would become imperative for ecosystem competence and relevance.

BIRAC Schemes

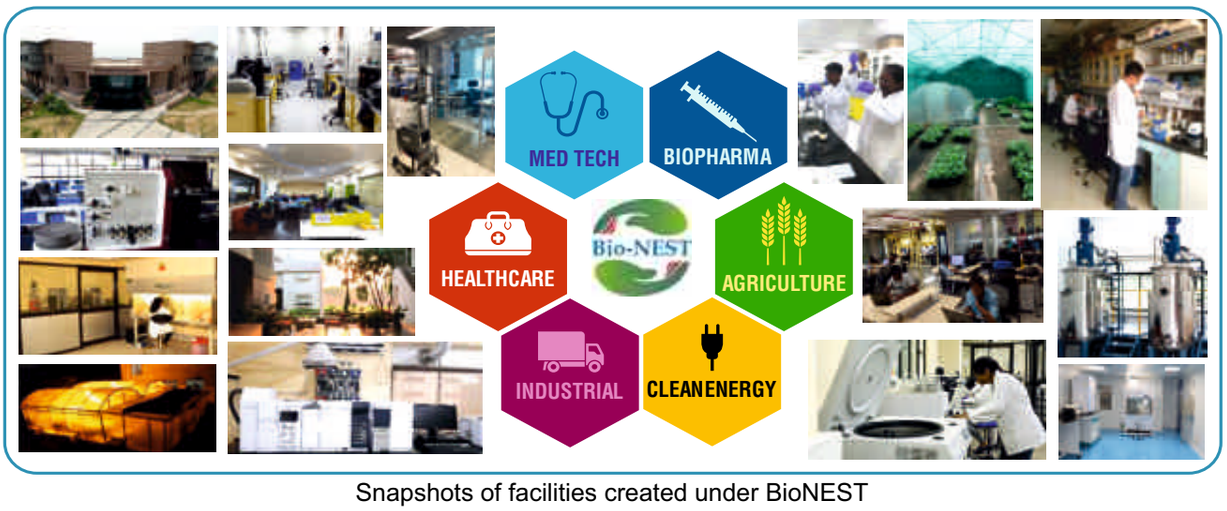


BIRAC support programs along the Product Development Cycle

BioNEST

BioNEST (Bioincubators Nurturing Entrepreneurship for Scaling Technologies) is BIRAC's flagship scheme that supports establishment of specialized bioincubation facilities across the country. BioNEST Bioincubation Centres provide:

- Shared incubation space to entrepreneurs and Startups
- Access to high end infrastructure
- Specialized and advanced equipment
- Business mentorship
- IP, legal and regulatory guidance
- Networking opportunities



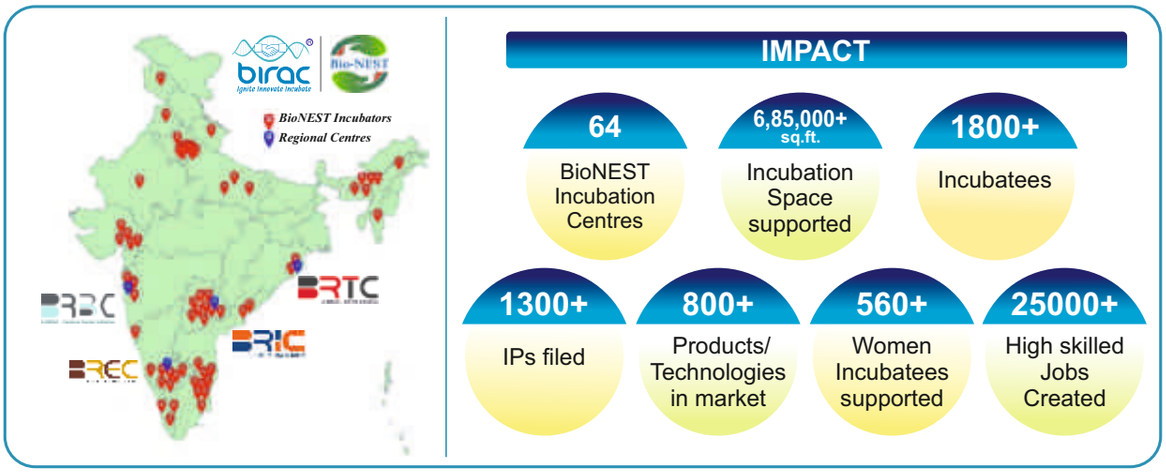
Snapshots of facilities created under BioNEST

Sustained Hand Holding through BioNEST incubation centers

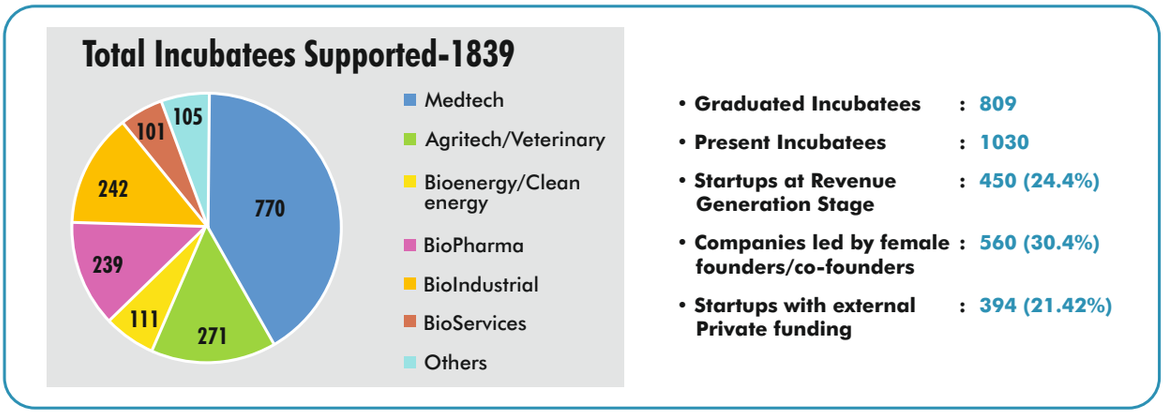
Over the past 10 years, BIRAC has created a vibrant network of bio-incubators spread across the country. These incubators are located within Universities, Research Institutes, Research Hospitals and also as stand-alone centres. BioNEST bioincubator network has grown to 64 Bioincubators catering to more than 1500+ biotech startups and entrepreneurs.

In the year 2021-22, 4 new bio-incubators were established under the BioNEST scheme, in addition to the support extended to existing 60 BioNEST incubators.

- A round table meeting of 60 Incubators in the presence of Secretary, DBT and MD, BIRAC was organized for networking and stakeholder consultation.
- Regional Cluster showcasing events were organized for the following clusters:
  - Tamil Nadu Cluster
  - North East & East Cluster
  - Karnataka Cluster
  - Delhi NCR Cluster
  - Northern Cluster
- BioNEST incubator network played a critical role during Covid pandemic by promoting and supporting new products/ technologies development by Startups. It continues to provide handholdings; investors connect for product deployment and fund raising by the startups.



Network of BioNEST Incubation centers across the country and its Impact



BioNEST Incubatee Status

E-YUVA

E-YUVA (Empowering Youth for Undertaking Value Added Innovation Translational Research) is an early-stage scheme to promote a culture of applied research and need-oriented (societal or industry) entrepreneurial innovation among young students and researchers. The scheme is meant for undergraduate, postgraduate and post-doctorate students. It provides funding support (through fellowship and research grants), technical and business mentoring, early exposure to bio-incubators, orientation to entrepreneurial culture etc. The scheme is implemented through pre-incubation centres called E-YUVA Centres (EYCs), housed within the University/ Institution setup. Mentoring & guidance support is provided through a designated Knowledge Partner-BIRAC's Bio-NEST Incubator, assigned with each EYC.

Categories of Fellows:

1. **E-yuva Fellows**
   - A team of 3-5 UG students (pursuing graduation)
   - The team is guided by a mentor
2. **Innovation Fellows**
   - Students who have completed post-graduation/PhD
   - Selected fellows work full-time from the EYC

During the FY 2021-22, First National Call for e-YUVA Fellows and Innovation Fellows was announced on 26th January, 2022 under which 179 e-YUVA Fellows and 18 Innovation Fellows have been selected from across the Country.

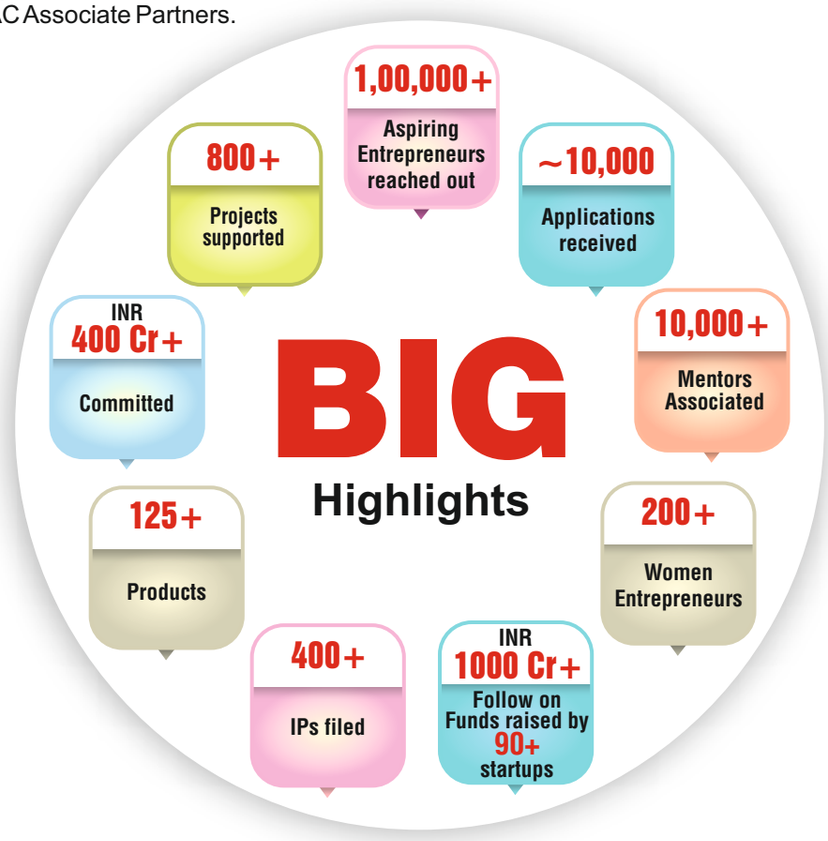
BIRAC's network of 10 E-YUVA Pre-Incubation centres along with their respective Knowledge Partners

Biotechnology Ignition Grant

Biotechnology Ignition Grant (BIG) is the flagship programme of BIRAC, which provides the right admixture of funding fuel and enabling support to young startups and individual entrepreneurs for incubation, team building, startup incorporation, equipment, operations, mentoring, training, etc. BIG scheme started in 2012, is one of the largest early-stage biotech funding programmes in India. Funding grant of up to INR 50 lakhs for a period of 18 months is provided for innovative ideas translation to proof-of-concept.

BIG
Creating Pipeline of Biotech Entrepreneurs

The BIG scheme is implemented through 8 BIG Partners which are BIRAC's mature BioNEST Bioincubators. These partners create awareness, provide thorough mentorship (technical, IP, business), handholding and networking support to the aspirants and grantees from pre-submission stage to completion of the project and even after. To expand the outreach and local mentoring in deeper pockets of the country especially Tier 2, Tier 3 cities and aspirational districts, 11 additional BioNEST Incubators have been engaged as BIRAC Associate Partners.



During the financial year 2021-22, two new calls, BIG 19 and BIG 20 were launched on 1st July 2021 and 1st January 2022 respectively. Out of 734 proposals received under BIG 19 call, 48 proposals were selected for BIG support. Under the 20th Call, 833 proposals have been received and 54 selected for BIG support.

BIG scheme's successful execution over the last 10 years has been able to promote and inculcate the culture of biotech entrepreneurship across the country. There are 800+ projects that have been supported through BIG so far out of ~10,000 applications received. About INR 400.00 crores have been committed by BIRAC thus far. BIG scheme has facilitated new startup creation, development of 125+ innovative products & technologies, filing of 400+ IPs, supported nearly 200 women entrepreneurs and generated more than 2000 high skilled workforce. Several BIG Grantees have received national & international recognitions and awards. It is also notable that 90+ BIG grantees have secured more than INR 1000 Crores as follow-on funds through private investors.

Representative Products developed with BIG support

BIG Partners

C-CAMP

FITT
Foundation For Innovation And Technology Transfer

VENTURE CENTER

IKP

KIIT-TBI

birac
Ignite Innovate Incubate

IIT Bombay
SINE
Business Incubator

naarm

Center for Agri-Innovation
a-IDEA

IIT KANPUR

STARTUP INCUBATION AND INNOVATION CENTRE IIT KANPUR

Associate Partners

IITM Bioincubator
Nurturing Entrepreneurs

BBB
BSC BioNEST Bio Incubator

BN-PU

Healthcare Technology Innovation Centre

riidl

VIT
VIT-Technology Business Incubator

ASPIRE-BioNEST

Ahmedabad University

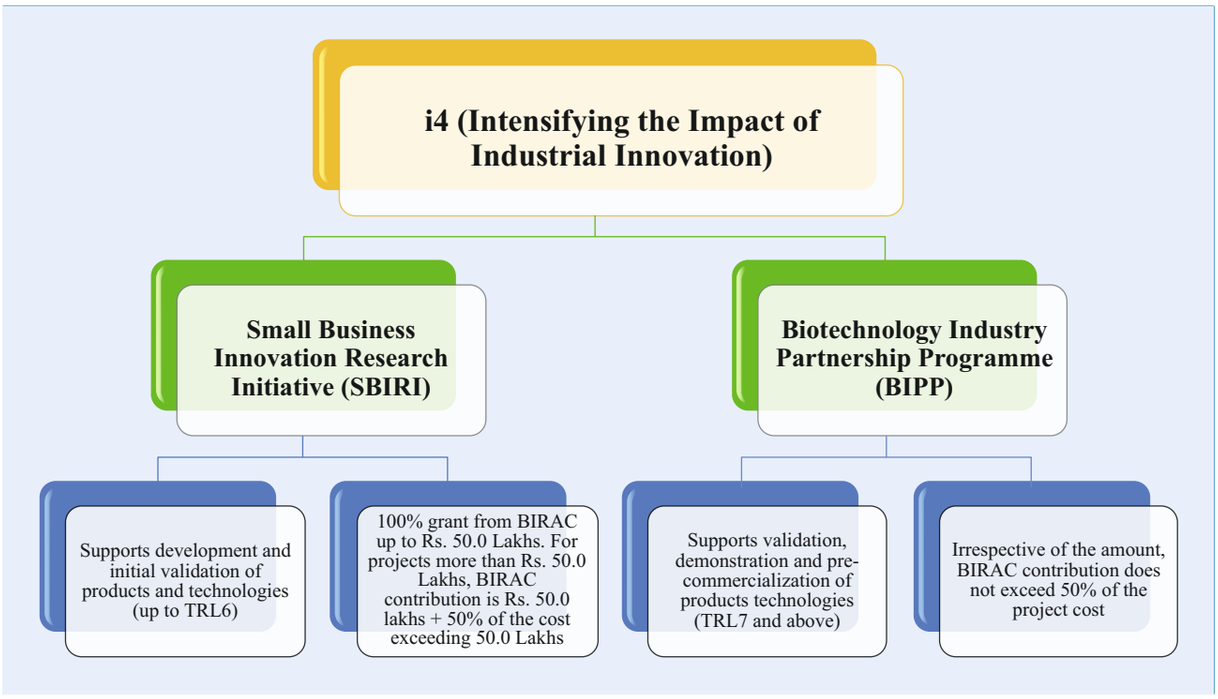
IKP EDEN

PSG
STEP

BioNEST
BIRAC

BANGALORE BIOINNOVATION CENTRE

Programmes



Intensifying the Impact of Industrial Innovation (i4)

The programme has been initiated to support biotechnological product/technology development by strengthening R&D capabilities of start-ups/companies/LLPs.

Proposals funded under i4 are categorized under the following thematic areas:

- Drugs (including Drug Delivery), Biosimilar and Stem Cells (including Regenerative Medicines) & Vaccines and Clinical Trials
- Devices and Diagnostics
- Energy, Environment and Secondary Agriculture
- Agriculture (including Aquaculture & Veterinary sciences)

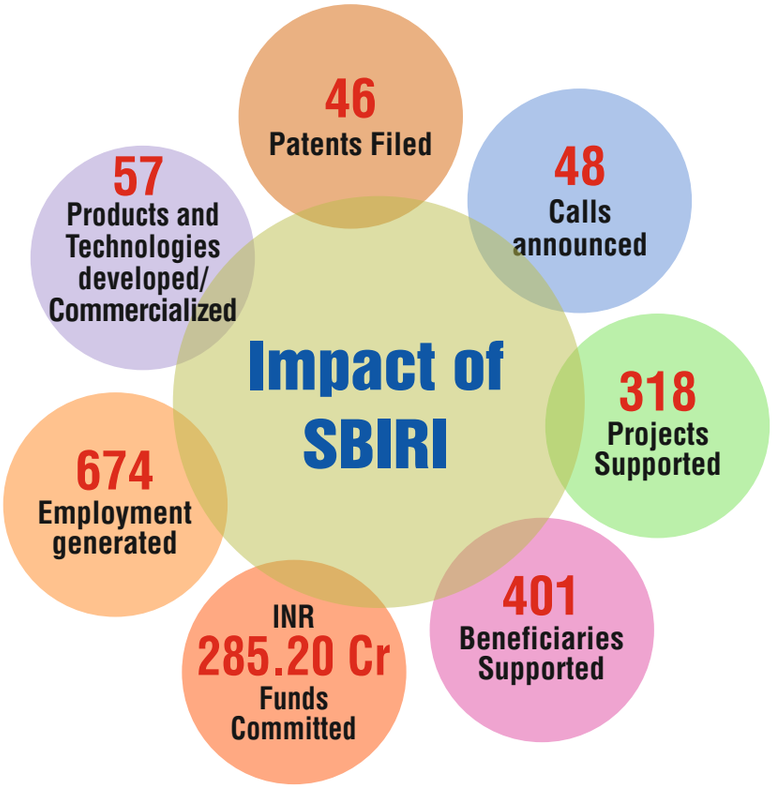
During the financial year 2021-22, two challenge calls and one regular call for proposals was announced under i4 (SBIRI and BIPP) and PACE (AIR and CRS). In order to align the BIRAC efforts to the Government initiatives, one challenge call (announced on 1st July, 2021) focussed on the Mission programmes launched by Government of India in the area of Healthcare, Energy, Environment and Secondary Agriculture and Agriculture, Veterinary Sciences and Aquaculture. To provide momentum to the Make in India initiative, the second challenge call focused on promoting development of indigenous products and technologies to reduce dependency on import, PAN Corona vaccine, post-COVID pulmonary rehabilitation and others.

SBIRI

Small Business Innovation Research Initiative (SBIRI) promotes and facilitates companies to take their established Proof of Concepts (PoC) towards early-stage validation, thus fulfilling a major gap in the product development cycle. The scheme has been instrumental in nurturing not only established companies, but also Start-ups and Small and medium Enterprises (SMEs) who are now availing this grant by submitting proposal directly under the scheme or after completing the PoC studies under Biotechnology Ignition Grant (BIG)/other schemes of BIRAC.

Since the inception of the scheme, 318 projects involving 258 companies and 55 academic institutions have been supported. Under 46th, 47th and 48th calls announced in the FY 2021-22, 189 proposals were received out of which 7 proposals have been recommended for funding support and 6 are under review.

During 2021-22, in all 46 projects were supported under the scheme. Ongoing projects under the various thematic areas were mentored and monitored by Project Monitoring Committee (PMC) through online evaluations or presentations before Technical Evaluation Committee.



Impact of SBIRI

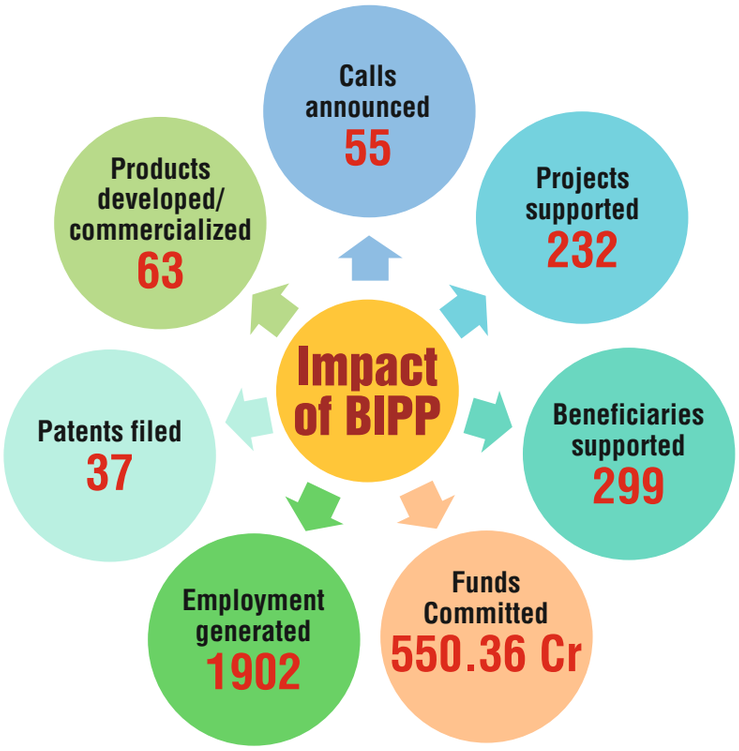
BIPP

The Biotechnology Industry Partnership Programme (BIPP), a Public-Private Partnership scheme, promotes innovative research for development of transformational technologies/products in the Biotech Sector. The Scheme serves as a launch pad for scaling and commercializing high risk innovations through cost sharing between BIRAC and the industry.

Since inception, 232 projects including 65 collaborative projects have been supported under the scheme. A total of 63 products/technologies have been developed till date. While some of these have already been commercialized, others are at the pre-commercialisation stage.

During 2021-22, a total of 44 projects, including 5 new ones were supported. 14 projects completed during this period. 8 projects achieved TRL 7-9 taking them closer to commercialization. Regular monitoring and mentoring of the projects was undertaken to ensure successful outcomes.

Three new calls (53rd, 54th and 55th) for proposals were announced during the year under which a total of 113 proposals were received, out of which 2 proposals have been recommended for support and 5 proposals are under review.



Impact of BIPP

PACE

Promoting Academic Research Conversion to Enterprise (PACE) supports academia to develop technology/product of societal/ national importance and its subsequent validation by an industrial partner.

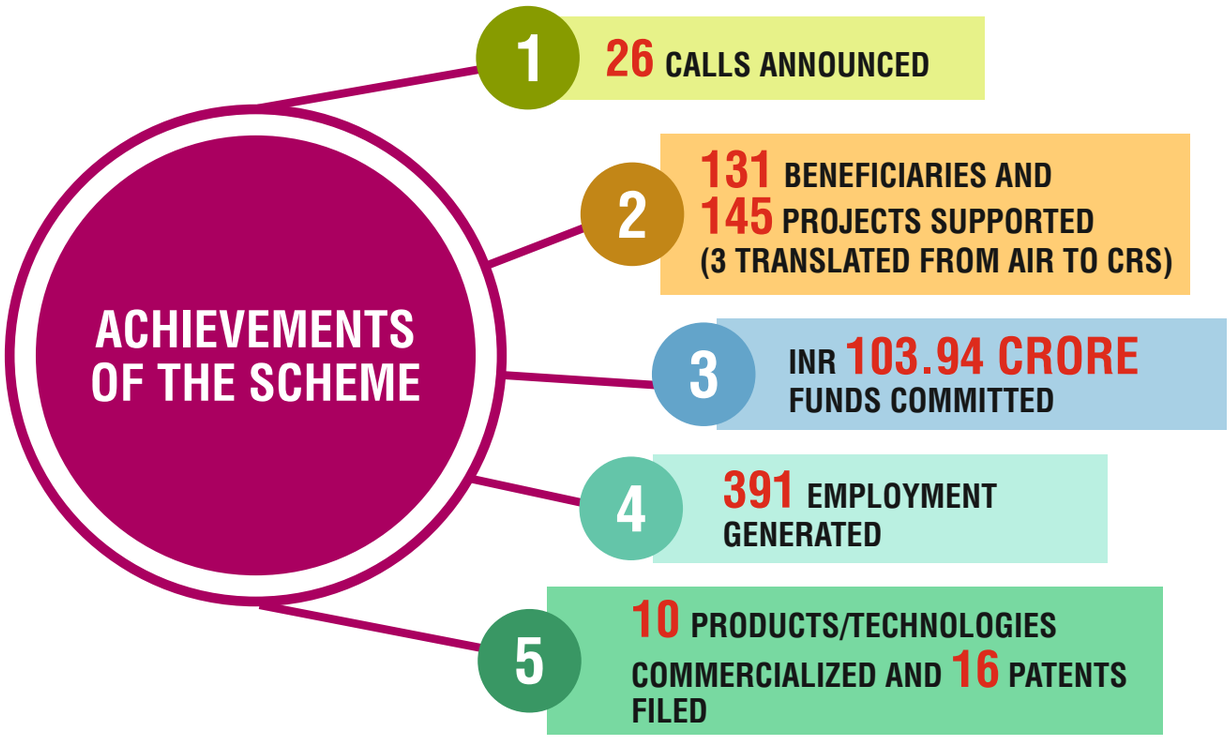
Salient features of the Scheme:

- Bridge Industry-Academia gap (Academia having an established lead engages the industry for validation)
- Funding (in form of grant) for both academic as well as industry partner
- Although the IP rights reside with the academia, the industry partner has the first right of refusal for commercial exploitation of the New IP

The Scheme has two components:

- **Academic Innovation Research (AIR):** Promotes development of Proof-of-concept (PoC) for a process/product by academia with or without the involvement of industry
- **Contract Research Scheme (CRS):** Enables validation of a process or prototype (developed by the academia) by an industry partner

Since Inception, 26 calls have been launched and 145 projects have been supported under the scheme. So far, 10 technologies/products have achieved TRL 7 and above and 16 IPs have been generated. More then 75% projects funded under AIR component of PACE have achieved TRL 3 so for.



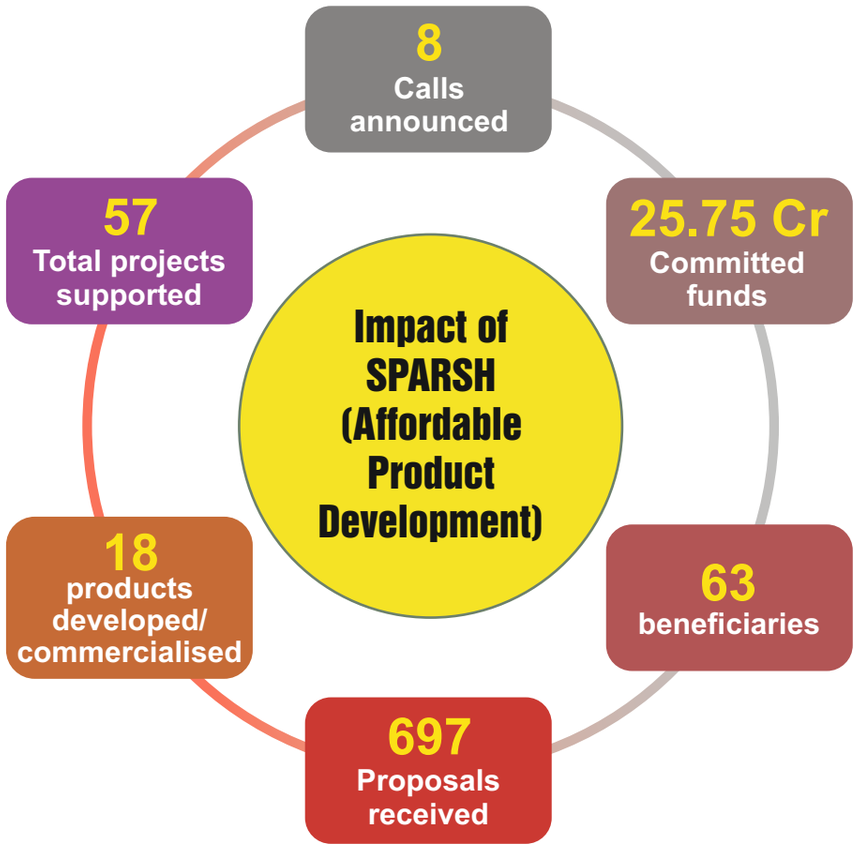
Impact of PACE

During FY 2021-22, 76 ongoing projects (including 19 new projects) involving 84 academic institutions, 18 companies and 38 collaborations were supported. During the year, three calls for proposals were announced. The 24th and 26th calls were Challenge Calls which targeted specific research areas. The 25th Call was a regular call targeting the major thematic research areas of BIRAC.

Under 24th-26th call, 7 proposals have been recommended for support and 8 proposals are under review. The ongoing projects were mentored and regularly monitored through online interactions/site visits and presentation to the Technical Expert Committee to ensure successful outcomes.

SPARSH

Social Innovation programme for Products Affordable & Relevant to Societal Health (SPARSH) is the Social Innovation programme of BIRAC aimed at promoting the development of innovative solutions to society's most pressing social problems through biotechnological approaches. Since its inception in 2013, the programme has been investing in high impact ideas and innovations that could address neglected unmet needs and challenges. So far 8 calls for affordable product development have been announced on varied themes such as Maternal & Child Health, Ageing & Health, Food & Nutrition, Soil and Plant Health, Waste to Value, Livestock Health and Improvement, New and Improved Agricultural Tools, Reducing Post-harvest losses and Combating Environmental Pollution. A total of 697 proposals were received of which 57 projects were supported. 18 products/prototypes/technologies have been developed along with generation of 5 new Intellectual Property (IP). 10 women entrepreneurs have been supported to help forge the path for entrepreneurship. The ongoing projects were mentored and monitored by the PMC Experts associated with the projects.



Impact of the Scheme

SIIP

Social Innovation Immersion Program (SIIP), a component of SPARSH, is a fellowship program aimed to identify specific needs and gaps in socially relevant areas and then bridging them through biotechnological interventions. The programme provides young social innovators an opportunity for clinical and rural immersion, a monthly fellowship and funding support to develop a product (prototype)/technology through a mini kick start grant.

Under the program, 90+ social innovators in six thematic areas namely, Maternal and Child Health, Ageing and Health, Food and Nutrition, combating environmental pollution, Agri-Tech (including reducing post-harvest losses) and Waste to value have been mentored and several novel and interesting ideas to tackle related problems were generated. The research ideas serves as a pipeline to BIG and formal startup incorporation.

The program is implemented through BIRAC supported SPARSH centres and mentored by knowledge partner TISS (Tata Institute of Social Sciences). SPARSH centre are homed in BioNEST Incubators. Currently, 14 SPARSH Centres spread over 9 states are in operation and house 65 Social innovators working on various societal problems.

A new call for SPARSH innovators was announced on 15th August, 2021 for recruitment of 70 fellows across 14 Centres. The call which closed on 30th September, 2021 evoked over 1000+ applications. After thorough screening, 64 SPARSH fellows were selected for the 2nd cohort.

65 fellows of the 1st cohort of the program graduated in March, 2022. The completion certificates were distributed to them on the "Graduation Day".

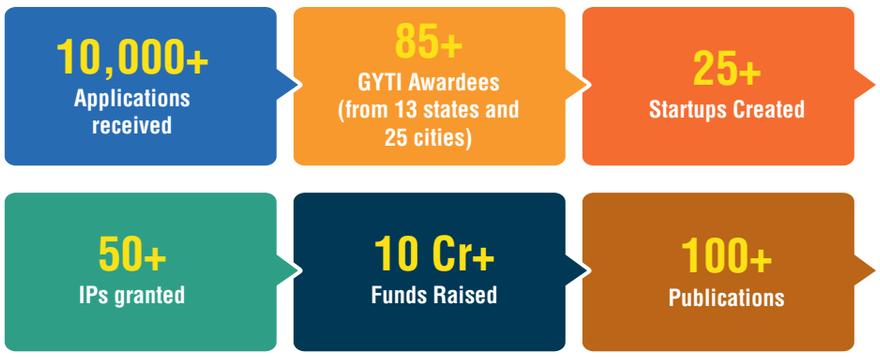
Achievements of the Scheme

SITARE

Students Innovations for Translation & Advancement of Research Explorations (SITARE) scheme is aimed at developing and nurturing early-stage entrepreneurship by supporting innovative student projects in the area of biotechnology. The scheme's mandate is to promote and encourage young students for embracing translational research to develop innovative products and technologies addressing unmet needs. The scheme has two components-SITARE GYTI and SITARE-Appreciation and is implemented in partnership with SRISTI, Ahmedabad.

SITARE- Gandhian Young Technological Innovation Award (GYTI) Grant

This scheme encourages PG and PhD students to undertake research projects that have commercial potential and lead to the creation of biotech Startups. Annually, 15 innovative student projects are awarded INR 15 lakhs each. The scheme also provides an opportunity to incubate and carry forward the degree work, set up a start-up, mentoring access from technical & business experts. It serves as a pipeline for BIG and BioNEST incubatees.



SITARE GYTI Highlights

During FY 21-22, the SITARE GYTI awards to 10 new awardees were conferred upon by Prof. Ajay Kumar Sood, PSA, GoI in the presence of Dr. Rajesh Gokhale, Secretary, DBT.

SITARE- Appreciation Grant

A 3-4 weeks long Residential workshop called Biotech Innovation Ignition School (BIIS) for UG students is organized to provide mentoring and hands-on technical training for problem identification. Up to 4 such workshops are conducted every year. Out of 50-60 students per workshop, 10 students are selected and provided an appreciation grant of up to INR 1 lakh each to encourage their inquisitiveness and sustained efforts. 12 BIIS workshops have been conducted so far benefitting more than 600 students across 26 states and 90+ districts.

Scale up of SITARE BIIS to Bharat Ke SITARE

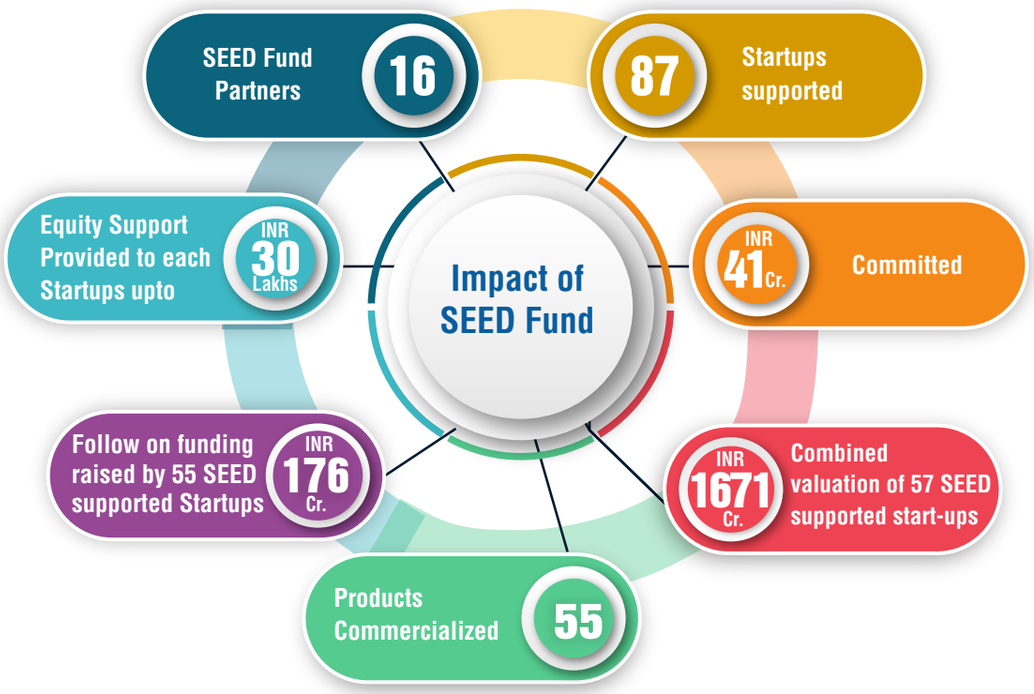
Recognizing the potential benefits of online plus physical outreach, response & support of distinguished leaders, scientists, the SITARE BIIS programme is being considered for scale up to Bharat Ke SITARE. The Bharat Ke SITARE would target reaching out to an enhanced number of students (upto 100X) using a combination of online & physical mode delivery. Trained scholars would identify real-life pain points from the field, handle technologies on the field, to become the torch bearers of technology adoption at the Tier 2/Tier 3 & aspirational districts.

Equity Funding Schemes

SEED Fund

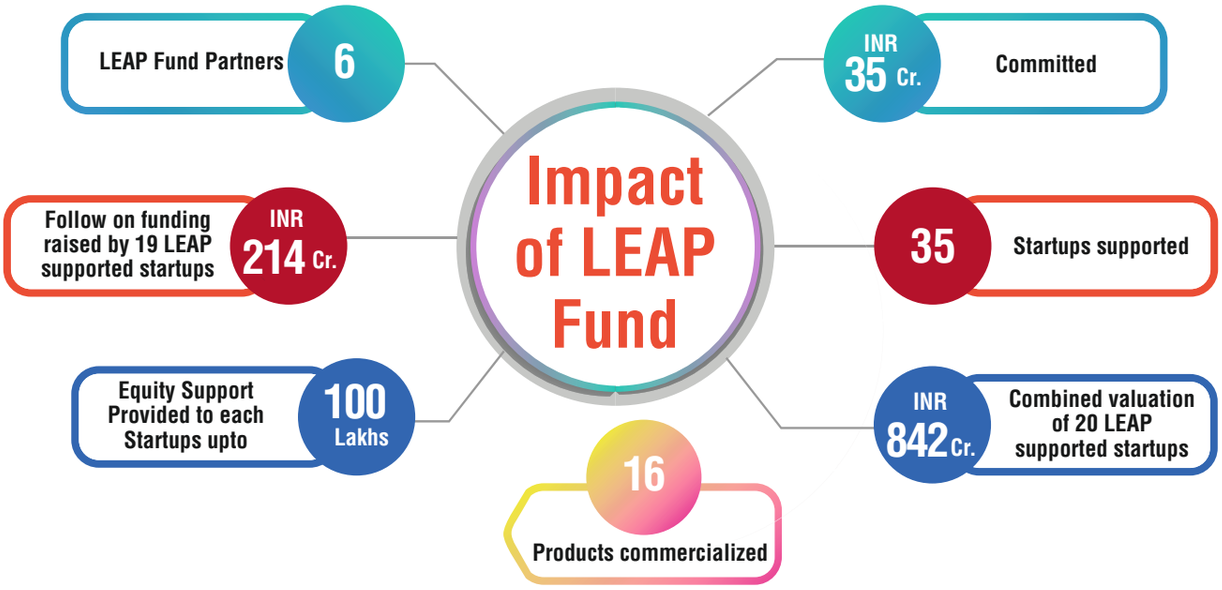
Sustainable Entrepreneurship and Enterprise Development (SEED) Fund is the first equity exposure to startups with new and meritorious idea, innovation and technologies. SEED support of upto INR 30 lakhs to a startup is positioned to act as a bridge between promoters' investment and Venture/Angel investment. The scheme is implemented through selected BioNEST Incubators who as SEED Fund partners manage the equity.

During the year 2021-22, 20+ startups were supported under SEED Fund. Two exits with a total upside of INR 21.24 lakhs reported.



LEAP Fund

Launching Entrepreneurial Driven Affordable Products (LEAP) Fund is providing funding support to potential startups to pilot/ commercialize their products/ technologies. LEAP provides funding support of up to INR 100 lakhs/ Startup that has reached pre-commercialization stage in order to reduce its gestation period. The scheme is implemented through selected BioNEST Incubators who as LEAP Fund partners manage the equity.



During the year 2021-22, 15+ startups were supported under SEED Fund. 2 startups exited with a total upside of INR 146 lakhs. .

BioAngels

BioAngels program has been launched by BIRAC with Indian Angels Network (IAN). It is positioned to become India's single largest horizontal platform for seed and early-stage investing. It is focused on supporting Biotech, Medtech, Healthtech, Pharma, Agritech & Cleantech startups to raise their angel round from Investors who also bring deep domain expertise. It aims to fuel the ecosystem through interactions with high-quality investors and industry leaders. BioAngels Platform was launched on 4th May 2022.

BioAngels initiative would encourage and mobilize Private Equity into the ecosystem especially the early-stage investments. This platform will lead to the creation of a consortium of Angels, HNIs, early-stage VCs. It is expected that about 145 startups would receive equity investment of about INR 350 Cr over the period of 3 Years.

LAUNCH EVENT

4TH MAY | 4:30 PM - 6:00 PM IST

Dr. Manish Diwan
Head - Strategic Partnership & Entrepreneurship Development
BIRAC

Saurabh Srivastava
Co-Founder
Indian Angel Network,
Ex-Chairman, NASSCOM

Dr. Alka Sharma
Senior Advisor, DBT
& MD, BIRAC

Srikant Sastri
CO Member, BioAngels
Chairman,
TiE-Delhi NCR

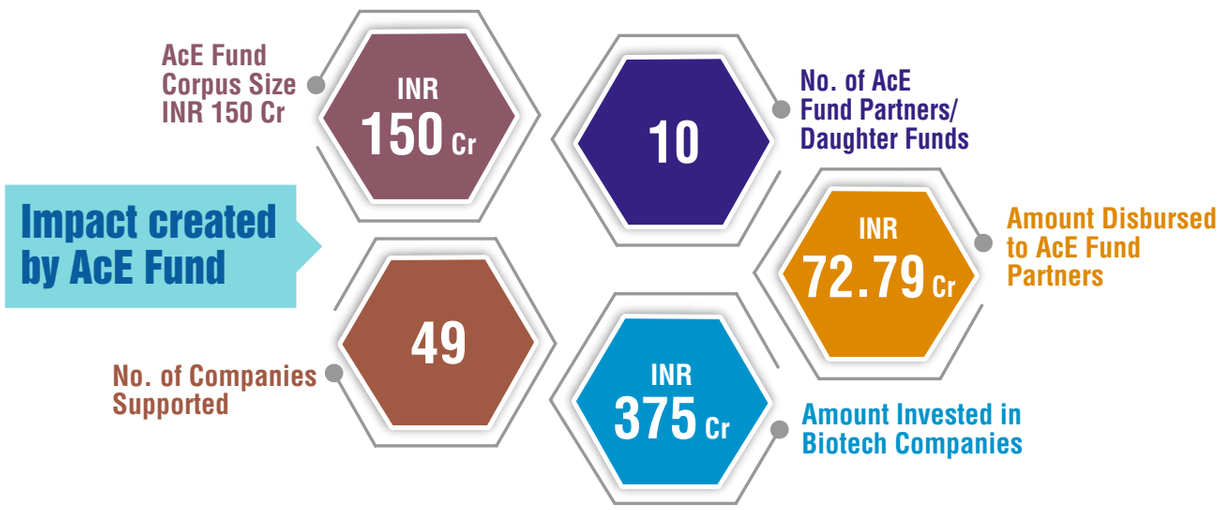
Padmaja Ruparol
Co-Founder,
Indian Angel Network
Founding Partner, IAN Fund

Register Here To Attend

Launch of BioAngels

AcE Fund– Fund of funds

Accelerating Entrepreneurs (AcE) Fund is a "Fund of Funds" which aims to foster R&D and innovation in Biotechnology by plugging the gap of "Valley of Death" encountered by Biotech start-ups during their 'product development cycle' and 'growth phase'. AcE Fund invests and partners with SEBI- registered AIFs (Venture Funds and Angel Funds), which are professionally managed and desirous of investing in biotech sector. The Daughter Funds are committed to invest 2x of BIRAC's investment amount from fund corpus in Biotech start-ups. AcE Fund provides equity investment of up to INR 7 Crores per startup. The AcE Fund has been able to infuse INR 300 Cr private equity commitment into the Biotech ecosystem using AcE fund as a catalyst.



During the FY 21-22, INR 1.23 Cr of returns were received.

AcE Fund Partners

Programs for Niche areas, Specialized services, Supplementary activities

IP & Technology Transfer

- BIRAC works closely with Bio-incubators and Regional Centres to provide the whole gamut of IP & Technology Management services to the ecosystem. "IP & Technology Management Law Clinic Connect" for the start-ups, innovators, scientists provides a platform for one-to-one interaction with the experts in the domain of IP & Technology Transfer. In 2021-2022, 7 such IP & Technology Management Law Clinic Connect were conducted virtually.
- Four virtual workshops were also organized on Patent Process and its strategy, 3D-Printing: The Challenges of Patents and Intellectual Property, Geographical Indications and its registration process and Primer on Bio-Property.

BIRAC-PATH Scheme

- BIRAC's IP & Technology Management group conducts an IP evaluation for grant proposals that it receives under its programmes such as BIPP, PACE, SBIRI, National Bio-Pharma Mission, Mission COVID-Suraksha, COVID-19 Consortium and BIG. The group also provides guidance on IP and licensing issues in collaborative research projects including the international projects.Further the group provides support to start-ups, academia and SMEs on Patent searches, patent drafting, filing, Technology evaluation, marketing and drafting of license agreement.
- To facilitate the protection of entrepreneur's, industries and SMEs Intellectual Property, BIRAC through a Patenting & Technology transfer for Harnessing Innovations (PATH) scheme, support patent drafting, filing and maintenance of patent applications nationally and internationally.
- To implement the scheme, BIRAC has also empanelled technically competent and experienced IP & Technology Transfer (TT) firms who could provide assistance for Patent search, filing, drafting and

commercialization of such technologies, if required. BIRAC supports projects under BIG, SBIRI and BIPP and provides assistance in supporting IP generated in the funded program.

- BIRAC-PATH program was launched in 2013 and so far 21 patent filings for start-ups, academic institutions and SMEs have been supported. In 2021-22, a total of 7 BIRAC beneficiaries were supported.
- Patent filing support has been extended for Provisional and Complete Indian filing, PCT filing and national phase entries in different countries such as US, EU, China, Japan, Australia, and India. These patent applications are filed mainly in the area of secondary agriculture, agriculture, Industrial Biotechnology and healthcare.

Regulatory Facilitation

BIRAC Regulatory Cell

BIRAC Regulatory Cell was created in November 2018 with a mandate "To facilitate the process of interpreting the rules and regulations and fostering innovation through helping entrepreneurs pass through regulatory hurdles". It has carried out all the activities successfully.

Three meetings of the Regulatory Advisory Committee were organized in January, April and August, and 2021 respectively. A total number of 44 proposals respectively were discussed for identifying probable regulatory issues in the area of Biosimilars, Vaccines, Agriculture, Secondary Agriculture, Industrial Biotechnology, Medical Devices and Diagnostics. Broad guidelines and terms of reference for identifying regulatory challenges and possible regulatory requirements for the Biotherapeutics theme area for BIRAC-supported project were developed.

Regulatory Advisory Cell's Advisory Committee has members from all the above-mentioned areas and helps in identifying regulatory requirements for the proposals shortlisted for Apex consideration in the SBIRI, BIPP, PACE, SPARSH and NBM programs of BIRAC.

FIRST HUB

To promote government initiatives on Start-up India & Make in India, a Facilitation unit, FIRST Hub (Facilitation of Innovation and Regulations for Start-ups and Innovators) was created to address the queries of Startups, Entrepreneurs, Researchers, Academicians, Incubation Centres, SMEs etc.

FIRST HUB was created on the recommendation of NITI Aayog in August 2018. The first meeting of the FIRST HUB was conducted on 07th Sep 2018 at BIRAC. Officers from various departments like CDSCO, ICMR, NIB, BIS, GeM, and DBT come together every first Friday of the month to take queries of innovators. Queries related to regulatory pathways, funding opportunities, market access, IP, and technical mentorships are addressed in this appointment-based platform.

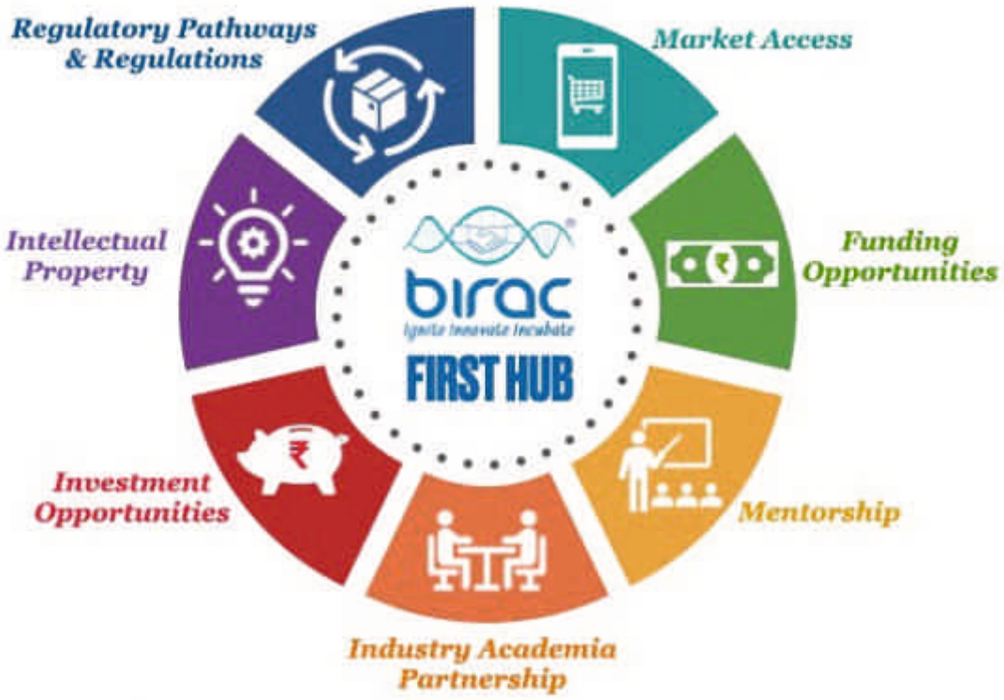
To date, 50+ meetings have been organized and 750 + queries addressed. Special Session on COVID-19 was conducted with 150 + queries. Special Webinar conducted on COVID-19 with close to 150 registrations. Special Sessions during GBI were conducted with the participation of 100+ innovators.

Biotech FIRST HUB

Facilitation of Innovation and Regulation for Startups and Innovators

A facilitation unit set up by BIRAC to address the queries of Startups, Entrepreneurs, Researchers, Academicians, Incubation Centres, SMEs, etc.

Representatives from DBT, BIRAC, CDSCO, NIB, GeM, KIHT and BIS are available to take queries every 1st Friday of the month.



700+ Queries of Startups and Innovators Already Addressed

To submit a query, scan the QR code or visit birac.nic.in/firsthub.php

@BIRAC_2012

DBT-BIRAC

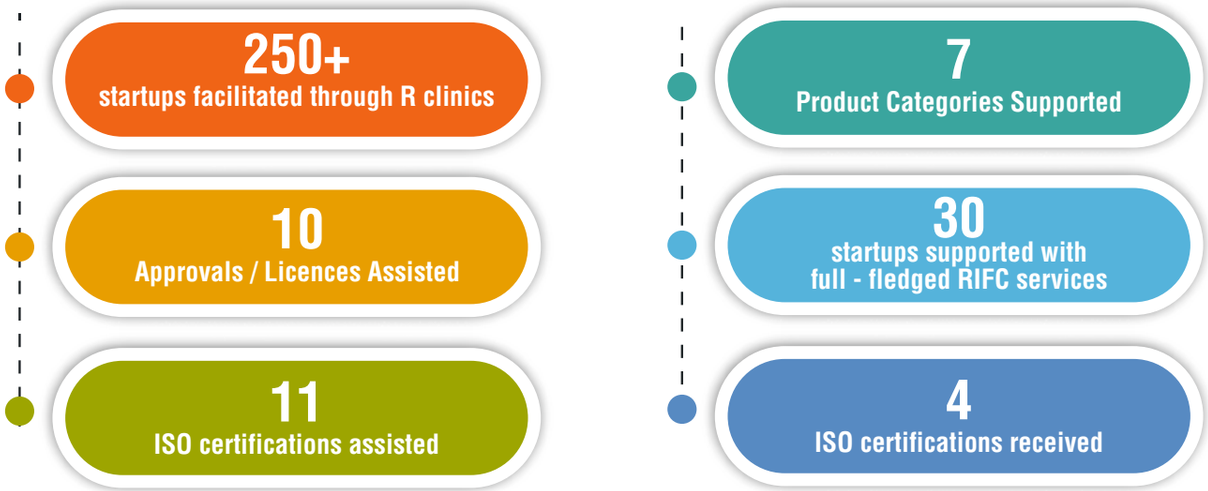
DBT-BIRAC

Regulatory Information and Facilitation Centre (RIFC)

The Regulatory Information and Facilitation Center (RIFC), is a joint initiative of Venture Center and BIRAC under the BIRAC Regional Bio-Innovation Center (BRBC) program. The RIFC assists bio-entrepreneurs in planning, seeking and securing regulatory approvals by providing information in an entrepreneur-friendly manner, providing access to experts and regulators, providing access to practical insights from other entrepreneurs, providing services and organizing relevant and useful workshop clinics.

Outcome:

- Startups supported with full-fledged RIFC services-30
- Approvals / Licences Assisted-10
- ISO certifications assisted-11
- Start-ups supported with full-fledged RIFC services-30
- ISO certifications received-4
- Product Categories Supported-7 (Implants, wound healing, surgical instruments, surface disinfectants, life supporting device, electro-mechanical device, diagnostic kits/ reagents)



DBT- BIRAC Mission Program on Anti-Microbial Resistance

DBT-BIRAC on AMR focuses on nurturing collaborations between academia and industry partners to enhance their capabilities for developing new antibiotics and therapeutics for AMR. First joint call has been announced in 2018-19. It was decided that academia will be supported by DBT and Industry will be supported by Industry.

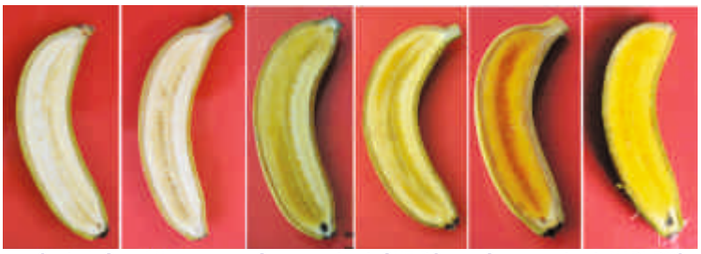
A single proposal from JNU has been awarded in collaboration with Anthem Bioscience in first round of call & is supported for 3 years. The proposal focuses on development of the lead compound PPEF, (bisbenzimidazole) targeting topoisomerase IA from the library of bisbenzimidazoles that have shown to inhibit selectively topoisomerase IA enzyme. The proposal aims to undertake development of bio-enhanced and targeted drug delivery systems (DDS) of PPEF to enable translation of this new lead for clinical application. The proposal is ongoing and will complete in 2023.

BIRAC-QUT, Australia- Bio-fortification & Disease resistance in Banana

BIRAC has supported a technology development and transfer program of bio-fortified and disease resistance banana from Queensland University of Technology (QUT), Australia being translated by the 5 identified Indian Research Institutes.

In the initial phase, transgenic banana plants with enhanced level of Provitamin A and Iron, and resistant to Focs and BBTV were developed using various gene constructs provided by QUT to the Indian partners. Subsequently, these transgenic plants were transferred to greenhouses/net houses for detailed evaluation. Further leads developed under the program include:

- Evaluation of the transgenic banana plants for the desired traits has been completed under the net house.
- Promising transgenic banana events having high PVA and iron (higher than the control) content in ripe-fruit-pulp have been identified. These plants will now be subjected to Event Selection trials.
- For BBTV resistance, agronomy and yield analysis data along with proper molecular data with control plants is being generated.



Control: Grand Naine PVA (7.7 to 5.57 µg/g DW) | Gene construct: QUT-DC PVA (55.59 to 28.41 µg/g DW) | Gene construct: NABI-DXS PVA (300 to 116 µg/g DW)

Promising lines of GM Banana over expressing PVA genes

Program on Synthetic Biology

The area of Synthetic Biology requires special attention in view of the enormous applicable potential. Since Synthetic biology is an emerging technology, BIRAC had supported a program on “Synthetic Biology for transition towards a bio-based economy”. The main aim of the program is to generate joint research, development and commercialization activities.

Two calls for proposals have been announced which led to supporting a total of 11 projects. These projects focus on developing products such as rose oxide, sandalwood sesquiterpenes and biobutanol production. The monitoring and mentoring of the progress of the projects sanctioned in the two calls is being regularly conducted. Few projects have resulted in development of PoC. Future course for supporting the outcome is under consideration.

A three-day BIRAC – ICGEB webinar series was conducted on the “Role of Synthetic Biology in BioEnergy Research and Value added Biomolecule Production” on 19th -20th April 2021 & 20th May 2021. More than 300 participants joined the webinar from various industries and academic institutions. There were talks from eminent scientists and the lectures emphasized on developing various molecular tools for the model and non-model bacteria, yeast and fungi for performing various synthetic biology operations.

Innovation Clean Technology - Scale up

Under the 100 days Swacch Bharat agenda of the Department of Biotechnology, few promising technologies in the area of waste management/waste to energy were taken forward for Scale up/implementation at 10 sites/States. The implementation of these technologies had to be done in association with Municipal Corporations/Urban local bodies (ULBs) identified by the companies. Few potential technologies, which had achieved TRL 7, supported by DBT/BIRAC were shortlisted for consideration. Out of these, a total of 5 technologies have been identified which are being implemented in association with the Municipality/ULB of Goa, Bangalore, Thiruvananthapuram and Greater Mumbai. Four projects have been funded, so far, for support and are at an advanced stage of development. The plants have been set up and data generation is ongoing.

Waste to Energy Mission

BIRAC with core competency as a knowledge provider can bring about a transformational change in the sanitation condition of the country by fostering and nurturing innovative technologies for Waste treatment, disposal and conversion to value added products.

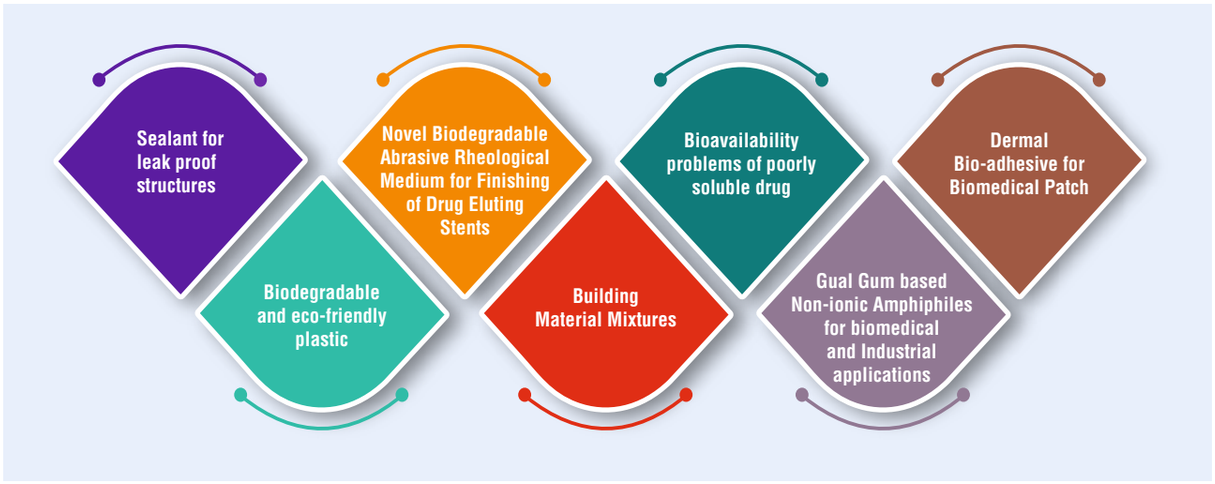
Department of Biotechnology along with BIRAC is working on the development of a Clean Tech Demo Park at the Barapullah Drain site in Delhi with a view to demonstrate innovative waste-to-value technologies at the site. A few of the BIRAC supported technologies are proposed to be implemented at the park. CEIIC, an international Incubator supported under the BioNEST scheme of BIRAC, is the anchor for supporting the demonstration projects as part of the Clean Technology Demonstration Park.

Program on Guar Gum

The Guar Industry has evolved from being used for domestic and ruminant feed purposes to finding use in industry. Owing to new technologies and ongoing R & D, the natural gum property of guar can have varied applications from food, pharma industry to oil Industry. The guar industry is poised to grow and develop owing to high focus on research in Universities and technical institutes of the world.

Looking at the agricultural and industrial importance of this marginalized crop, BIRAC is working on a single vision strategy for development of guar production, R&D and processing industry based on the views of all the stakeholders in the value chain.

- 08 projects have been considered for BIRAC funding in the areas of building material mixtures, sealants, bioplastics, biomedical patch and guar derivatives.
- Out of these 8 projects, 02 projects are from industry and 06 from academia and association.



Areas supported under Guar Gum

Early Translation Accelerator (ETA)

BIRAC is supporting Early Translation Accelerators (ETAs) to focus on catalyzing the transformation of young academic discoveries (publications/patents) with possible commercially viable ventures and technologies. The aim of ETA is to add the translational component to establish proof-of-concept/validation to attract industry for taking these validated technologies further for development and nurture collaboration with academic investigators.

In the year 2021-22, 9 proposals for the newly established ETAs have been finalized. Five projects were supported by ETA-Yenepoya and 4 projects by ETA-BETIC.

In past, ETA at C-CAMP, finished three projects in their initial phase of support and submitted two patent applications. The industries have embraced the technologies. ETA at IIT-Madras bio incubator completed 4 projects in the field of Industrial Biotechnology and they are in negotiation with the industry for adopting the technology.

Accelerated Translational Grant for Commercialization (ATGC)

Department of Biotechnology (DBT) in collaboration with BIRAC launched this scheme in 2019-20 with an aim to accelerate translational research leads beyond early stage validation and encourage academia to develop technology/product & processes. The mission of this program is to enable academic researchers to take their laboratory research leads with established proof-of-concept and early stage validation to the next phase via translational research opportunities.

The scheme has two categories

- Academic Lead Translation (ALT)
- Academic Industry Translational Research (AITR)

(a) Academic Lead Translation (ALT)

The objective of Academic Lead Translation (ALT) scheme is to promote validation of demonstrated Proof-of-concept (PoC) for a process/product. The academic institutions could do it independently or collaborate with other academic partners with complementary expertise to translate the leads or in a contract research mode to develop the leads.

(b) Academic Industry Translational Research (AITR)

The objective of Academic Industry Translational Research (AITR) scheme is to promote validation of Proof-of-concept (PoC) for a process/product by academia with the involvement of industry or for validation by the industry in contract research mode.

DBT will fund the academic partner and industry will be funded by BIRAC.

There have been 5 calls announced to date; no projects were suggested under AITR from the first 2 and 4th calls, but 2 projects were recommended under AITR from the third call, and the procedure of granting GLA to the industry partner is currently being handled. The projects from the fifth call are now being screened.

Product Commercialization Program (PCP)

BIRAC launched Product Commercialization Program Fund (PCP Fund) under the Product Commercialization Program to hasten the product commercialization process by providing support to Biotech startups whose product/technologies are at or above TRL-7 stage.

The main objectives of PCP Fund are:

- To hasten the product commercialization processes by providing all necessary support to the projects which have performed well under the ongoing funding programs of BIRAC and have high commercial potential.
- To provide required support including financial grant, mentoring, connecting with Investors, regulatory facilitation, market access, etc.

Five projects are ongoing and few more projects have been shortlisted for funding support in 2021-22.

BIRAC Regional Centres

1. BIRAC Regional Innovation Centre (BRIC)
2. BIRAC Regional Entrepreneurship Centre (BREC)
3. BIRAC Regional Bio-Innovation Centre (BRBC)
4. BIRAC Regional Techno-Entrepreneurship Centre (for East & North East) (BRTC)

BIRAC Regional Innovation Centre (BRIC)

The BIRAC Regional Innovation Centre was established in partnership with IKP, Hyderabad in 2013 as the first regional centre of BIRAC. Following activities have been conducted in 3 phases over the 8 years (2013-2021).

- RIS Mapping to understand the innovation ecosystem across the country. The study was conducted in three phases, dividing the country geographically in 23 clusters with a special focus on life sciences.

- Engaging with academia and start-ups on IPR
- Entrepreneurship Development

Phase IV of BRIC is under discussion for next level of activity.

BRIC Outcome

- Regional Innovation mapping of 22 clusters across the country to understand knowledge generation capacity and to identify the gaps that hinder biotech entrepreneurship and progression of commercialization of innovations
- Based on recommendations of the Phase -I, II & III reports for sustained development of local life sciences innovation ecosystems, BioNEST incubators seeding has expanded to Tie 2, 3 cities and IP & Regulatory mentorship support to startups augmented
- 100+ workshops and networking meetings on IPR, funding opportunities, regulatory guidance and capacity building in Tier 1,2 cities to engage innovators and >250 Key Opinion Leaders (KOLs) carried out
- Integration of local cluster centric talent/efforts with formal entrepreneurial network

BIRAC Regional Entrepreneurship Centre (BREC)

BREC at C-CAMP was set up as the 2nd Regional Centre of BIRAC in January 2017 with a mandate to extend BIRAC's outreach for entrepreneurship activities across the country. BREC completed Phase 1 in January 2020. Phase-II is in progress with enhanced scope of activities. Major activities conducted by BREC and the impact created is as follows:

- Entrepreneurship Awareness & Development Workshops
  - 3600+ students inspired for Biotech Entrepreneurship as a career
  - 1400+ Entrepreneurs/Start-ups provided with specialized domain knowledge through ED workshops
- National Bio Entrepreneurship Competition (NBEC)
  - 12000+ Registrations for National Bio Entrepreneurship Competition from across the country
  - INR 22 Crore NBEC Cash Awards and Investments mobilized
- Bio Entrepreneurship Boot Camp
  - 4 annual boot camps organized with involvement of international faculty

Events organized by BREC

- Investor Meets
  - 1000+ One-on-one meetings between start-ups and investors
  - 530+ Mentoring Sessions
- Incubator Manager Immersion Programme
  - 30+ Incubator Managers trained
- BIRAC Grantees alumni portal
  - Under development

BIRAC Regional Bio-Innovation Centre (BRBC)

BIRAC Regional Bioinnovation Centre (BRBC) was created as the 3rd Regional Centre in partnership with BIRAC's BioNEST Incubator Venture Centre, Pune in March 2018. It is mandated to support and promote entrepreneurship in Life Sciences addressing specific gaps in the ecosystem including Regulatory compliance through a Facilitation Centre and Incubation Manager's training through a Practice School besides others.

Major activities conducted by BRBC:

- Venture Mentoring Service
- Venture Base Camps
- Regulatory Information and Facilitation Center (RIFC)
- BioIncubation Practice School for western regions
- City Camps

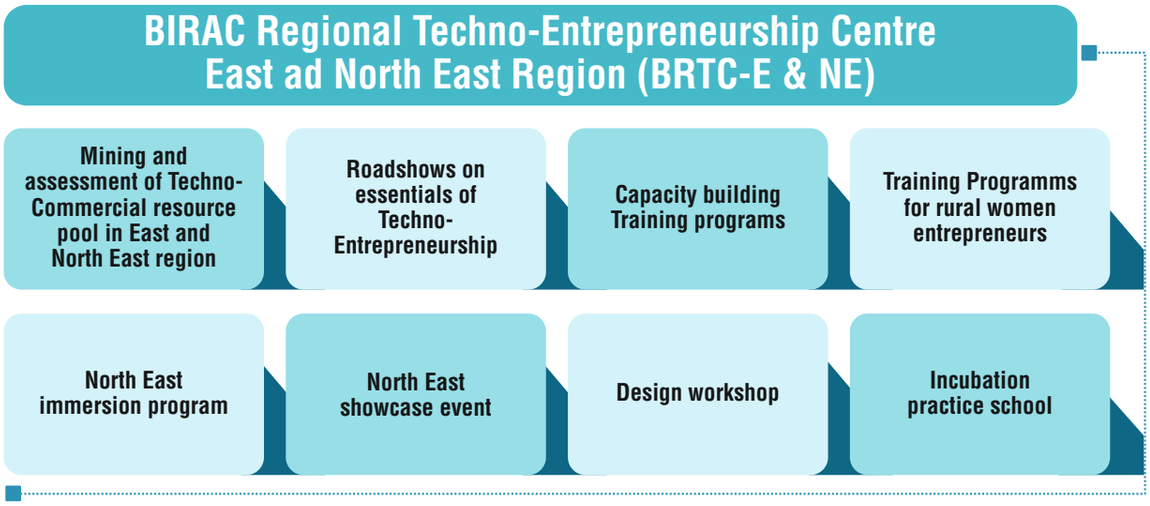
Events organized by BRBC

BRBC Impact so far is as follows:

- 2800+ Participants benefitted through training Programs/ Workshops
- 700+ Mentees/startups connected with mentors
- 4400+ mentoring hours contributed
- 7 Innovative Platform programs to support biotech/biomed startups
- 155 Events to support entrepreneurs in their journey
- 20+ new collaborations with organizations
- 75+ incubator managers trained and supported
- 19 States covered

BIRAC Regional Techno-Entrepreneurship Centre for East and North East Region (BRTC-E & NE)

BRTC was created as the 4th Regional Centre in partnership with BIRAC's BioNEST Incubator at KIIT, Bhubneswar in March 2019, with a focus on promoting entrepreneurship in the East & North East Regions of the Country. Major activities carried out by BRTC are as follows:



BRTC Impact

During its 3 years of existence, BRTC has conducted a total of 55 programmes including roadshows, training programs, design workshops and rural women training programs across the East and North East Region of India. Important highlights of the activities carried out by BRTC are as follows:

- Mentored 4500+ Innovators on various facets of innovation & entrepreneurship through Roadshows, Training Programs Design Workshops, Accelerator Programs, North East Regional IP Workshops
- Mentored and facilitated establishment of new Incubators in the NER such as CSIR NEIST and NEHU Tura under the BIRAC BioNEST program
- 31 Incubation managers and leaders from 19 Incubators located across the North-Eastern states trained through Incubation Practice School

- 500+ rural women entrepreneurs and SHGs across East and Northeast have been provided the skillset to use traditional knowledge with modern biotechnology interventions through skill development training programs
- Mobilized 44+ Innovators from the NE region for funding support under BIRAC schemes including BIG grant, BIG NE Special Call, SIIP, DST Prayas etc.
- Forged collaborations and inked MoUs with more than 15 institutes in NER
- Facilitated setting up of Manipur Technology Innovation Hub (MTI HUB) with 10,000 sq. ft. built up space with support from Manipur Department of Information Technology (DIT)

Manipur University Training Programs

Entrepreneurship program for Rural Women

Events organized by BRTC

3i Portal

3i Portal has been providing a user-friendly and convenient solution for effective management of various funding schemes of BIRAC. Several Schemes/programes are managed through 3i Portal. Applicants can submit application online. Evaluation process involving scoring by expert and post grant monitoring for selected beneficiaries is facilitated through the portal. The portal is now being expanded to manage loan recoveries under BIPP and SBIRI. In addition, data mining and analysis has been made easier through a number of newly added reports. The portal has assisted in conducting surveys and generating reports based on the same. New features to be implemented in near future include advanced search options (such as single click view of all information related to a project).

All flagship schemes and periodic programmes :

Total application received : 26,306

Total beneficiaries being handled : 1,794

Biotech Showcase Portal

Biotech Showcase e-Portal **(https://biotechinnovations.com/)** was launched by Hon'ble Prime Minister Shri Narendra Modi ji during Biotech Startup Expo 2022. The portal features 750 BIRAC supported Biotech Products and Technologies.

The e-portal is accessible globally to provide an opportunity to showcase solutions from India's Biotech Startups solving unmet needs. This is an effort under Make-in-India Facilitation Cell.

Biotech Showcase Portal

Missions

Grand Challenges India

Grand Challenges India (GCI) is the Indian arm of Global Grand Challenges, launched in 2012 and is the flagship program managed by the PMU at BIRAC, and is collaboratively funded by the Department of Biotechnology (DBT), Bill & Melinda Gates Foundation (BMGF), Wellcome Trust is a program-based partner.

The main aim is to address some of the daunting challenges that we face today and tackle them by encouraging Indian innovation and research to develop affordable and sustainable solutions in order to improve health and well-being in India and across the globe.

GCI is committed to seeking and rewarding established researchers, young entrepreneurs, and innovators from both academia and industry. GCI aims to help innovators expand the pipeline of ideas for developing new preventive and curative therapies, piloting new technologies, and exploring new ideas.

GCI supports basic research, translational research, intervention trials, clinical trials, data integration and analysis, and product and technology development. GCI also funds projects at various stages in their lifecycle; from basic science research in laboratories to proof-of-concept projects and potentially to scale-up to innovation projects. GCI is currently working to expand the funding arenas and mechanisms.

Over the years, GCI has grown both as an idea and as a partnership covering varied themes from maternal and child health to agriculture, food & nutrition, infectious diseases, vaccines, medtech devices and diagnostics, sanitation & hygiene among others etc. in order to respond to the ever-changing needs of research in public health in India.

Besides, there is also a suite of cross-thematic programs. Programs in these areas are funded through the open call as well as specialized programs mechanism.

Ideation Grants

Grand Challenges Exploration

Grand Challenges Exploration (GCE)-India initiative, implemented by IKP Knowledge Park, Hyderabad, is a fast-track program aimed at providing seed funding to highly innovative ideas for a period of 18 months to the tune of $100,000 to test their idea and generate initial evidence. The program has supported 36 health care innovations through five calls with the aim to encourage entrepreneurship in India. The awardees are working across public health priorities such as Maternal and Child Health, Geriatric Care, Infectious Diseases, AMR followed by Nutrition, Sanitation etc. to enable the goal of equitable health care.

Sentinels Initiative

'Sentinels Experiment' is a specialized initiative and is currently supporting seven explicit innovation practitioners, focused on exploring, piloting, and testing varied concepts, to solve a wide range of health issues and problems with special emphasis on innovative, impactful research.

The initiative intends to source innovation in India, by working with sentinels for excellence and innovation, who can help identify new ideas and scientists in their institutions, networks, and regions. The experiment used special administrative mechanisms to provide awards of INR 50,00,000/- to each innovative project to generate proof-of-concept.

The Sentinels are based in Bengaluru, two at IISc, two at inSTEM, one at TDU and two companies are studying nutrition, TB, and AMR in different models. Most of the projects are nearing completion and few have been completed on successful note and achieved the final objective.

Maternal and Child Health Initiatives

All Children Thriving

To tackle the huge challenge of maternal and child health, especially in developing countries, GCI has made maternal and child health an important vertical for direct investments. The MCH programs under GCI are aimed at ensuring not only the survival of mothers and their children but also ensuring that they lead healthy and productive lives.

The program has supported seven projects that are focused at ensuring that all children not only survive but also are on a trajectory to live healthy and productive lives. One of the projects has led to creation of India's first **bio-bank or repository** with a large repertoire of biospecimens (~10,50,000 biospecimens and ~5,50,000 USG images) for capacity building in India. The **Women and Infants Integrated Growth Study (WINGS)** has demonstrated that an integrated package of evidence-based interventions when delivered concurrently, results in substantial reduction in the proportion of low-birth weight, small for gestational age, anemia and stunting in children. It also reduces the risk of anemia, reproductive tract infection and improves gestational weight in mothers.

Nutritional Interventions to Improve Linear Growth during Infancy in India (IMPRINT Trial)

The findings of this randomized controlled trial have demonstrated that nutritional supplementation to mothers during lactation does not improve child growth in the first 6 months of life but improves maternal health. Further, it was also observed that nutritional supplements for infants between 6–12-month of age boost their linear growth and other anthropometric indices.

Global Scale for Early Development (GSED) within the WINGS for impact evaluation on neuro development

The Global Scale for Early Development (GSED) has been developed considering that universal measures designed to quantify early child development are lacking. The ongoing study is providing an opportunity to understand the responsiveness of GSED tools (sensitivity) and validate it against available standardized psychometric tools.

Multi-Omics for Mothers and Infants (MOMI) Consortium

A hospital-based cohort of pregnant women, **GARBH-Ini** (interdisciplinary **G**roup on **A**dvanced **R**esearch on **B**irtH outcome - DBT India Initiative) has been established at the civil hospital at Gurugram, Haryana, India by **Translational Health Science and Technology Institute (THSTI)** with support from the **Department of Biotechnology,** Government of India. The platform has been invited to join the **Multi-Omics for Mothers and Infants (MOMI)** Consortium, an international group of leading experts on maternal, newborn, and child health, and innovative 'omics' technologies working together to accelerate solutions for adverse pregnancy outcomes and optimize health for mothers and infants in low-and-middle-income countries.

MOMI brings together 17 large cohorts with well-characterized clinical phenotypes across geographies, robust analytics approaches, and exceptional investigators from diverse disciplines and geographies who have collaborated deeply and equitably to answer fundamental questions about the pathophysiology of pregnancy complications and thereby improve outcomes. The project is in its mid-term implementation and its activities are progressing well. Three publications (proteomics, placental transcriptomics and Gestational weight gain manuscripts) are in the pipeline.

The Pregnancy Risk Stratification Platform Alignment platform – the parent study

Gates Foundation has supported establishment of Pregnancy Risk Stratification (PRS) platform at CMC Vellore, as a surveillance and trial platform at 2 sites in India-Palwal, Haryana, and Makunda (Bazaricherra), Assam.

GCI is supporting the goal of Garbhini India Pregnancy Risk Stratification Platform Alignment (GIPA) to align and validate the findings from the DBT-supported Garbhini platform in a subset of the India Pregnancy Risk

Stratification (PRS) Platform. The Makunda Christian Leprosy and General Hospital (MCLGH) in Bazaricherra, Silchar District, Assam and the Community Health Centre (CHC) in Hodal, Palwal District, Haryana are the two community-based sites with high morbidity and high rates of infant and maternal mortality.

The PRS team is conducting periodic surveillance in the catchment areas of MCLGH and CHC Hodal to generate population-based information in the proposed study area that includes key risk factors resulting in adverse pregnancy outcomes, maternal mortality ratio, and the burden of morbidity and mortality in newborns and children. The project has completed its first-year term implementation and its activities are progressing well.

Vaccines

qHPV Clinical Development

Grand Challenges India, BIRAC supported Serum Institute of India, Pune for the development of India's first indigenously developed quadrivalent HPV types (6,11,16 and 18) vaccine for cervical cancer and Genital warts prevention. The key outcome of this project was to make available a low-cost, affordable Quadrivalent HPV vaccine for the developing world to prevent cervical cancer deaths in India and globally. The primary objectives of the study are to demonstrate the immunogenic non-inferiority, one month after the last dose i.e., at 7 months.

Company Supported: Serum Institute of India, Pune

Current Status: The company submitted an application for marketing authorization to the Central Drugs standard Control Organization (CDSCO).

Health-Tech Program

The Med-Tech Challenge

Innovation to Impact Acceleration Training & Award program of DBT-GoI, BMGF & Wellcome Trust, designed to support Indian entrepreneurs having validated proof-of-concept for medical technologies that are ready to go to the market. The program had a call-by invite in which 22 innovators nominated by the funding partners were given business training and mentorship for 9 weeks by technical partner 'Venture Well', a US based company. After training, 20 innovators competed for the Accelerator Grant, of which 4 were given the full funding recommendation

Two projects were initiated in the FY 2021-22;

1. **JC OrthoHeal Pvt Ltd- FlexiOH:** The Next Generation Orthopedic Immobilization technology
2. Cureous Labs Private Limited- "Eturnal-An effective device to detect and prevent pressure ulcers in bedridden patients"

The other two selected projects to be initiated in the next financial year are;

1. **Saans:** a multi-powered, multiuse low-cost neonatal breathing support system by InnAccel Technologies Private Limited
2. CervAstra by AIndra Systems

Agriculture Development

Nutrition-Sensitive Agriculture

The MSSRF's Nutrition-Sensitive Agriculture program provides food-based nutritional security for malnourished rural households through capacity building and establishment of Nutri-gardens. The programme is converging agriculture, nutrition, and health approaches to improve public health by creating nutrition literacy in 2000 smallholder farmers to enhance diet diversity for better nutrition and health.

The project is being implemented by M. S. Swaminathan Research Foundation in collaboration with four State Agriculture Universities and Krishi Vigyan Kendras (KVKs) at four aspirational districts - Palghar, Maharashtra; Thirur, Tamil Nadu; Kanpur Dehat, Uttar Pradesh; Jeypore Campus of MSSRF, Odisha.

The overall impact of the project will be an improvement in the Diet Diversity Score of the undernourished farm households up to 60% from the base level and appropriate awareness through training at the grassroots level (farmers and malnourished sections of the society) and other stakeholders including policymakers to come out with enabling policies that will help eradicate malnutrition. The project activities are underway within the extended project duration.

Data Analytics Programmes

Immunization Data: Innovating for Action (GCI-IDIA)

Grand Challenges India, BIRAC launched Immunization Data: Innovating for Action (IDIA) in technical partnership with the Ministry of Health & Family Welfare (MoHFW), the Department of Health Research (DHR), and the Indian Council of Medical Research (ICMR), in 2017. This biphasic program was designed to fund a maximum of 10 projects, for 12-18 months, at a maximum of $200,000 per project, to develop proof-of-concept, refine, and rigorously test new approaches in the collection and management of immunization data in India to address challenges in data collection & analysis. The nine projects in the first phase were a mix of technologies that are working to employ a variety of IT solutions such as GIS (Geographical Information Systems), blockchain technology, mobile applications, data warehousing, and others to provide innovative back-end solutions to this challenge.

The second phase is aiming to potentially validate the most successful and impactful approaches from selected from Phase I (three groups) by scaling the pilot studies with the ultimate aim of being integrated into the government program.

Knowledge Integration (ki) Data Challenge

Data Science Challenge is the sixth call, launched to foster new approaches in data-driven decisions designed to answer critical scientific questions related to maternal and child health and development outcomes. The call seeked use of innovative data analytics and modelling approaches that can be applied to ki India or to other relevant data sets that applicants can access. The call was synergized with the Grand Challenges calls from Brazil and later with Africa.

The supported 7 research groups are a mix of public health researchers and data scientists exploring medical imaging, drug discovery, genetics, predictive diagnosis and thereby developing computational methods, especially those for prediction; advances in computational infrastructure, such as cloud computing and GPU clusters. The projects are in late mid-phase of implementation.

The generated algorithms will enable the processing of massive datasets for scientific rigor recognizing the new advances resulting from interdisciplinary research and collaboration to help predict pregnancy outcomes, birth outcomes, and childhood health and development patterns.

Policy Support Program

Knowledge Integration and Translational Platform (KnIT)

A knowledge synthesis platform to facilitate evidence-based policymaking in public health, and address the inequalities in health outcomes. The program focuses on collating and analyzing existing Indian data/ data from comparable geographies to inform states/ policymakers about actionable interventions. The overarching goal is to develop and implement cost-effective, sustainable interventions or packages of multi-sectoral health interventions that are appropriate to the context of different states.

Currently, KnIT focuses on two tracks, Maternal and Child Health (MCH) issues and nutrition, and has two Domain centers working in these areas:

1. The Society for Applied Studies (SAS), New Delhi (Nutrition Domain Center)-Examines public health and medical interventions to mitigate stunting, wasting, severe malnutrition, low birth weight, optimal body composition, metabolic unfitness or obesity, anemia, complementary feeding, and diarrhea.
2. The International AIDS Vaccine Initiative (IAVI), New Delhi (MCH domain center)-Focuses on identifying the health system challenges that are barriers to effective, equitable, impactful delivery of health services and identifies strategies to overcome them.
   - The program has significant outcomes mentioned as under:
   - 15 publications - looking at Indian data to inform public health in India
   - 4 meetings/consultations with 5 states on different Nutrition and MCH issues
   - States interactions to address regional MCH and nutrition issues
   - Adoption of National consultation on 'Anaemia recommendations' by the Ministry of Health and Family Welfare.

Antimicrobial Resistance

Given the increasing importance of tackling AMR in developing geographies, a call to identify and fill gaps in knowledge on AMR burden was launched. The 10 supported projects are mainly was launched intended at developing: solutions for surveillance; low-cost technologies and products that will improve infection prevention in healthcare settings; and technologies to remove antibiotics/antimicrobials from effluents.

Establishment of UK National Institute of Health Research funded Global Health Research India Unit for Genomic Surveillance of Antimicrobial Resistance

Considering that there are greater levels of AMR resistance reported from India as compared to developed countries, the Wellcome Trust Sanger with funding support from UK-NIHR had established Global Health Research India Unit at KIMS, Bengaluru to provide intelligent global surveillance of bacterial pathogens using whole genome sequencing to generate actionable data to respond to AMR in most efficient manner.

JANCare Innovation Challenge

"जनCARE" Innovation Challenge-Reimagining the Healthcare Delivery in Low Resource Settings. BIRAC, NASSCOM and NASSCOM Foundation launched Innovation Challenge- "जनCARE" in collaboration with GCI, a nationwide "Discover–Design–Scale" program, envisioned to identify Innovative health-tech solutions Start-ups for strengthening the Healthcare Delivery in India. The platform is looking for technology interventions that can positively impact healthcare delivery, especially the affordability, accessibility, and quality of services—focusing on Cardiovascular Diseases, Maternal & Childcare, Diabetes, COPD, Cancer care, Eyecare, and other NCDs. 16 Healthtech solutions were identified that are TRL 7 for an opportunity of field validation in Test Beds located at the Low Resource settings.

Real-life set up at selected PHCs, CHCs, Sub-Centers, etc., in rural and semi-urban locations were done. Field Validation duration would be up to 6 months. NASSCOM team has been empowered with dedicated resources to support the testbeds through BIRAC/ GCI and Program Partners.

Sanitation - Reinvent the Toilet Challenge

Phase 2 - Transition to Scale Activities planned for 2019 – 2024

Decentralization of wastewater treatment is a sustainable solution to address this problem that locally treats the sewage and also reuses/recycle. The two technologies that are simple, cost-effective, reliable, and culturally acceptable are being supported under innovation-to-scale. One of the technologies, is the electrochemical reactor that works on a novel electrochemical process in which the water to be treated is subjected to extremes of pH to kill the coliform and Helminths.

The second technology is the completely solar-powered e-Toilet which is connected to the NEWGenerator thus creating a unique model of sanitation recovery with a perfect back-end processing through which resource generation/recovery is made possible. The NEW generator harvests nutrient fertilizers (Nitrogen, Phosphorous, and Potassium), energy through biogas, and clean water from human wastes. The machine achieves a high level of waste treatment through the use of anaerobic membrane bioreactor technology (AnMBR). A high level of pathogen destruction is performed to ensure safe sanitation.

GCI Supported COVID-19 Programs

(a) COVID-19 Sero Surveillance

COVID-19 Sero-Surveillance was initiated to understand the seroprevalence of SARS-CoV-2 in India and monitor the trends of transmission. The project also focuses on generating evidence on the role of asymptomatic and mild infections in transmission. Under the programme, two projects have been supported

1. King Edward Memorial Hospital and Research Center, Pune (a site under the NBM DBT DRIVEN program), and
2. Translational Health Science and Technology Institute, Faridabad with Tata Institute for Fundamental Research and Kasturba Hospital, Mumbai.

(b) COVID-19 Sewage Surveillance

The program is focusing on the development and testing of protocols for sewage surveillance in India. Two projects are being supported in this program;

CMC, Vellore and the Administrative Staff College of India, Hyderabad is working on a joint project to "Establishing a monitoring system for COVID-19 through Environmental Surveillance in sewered and unsewered areas of Hyderabad ".

BITS Pilani, is working on wastewater-based epidemiology and screening for COVID-19.

(c) Mobile Diagnostic Labs

The partnership is supporting the establishment of 4 mobile labs to generate proof-of-concept of such labs. These mobile laboratories will not only provide diagnostic support service to organizations for mitigation of biological emergencies but will also provide safe handling and preservation of samples from disease outbreaks or during surveillance.

Kawach model is developed by a private company based in Mumbai, Science by Design Lab systems (I) Pvt. Ltd. The mobile lab is deployed at Rajiv GANDHI Centre for Biotechnology, Trivandrum, Kerala.

PARAKH model of Defence Food Research Laboratory, Defence Research and Development

Organization (DFRL-DRDO), for which Principal Scientific Adviser's (PSAs) office received donations of two chassis from Daimler-Benz Pvt. Limited. The fabrication of two mobile labs was done by DFRL-DRDO industrial partner- the Microflow India Devices Private Limited, Chennai.

One of the two mobile labs has been deployed at IITM, Chennai and other is waiting for vehicle registration for transport to IIT Guwahati.

SSC-NTBN

Scientific Sub-Committee of National Technical Board on Nutrition (SSC-NTBN) was Formulated by NITI Aayog in 2018 with Secretary DBT and Secretary, DHR & DG, ICMR as Co-Chairs, and its Secretariat is housed at BIRAC. The mandate of SSC-NTBN is;

a) To support NTBN on policy issues related to nutrition by providing evidence-based technical recommendations

b) To evolve strategies for mitigating anemia, micronutrient and other forms of malnutrition

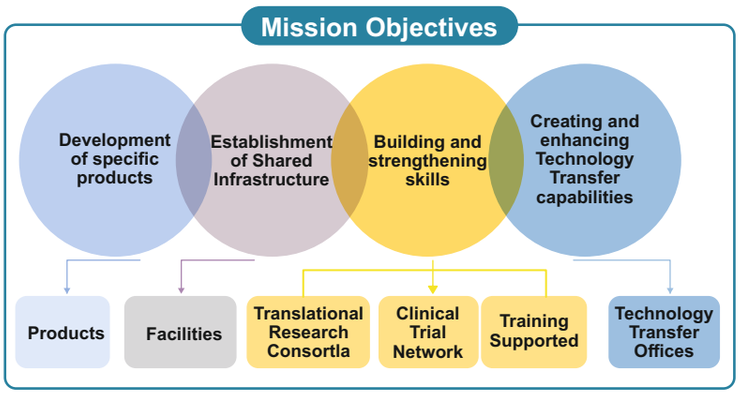
Under the SSC-NTBN two sub-working groups were formed in the FY 2021-22 on a) policy implementation and b) research priorities. The first meeting of these working groups was held on 6th-7th October 2021 and the recommendations of the working groups were presented in the 5th SSC-NTBN meeting held on 28th October 2021.

Major recommendations of the working groups approved by the SSC-NTBN Committee;

- Concept notes to the Ministry of Women and Child Development, Ministry of Health and Family Welfare, and NITI Aayog for policy revision on;
  - a) Revised calculation of nutrition (energy) gap in the daily diet with respect to Take Home Ration (THR) in the Indian context
  - b) Redefine caloric intake calculation with respect to catch up growth in Severe Acute Malnutrition (SAM)
- List of more than 30 research priority areas in public health and nutrition sent to MoHFW, ICMR, DST, DBT, Ministry of Agriculture, ICAR, Ministry of Food Processing Industries, FSSAI for considering the researches on the identified priorities.

National Biopharma Mission

The National Biopharma Mission (NBM), is a government-industry-academia collaboration dedicated to 'Accelerating Discovery Research to Early Development for Biopharmaceuticals', funded at a total cost of INR 1500 Cr, co-funded by the World Bank at 50% cost sharing. NBM's charter is being implemented by Biotechnology Industry Research Assistance Council (BIRAC), a Public Sector Undertaking, set up by the Department of Biotechnology (DBT).



- **Bring Products Closer to Market**
- **Bridge Critical Gaps**
- **Build Human Resource**
- **Enhancing Access to Technologies**

Vision: To enable and nurture an ecosystem for preparing India's technological and product development capabilities in biophrmaceuticals to a level that will be globally competitive over the next decade, and transform the health standards of India's population through affordable product development.

Program Objectives

Handholding Specific Products, relevant in India's needs

Vaccines	Biosimilars	Medical devices
2-3 Vaccines	2-3 Biosimilars	3-4 Medical Devices

- Relevant to the public health, India specific
- Low cost

Ecosystem Strengthening

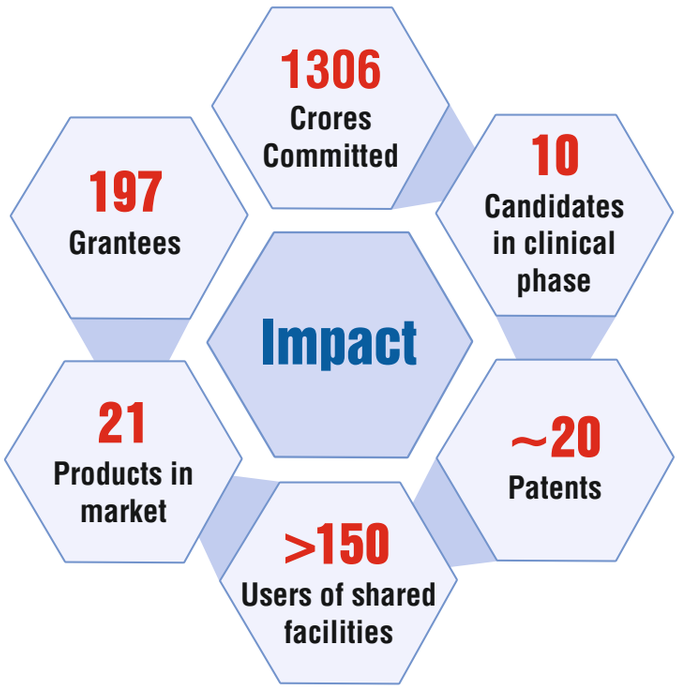
Facilities	Bridge Infrastructural Gaps for early stage through Accessible and Regulatory Compliant Service Facilities
Translational research Consortia	Spurring products oriented research by building a pipeline of products
Technology plateforms	Enhancing innovation quotient and decreasing import dependency for animal models, raw materials and cell lines
Clinical Trial Network (CTN)	Building Clinical Capacities for accelerated Product development
Skill Development	Generating mass of critical talent to support product development
Tech Transfer Offices	Strengthen bio-cluster ecosystem and enhance translation capacities

- Aid products in pipeline
- Enhance capabilities to develop novel indigenous products
- Enhance outsourcing capabilities

Generating next-gen trainers, leaders, skilled workforce

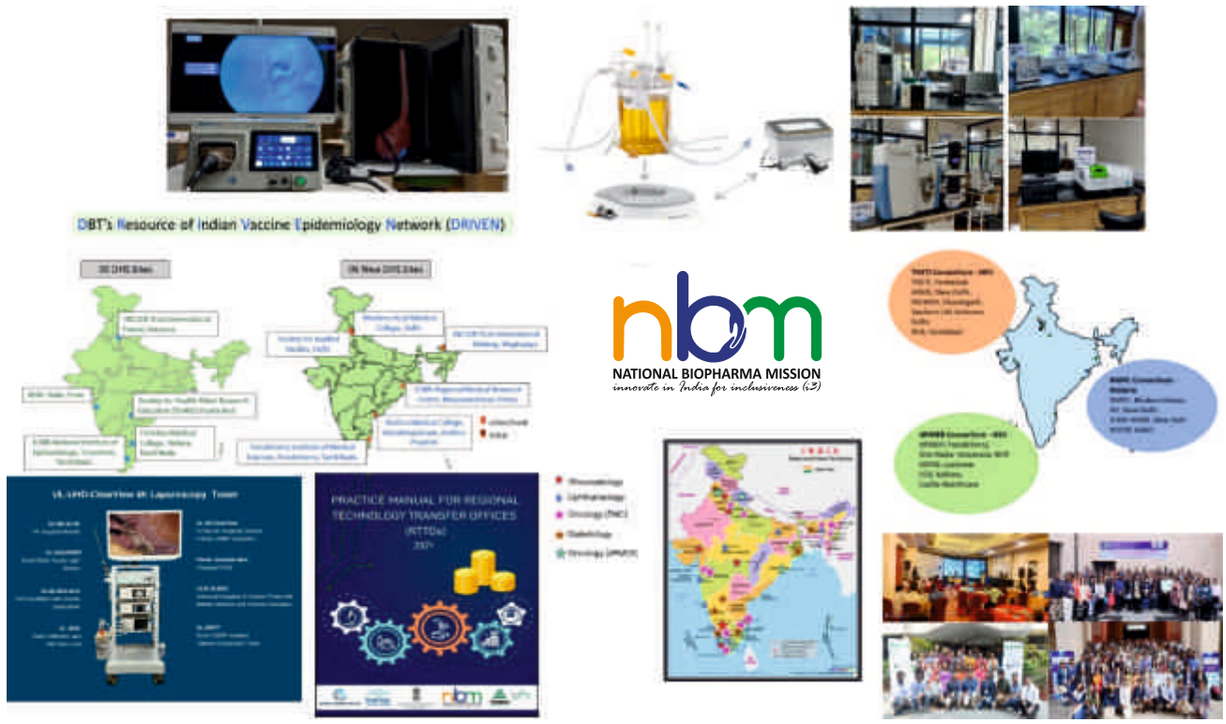
- Build IP driven bio-economy
- Regional competencies

Highlights/Overall Outcome: Under this program there are 8 identifiable components namely: Vaccines, Biotherapeutics, Devices and Diagnostics, shared facilities, clinical trial networks, technology transfer offices, training and scientific research programs which are financially supported.



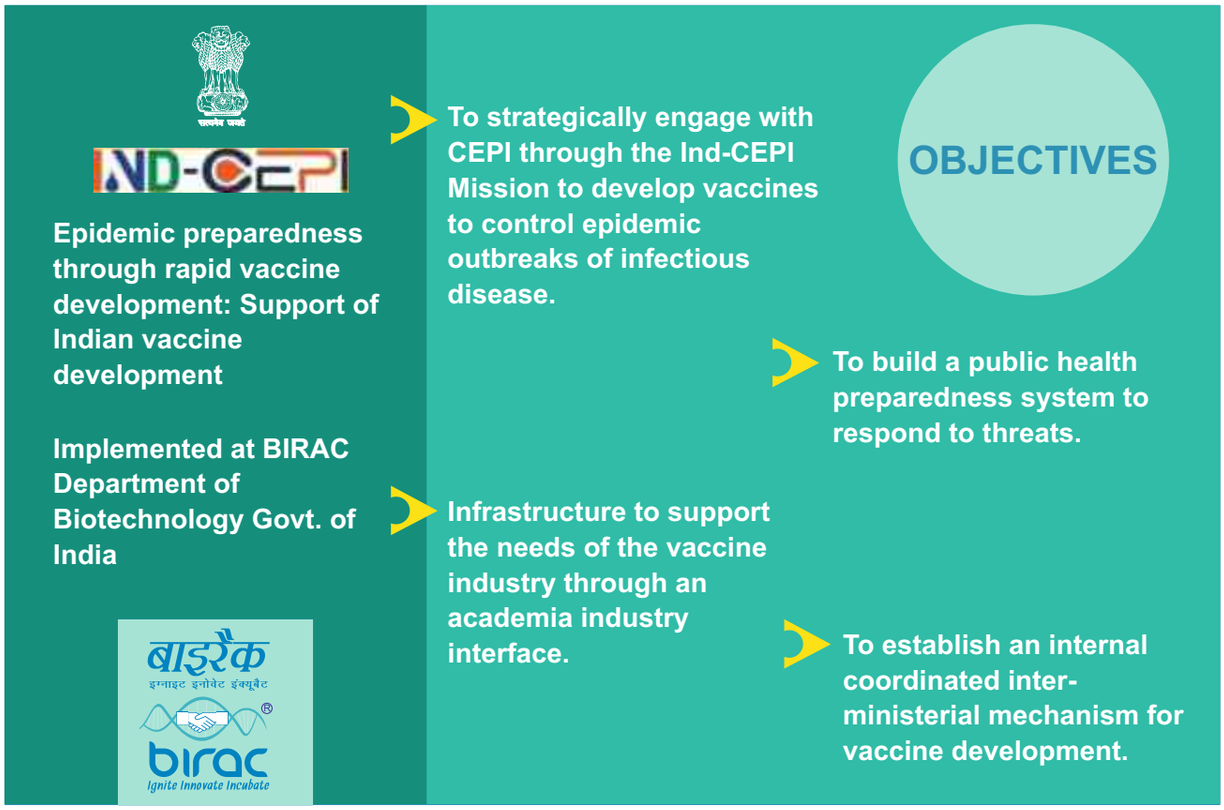
- UL-UHD-Clear View, an imaging device has been developed by Univlabs Technologies Private Limited and the product is undergoing trials in hospitals. More than 100 super speciality surgeries like Kidney transplant, gall bladder removal, and other gastrointestinal surgeries have been performed using the device.
- Healthcare technology innovation centre (HTIC) has developed a flexible video endoscope and has initiated field validation for the product.
- OmniBRx Biotechnologies Private Limited has launched their 5L single-use bioreactors for adherent cell culture and has sold about 11 units in the financial year 2021-2022.
- Liraglutide biosimilar by Levim Biotech LLP advanced to Phase III Clinical trials.
- 12 of the supported facilities under vaccines, devices and biotherapeutics are actively providing services.
- Two analytical labs – Centre for Advanced Protein Studies, Syngene International Limited, Bangalore and Entreprenureship Development Center, Pune have submitted applications for GLP certification to NGCMA.
- Funds were released to two new Translational research Consortia (TRC) which have been supported - JIPMER led Hepatitis E virus consortium and RMRC led consortium for Malaria to develop cutting edge technology platforms and leverage current capabilities to provide affordable solutions in the Indian market.
- The existing Translational Research Consortia for Dengue and Chikungunya have established serum biobanks and virus respositories with sequenced and characterized isolates of Dengue and Chikungunya. The consortia have established assays and are ready to transfer to industry/ academia and disease models as fee-for-service.

- 7 Technology Transfer Offices (TTOs) established using bioincubation network.
- 06 new Demographic and Health surveillance sites have been established under the DRIVEN Netowrk (DBT's Resource of Indian Vaccine Epidemiology Netwrok) with a pan India representation having access to urban/ semi-urban/ rural and tribal populations. More than 3,00,000 census enumeration and 50000+ land parcels have been registered till date. Data collection is being done through SOMAARTH platform. Additional 05 DHS sites are performing COVID, Dengue and Chikungunya seroepidemiology study in 25000 population cohorts distributed across India.
- 05 Clinical Trial Networks for oncology, diabetology, rhuematology and opthalmology with 36 hospitals across the country have been established. The past year saw the harmonization of SOPs across all sites of each network and establishment of online platform and database for disease Registries within these areas for vaious indications. Multricentric disease registries have been established with >2000 patient data for each disease indication. First registry report based on data from all sites is under development for publication. The hospitals have initiated investigator-initiated studies within each network.
- Workshops in the areas of clinical research, regulatory compliances, technology transfer, biopharmaceuticals and medical devices have been majorly supported under NBM. During April 2021 – March 2022 a total of 803 participants have been trained under different trainings and workshops under the National Biopharma Mission.
- Code of Conduct and Guidelines for developing Policy framework and Partner Engagement Agreements for the RTTOs have been released.
- A Practice manual consisting of best practices for RTTO operations along with directory of Registered Technology Transfer Professionals (RTTP) in India has been developed and released virtually on 04th October 2021.



Ind-CEPI

The Ind-CEPI Mission is an India centric collaborative mission of Department of Biotechnology (DBT), Govt. of India, aligned to the global initiatives of CEPI (Coalition of Epidemic Preparedness Innovations). The mission will facilitate pathways for vaccine development and assessment, developed in consultation with CEPI. The Mission aims to strengthen the development of vaccines for the diseases of epidemic potential in India as well as build coordinated preparedness in the Indian public health system and vaccine industry to address existing and emergent infectious threats in India. DBT is supporting the implementation of the Ind-CEPIs mission through a dedicated Program Management Unit (PMU) at BIRAC. The Ind-CEPI Mission was approved on 27th March 2019 with a total cost INR 312.92 crore.



Supporting Vaccine Development:

Mission Ind-CEPI is taking decisive steps towards development of key vaccine candidates and supporting the same through clinical trials. In the endeavor to provide effective vaccines, mission Ind-CEPI has supported the mRNA vaccine candidate by Gennova Biopharmaceuticals Ltd. To make the last mile delivery of the vaccine candidate more effective, vaccine candidate is designed to be thermo tolerable and can be transported at 4-8 ℃. Apart from the response to the COVID-19 pandemic, mission Ind-CEPI is also supporting the development of Chikungunya vaccine candidate by Bharat Biotech international Ltd. By the supportive action of the mission Ind-CEPI along with CEPI, our country is stepping towards delivering on yet another vaccine needed by the global community. Details of the both the vaccines supported under mission Ind-CEPI are mentioned below:

Disease Area	Platform	Title	Grantee	Endpoint
SARS-CoV-2	mRNA vaccine	Next-generation mRNA vaccine against COVID-19 to provide long-term protection to the population within its national/ international territories	Gennova Biopharmaceuticals Limited, Pune	Manufacturing of vaccine candidate, and safety and immunogenicity in Phase I/II clinical trial.
Chikungunya	Inactivated virus	Global Chikungunya Vaccine Clinical Development program (GCCDP)	Bharat Biotech International Ltd (BBIL)	GMP manufacturing of the vaccine in India and subsequent manufacture of clinical trial materials.

Skill Development:

Supporting skill development, capacity building, regional networking and development of surveillance frameworks is one of the important mandates of the Ind-CEPI Mission. Aimed at this, the Mission initiated and completed an e-Course Series “Strengthening Clinical Trial Research Capacity in Neighbouring Countries” in collaboration with CDSA, Faridabad. This training envisaged an in-depth coverage of Good Clinical Practice, Ethical considerations in clinical research, Good Clinical Laboratory Practice and Novel vaccine development and immunization policy in a pandemic across 4 Programs and 10 sessions. Each program closed with exit examinations, after which certifications were issued.

Participating Countries:

Afghanistan, Bangladesh, Bhutan, Maldives, Mauritius, Nepal and Sri Lanka, Bahrain, Bhutan, Kenya, Myanmar, Nepal, Oman, Somalia, Vietnam

Strengthen infrastructure for vaccine development- In order to strengthen infrastructure involved in vaccine development, Mission Ind-CEPI is providing necessary consultancy support for development of Quality Management System (QMS). These infrastructures supported are the immunogenicity laboratories and animal challenge study facilities supported under Mission COVID Suraksha. Currently, six facilities have been selected for the consultancy support. At the end of the consultancy support, the facilities are expected to have GLP and ISO 17025:2017 accreditation. Selected facilities have been mentioned below:

a) Animal challenge study facility at :

1. Institute of Life science, Bhubaneswar
2. Indian Institute of Science, Bengaluru
3. THSTI-NCR biotech cluster, Delhi-NCR
4. Institute of Stem Cell Biology and Regenerative Medicine, Bengaluru

b) Immunogenicity laboratories:

1. THSTI, Faridabad
2. Jawaharlal Nehru Center for Advanced Scientific Research, Bengaluru

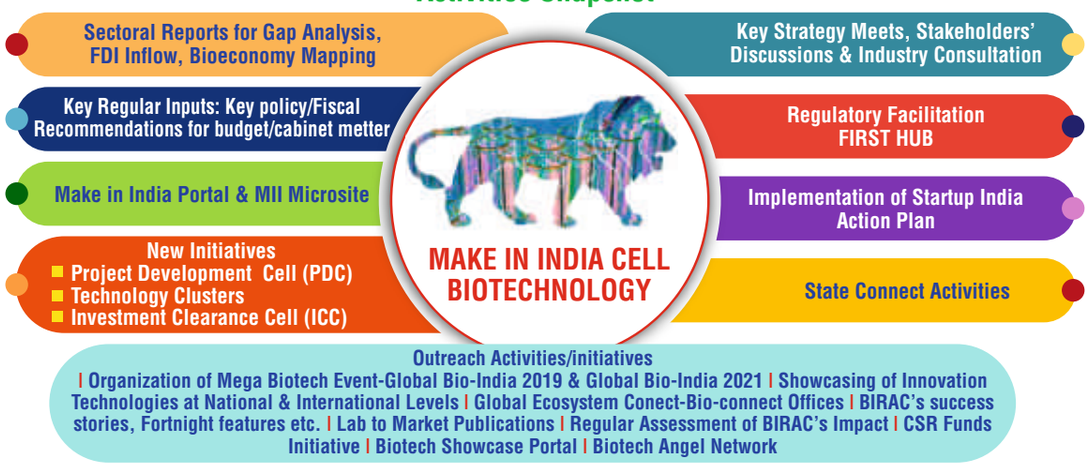
Make-In-India

The Make in India (MII) initiative was launched in 2014 by the Honorable Prime Minister of India to encourage companies to manufacture their products in India, for India and for the world. Aligned with the Make-In-India mandate, the DBT established a Make in India Facilitation cell for Biotechnology at BIRAC in 2015.

Make in India mission has introduced and prioritized multiple initiatives including Startup India to promote innovation, capacity building; strategic growth in Industrial sector, Foreign Direct Investment promotion for technology adoption and manufacturing, Intellectual Property Rights, employment generation and others. Program Management Unit (PMU) for MII at BIRAC integrates with various activities of BIRAC for promoting the Make In India mandate of the Government of India. It has successfully completed a number of activities and continues to provide following services:

- Engage and Partner with States
  - ➢ to address the challenges faced in building a strong Biotech Innovation ecosystem
  - ➢ to promote commercialization of innovative products, technologies from Biotech Startups, SMEs through potential adoption at State Level public health system, public/ private procurement.
- Providing policy inputs based on stakeholders' consultative meets
- Mapping India's Bioeconomy
  - ➢ Annual publication - India Bioeconomy Report
- Outreach events
  - ➢ National and International level participation in showcasing events
  - ➢ Facilitate access to investment opportunities for startups and SMEs in Biotech Sector
  - ➢ Examples include Global Bio India (2 Editions), BIRAC Innovators' Meet
- Global connect
  - ➢ Create and facilitate Global Startup connects to gain international expertise, regulatory guidance and access to Global Market
- Investment Facilitation for Startups
  - ➢ Implementation of AcE-Fund of Funds
  - ➢ BioAngels initiative
- Regulatory guidance facilitation for Startups
  - ➢ FIRST Hub
  - ➢ Regulatory Information Facilitation Cell

Activities Snapshot



DBT has extended MII cell activities for the next 5 years to implement high priority activities of national significance for biotech sector including

- Setting up of Project Development Cell (PDC), Investment Clearance Cell (IIC)
- Scale up support to mature startups and medium scale companies through Technology Cluster and M-zones etc.

Major activities of Make in India Cell during 2021-22:

- **Stakeholders Meeting for Telemedicine, mHealth, Digital Health Grand Challenge** to discuss key thematic areas to support 75 Innovations and structure the RFP for 'Amrit Grand Challenge – जनCARE'
- **BIRAC signed a MoU with the Department of Electronics, Information Technology and Biotechnology and Science and Technology, Government of Karnataka,** acting through Karnataka Innovation & Technology Society (KITS) on 6th August 2021 for a period of 5 years. The MoU aims at promoting biotechnology innovation ecosystem, facilitate biotech startup scaleup, promote translational research and build international collaborations for building technological competence, etc. in the state of Karnataka.
- **10th Biotech Innovators Meet- Vigyan se Vikas:** 10th Biotech Innovators meet was held on 28th Sep 2021. Hon'ble Minister, Dr. Jitendra Singh, Minister of State (Independent Charge) of the Ministry of Science and Technology and Ministry of Earth Sciences graced the event as the Chief Guest. Several key representatives from industry were also present for the interactive session with Hon'ble Minister. The event marked launch of the following:
  - Amrit Grand Challenge "जनCARE" program to identify 75 digital healthcare innovations in telemedicine, mhealth, big data, AI, blockchain etc.
  - Sectoral Reports/Publications:
    - India Bioeconomy Report (IBER) 2021 (Jan-Sep) highlighting the growth of bioeconomy
    - BIRAC's support to start-up ecosystem in the country highlighting the current status and growth perspective of India's Biotech Startup Ecosystem
    - BIRAC-BRIC Phase III report-Mapping Regional Innovation Ecosystem highlighting the outcomes of a study of regional life science innovations system in 13 clusters of India to build a deeper understanding of the ecosystem and enhance biotech innovation and entrepreneurship in the country.

Publications by MII Cell during 10th Biotech Innovators Meet

Other Reports by MII Cell released during 2021-22:

- BIRAC supported in-market COVID-19 Solutions showcasing 35 affordable BIRAC supported in-market products and technologies for Covid-19
- Global Bio-India 2021 report

Start-up India Initiative

Start-up India is a flagship initiative of the Government of India, intended to build a strong ecosystem for nurturing innovations and start-ups in the country that will drive sustainable economic growth and generate large scale employment opportunities. MII cell at BIRAC also maps and assists in implementation of the Start-up India action plan for biotech sector by BIRAC. The cell works closely with key stakeholders including Start-up India Team, Invest India, DST, MeiTY, Niti Aayog etc. for implementation of Startup India Initiative and regularly reports to the Department of Promotion of Industry and Internal Trade (DPIIT) and DBT.

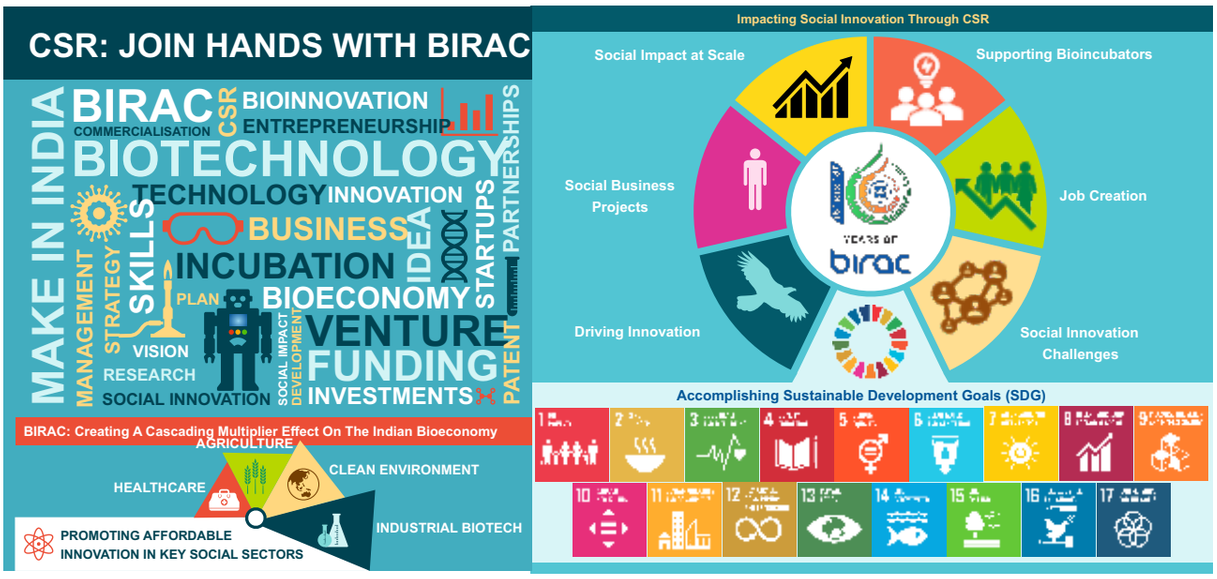
Building National Facilities	Attracting & Building Pipeline of STEM Talent	Ecosystem enablers	Contributing to Nation Building	Forging relationships
75 Incubation Centres	**10 lakh+** Students/ entrepreneurs engaged	**10,000+** Mentor Pool	**30,000+** High skilled jobs created	**100+** National & International Partnerships
75+ Calls/Challenges announced	**25,000+** Proposals assessed	**2,000+** Startups/ Entrepreneurs supported	**800+** Products in market	**1300+** IPs filed

BIRAC Nurturing & Strengthening Biotech Innovation and Enterprises

Corporate Social Responsibility (CSR) Funds

From this year, BIRAC can receive and deploy Corporate Social Responsibility (CSR) Funds for the promotion and growth of Biotech Innovation Ecosystem. All approvals & processes have been put in place. First receipt of CSR Contribution has been realized. Stryker Corporation and BIRAC have partnered to support digital health innovations under the BIRAC Amrit Grand Challenge – "जनCARE""Reimagining the Healthcare Delivery - Touching a billion lives'programme.

BIRAC looks forward to associating with more corporate entities aligned with a mandate to promote and strengthen the biotech entrepreneurship ecosystem utilizing CSR Funds.



Partnerships

National Partnerships

BIRAC-TiE (The Indus Entrepreneurs)-Delhi NCR

BIRAC has partnered with TiE-Delhi NCR to leverage partner's strengths for business mentoring of biotech start-ups and providing a continuous platform to interface with investors. Under the umbrella of this partnership, BIRAC and TiE jointly organize of the following activities annually:

- **BIRAC –TiE Women In Entrepreneurial Research (WInER) Award**

  BIRAC TiE WInER Award is a dedicated award to reward and recognize women entrepreneurs in the Biotech sector. This is the only dedicated program from BIRAC for recognizing women entrepreneurs. Under this national award programme, 15 women entrepreneurs working on innovative ideas with societal impact are awarded INR 5 lakhs each; provided access to accelerator programme for mentoring, and hand-holding. After the accelerator program, the 15 contestants compete through Business Pitching for an award of INR 25 lakhs each to 3 final winners. So far, 45 awardees have been felicitated through 3 successful editions of WInER Award.

- **BIRAC-TiE Entrepreneurship Awareness Workshops**

  BIRAC and TiE conduct nationwide Entrepreneurship Awareness Workshops especially for non-metros, tier 2 cities that has seen participation from thousands of students. Some of the states & cities covered include Roorkee, Dehradun, Lucknow, Jaipur, Jammu, Shimla, Patna, Ludhiana, Kolkata and Kerala.

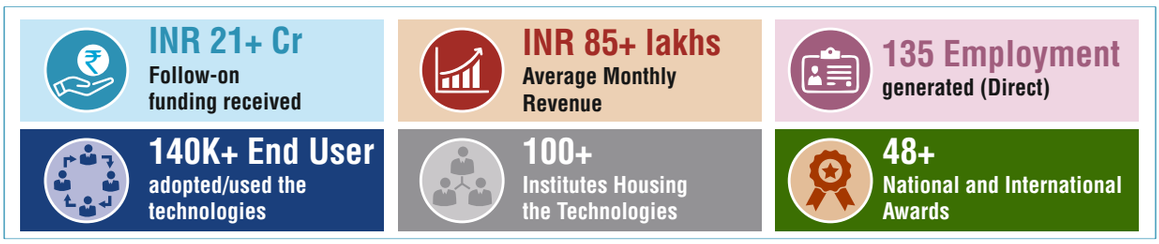
During FY 2021-22, BIRAC partnered to support at Unstoppable India: TiEcon Delhi-NCR, TiE's annual flagship event with a leadership talk on "**Biotech - A Sunrise Sector: India Progressing to become Global Biotech Innovation Hub**".

BIRAC-ICMR (TATA Trust's Foundation for Innovation and Social Entrepreneurship-Social Alpha)

BIRAC joined hands with Social Alpha to launch the 'BIRAC-Social Alpha Quest for Assistive Technologies–supported by Mphasis' in June 2019 with a view to identify start-ups working in the Assistive Technology sector. The 14 winning start-ups offering assistive technologies solutions for speech and hearing impairment, locomotor disability, visual impairment and intellectual disability for children and adults were supported with market access, clinical Trials/validation, and Design for manufacturing support.

13 startups have reached market and commercialized.

Key Achievements of the 14 startups:



14 Indian Awardees of BIRAC-Social Alpha Quest for Assistive Technologies Supported by Mphasis

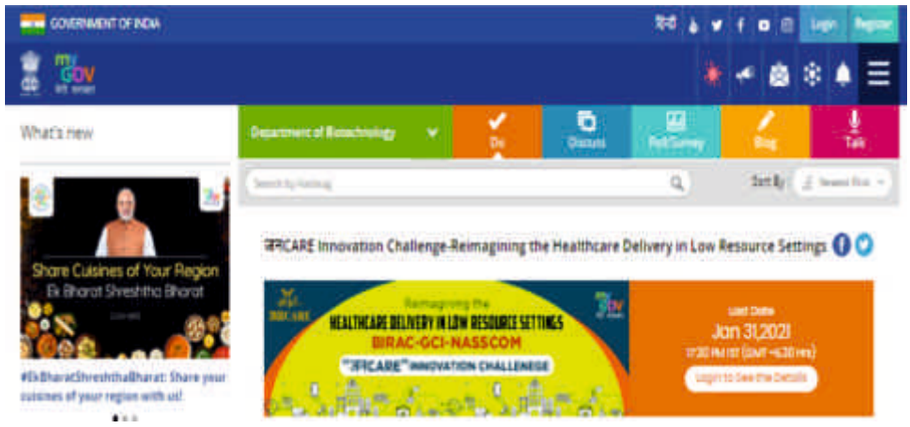
जनCARE Innovation Challenge-Reimagining the Healthcare Delivery in Low Resource Settings

BIRAC and NASSCOM in collaboration with Grand Challenges India (GCI) launched "जनCARE" Innovation Challenge in December 2020 to discover, design and scale health-tech innovations that can work in low resource-settings especially in the areas of Cardiovascular Diseases, Maternal & Childcare, Diabetes, COPD, Cancer care, Eye care, and other NCDs. Up to 25 Healthtech solutions from startups were provided pilot test beds in collaboration with State Governments & Industry to help their validation and scale up for adoption.

The "जनCARE" Challenge program is an industry-wide collaborative effort; AstraZeneca, GE Healthcare, Siemens Healthineers, Medanta Hospitals, St John's Research Institute, Health Care Global Enterprises and TATA AIG have joined hands to provide their support and mentorship to the participating Start-ups till the end of pilot phase.

Winning 16 start-ups came from the four major therapeutic sectors: Chronic Pulmonary Obstructive Disease (COPD); Cancer; Mother and Childcare (MCH); and Non communicable diseases & Telemedicine. Technology Innovations were bundled as one lead innovation and upto 4 complementary innovations that would together offer a comprehensive package of technologies for the particular therapeutic area(s). The lead innovation received INR 5 lakh award and the complementary innovations INR 2 lakh award each. Field validation studies for most of the awardees have been carried out across 8 states successfully.

Speakers addressing the audience at the Launch of जनCARE Innovation Challenge



Launch of जनCARE Innovation Challenge at MyGov portal

BIRAC Innovation Challenge Award-SoCH

BIRAC in association with knowledge partner Social Alpha and BIRAC's Bio-NEST Incubator partner Clean Energy International Incubation Centre (CEIIC) launched 2nd call of BIRAC-Innovation Challenge award-SoCH (Solution for Community Health) in March 2020. The challenge is envisioned to identify and facilitate Indian innovators offering clean cooking solutions with national and global relevance. Proposals were invited in the areas of Biomass, Electricity, LPG, Solar and Biogas based cooking solutions on **MyGov/BIRAC online portal.**

Launch of BIRAC-Innovation Challenge Award-SoCH 2020-21

5 Finalists were selected on the basis of the prototypes developed and the controlled field trials. Each was awarded with a grant prize of INR 10 Lakhs each for product development, designing & fabrication, selection of top 2 winners will be done on the basis of the final products developed and the user acceptance trials.

Wadhwani Initiative for Sustainable Healthcare (WISH) Foundation

BIRAC partnered with WISH Foundation for leveraging its network and to field validate BIRAC supported innovations in primary healthcare centres through state governments. The first hand local experience at the PHCs would help to create a pipeline for the state governments to systematically induct promising and high impact innovations on continuous basis.

Eight (8) technologies/products have been validated under the Partnership so far. As an outcome of the studies, 8 white papers along with recommendations of the studies were handed over to the innovators.

BIRAC supported eight (8) innovations supported under BIRAC-WISH Program

International partnerships

IGNITE

BIRAC has partnered with Judge Business School (JBS) at University of Cambridge for the IGNITE Programme that provides international mentoring opportunity to young innovators supported through BIRAC's BIG program. IGNITE is a weeklong residential training program that enables early-stage start-ups to develop international entrepreneurial flair and skills needed for successful translation and commercialization of innovations. Every year, 5 BIG start-ups are selected and supported to attend the IGNITE program at JBS, Cambridge, UK. So far, 39 BIRAC supported start-ups have benefitted from the programme

NESTA

BIRAC has collaborated with NESTA, a UK based innovation charity organization, for creating a pipeline of innovators for the Longitude prize, in the area of anti-microbial resistance (AMR). Longitude prize is an initiative of NESTA focused on finding solutions to help tackle the problems in the AMR domain. Two calls have been announced under NESTA discovery program. In order to build successful collaboration between BIRAC and NESTA the 3rd round of BIRAC NESTA discovery award funding (BIRAC-DAF) is awarded in the form of BIRAC NESTA boost grants. Purpose of these grants were to ensure that the strongest Indian teams have the financial support necessary to complete their projects and to be potential candidates for the Longitude Prize.

Three teams (NanoDx, Module Innovations & OmiX in Collaboration with Spot sense) were awarded in first round of under the BIRAC boost grant. The three proposals focuses on developing rapid and & point of care diagnosis of uropathogens causing urinary tract infection (UTI), point-of-care diagnostic device for rapid identification and stratification of bacterial septicemia in critically-ill patients and detecting urinary tract infections. The projects have been evaluated for their completion work recently. Usense developed by Module Innovations has developed a credit card size test, which detects four major uropathogens in a single test and Omix and Spotsense are using voltametric detection of bacteria as the first step of 15 minutes to determine urinary tract infections.

Networking events

Every year, BIRAC organizes and participates in various Biotech innovations related events that provide networking & showcasing opportunities to the BIRAC supported startups. This year, BIRAC organized two major events: 10th Innovators Meet and the first national Biotech Startup Expo 2022 to celebrate 10 years of BIRAC.

BIRAC's 10th Innovators Meet:

BIRAC hosted its 10th Biotech Innovators Meet on 28th September 2021 through a virtual platform under the Azadi Ka Amrit Mahotsav banner recognizing the theme 'Vigyan se Vikas'. Dr Jitendra Singh, Union Minister of State (Independent Charge) Science & Technology launched the "Amrit Grand Challenge Program" titled "जनCARE" to identify 75 Start-Up Innovations in Telemedicine, Digital Health, mHealth with BIG Data, AI, Block Chain and other technologies. Dr Renu Swarup, then Secretary DBT and Chairperson BIRAC; Ms. Anju Bhalla, then Managing Director, BIRAC along with other senior officials from BIRAC and DBT were also present during the event.

Dr. Singh, during his remarks, lauded the efforts of BIRAC and DBT to nurture the innovation ecosystem and contribution towards Atmanirbhar Bharat. He acknowledged and expressed appreciation that several Medtech industries, hospitals, investors, incubators and other stakeholders have partnered for this mission. Four publications were released during the Innovators Meet- BIRAC's Impact Report; Indian Bio-economy Report 2021; Make in India Brochure; BIRAC-BRIC Phase-3 Report.

Interaction between Hon'ble Minster and the start-ups was another important feature of the conclave. 15 representative startups from different domains such as Agriculture and allied areas; Covid Response; Industrial Biotechnology, Clean Energy & Environment; Medtech, and Startups led by Women Founders presented their achievements during the interaction.

Biotech Startup Expo 2022:

BIRAC and DBT organized the first ever National Biotech Start-up Expo from 9-10 June 2022 at Pragati Maidan, New Delhi. This event was a part of 10 years celebrations of BIRAC's enabling efforts towards progressing India's Biotech Sector. Department of Promotion of Industry and Internal Trade (DPIIT), Department of Science and Technology (DST), and the Ministry of Education joined hands for the event.

The two-day **Biotech Startup Expo** was inaugurated by the **Hon'ble Prime Minister Shri Narendra Modi.** The event was graced by Union Ministers Shri Piyush Goyal, Shri Dharmendra Pradhan, Dr Jitendra Singh, as well as biotech industry stakeholders, specialists, SMEs, and investors. The two-day event was a congregation of biotech stakeholders across the country. The theme for the event was "Biotech Start-up Innovations: Towards AtmaNirbhar Bharat".

Hon'ble Prime Minister addressed the gathering and highlighted the importance of biotech start-up ecosystem. He mentioned that India's bio-economy had risen eight times during the last eight years and that it is inspiring that India has grown from $10 billion to $80 billion bio- economy. He also asserted that India is not too far from reaching the league of Top-10 countries in the Global Ecosystem of Biotechnology. He also expressed immense faith in the biotech sector of the country and lauded the efforts of BIRAC in enabling and empowering the biotech start-up ecosystem while inaugurating the Biotech e-portal of 750 Biotech Products. The inaugural event was live streamed and joined by 75 universities across the country.

Day 1 of the Expo featured a high-level panel discussion that explored the future trajectory of the Bio-economy in the Biotech sector and the action plan for vision @2047. The session was moderated by Dr. Rajesh S Gokhale, Secretary, Department of Biotechnology who outlined the action plan for vision @2047. The session saw participation of key policymakers and eminent researchers who provided views on the future trajectory of the Bio-economy in the biotech sector.


The Expo included booths by Biotech Startups and Bio-incubators and was open to the general public to explore the products and infrastructure being created by the country, for the country. The audience consisted of leaders from the biotech industry, start-ups, students, entrepreneurs, researchers, stakeholders, specialists, SMEs, and investors.

The luncheon CEO stakeholders' roundtable meeting, chaired by the Secretary, DBT, Dr Rajesh S Gokhale deliberated on the major bottlenecks faced by the industry and possible solutions to facilitate the growth of the Indian bio-economy.

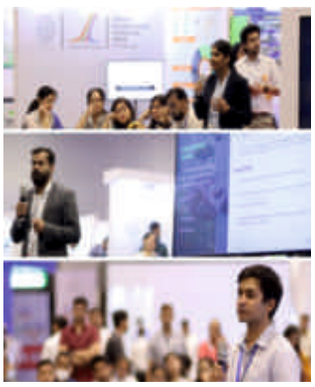
The event served as a mega platform for B2B Meetings, Interaction of Start-ups along with peer-to-peer learning with renowned universities, research institutions, Investors, Manufacturers, Vendors, Industry, Scientists, Research Institutions of DBT, CSIR, ICAR, DST, IIT, NIPER, NISER, IISER and others including private academic institutions.

The second day of the expo saw B2B meetings along with the Startup pitching sessions. The innovators pitched in front of corporate leaders, manufacturers, investors, business mentors. Industry representatives from ABLE, CII, FICCI, FSII, AiMed, Academic directors & professors, and business mentors (TiE) were also a part of the pitching session.

The Hon'ble Minister Dr Jitendra Singh released two publications:

- **75 Biotech products developed during the 75th year of independence**
- **Compendium of 75 Women Biotech Entrepreneurs**

Hon'ble Minister Jitendra Singh talked about how India has moved from women-specific to women-led projects. The event concluded with a session on the experience shared by a Unicorn, wherein Mr. Harsimbhar Singh, Co-founder, Pristyn Care shared his startup journey.



In addition, BIRAC participated in the India International Science Festival (IISF 2021) and Bengaluru Tech Summit 2021 during the FY 21-22.

Outreach Initiatives

Communications

The Legal Cell of BIRAC provideThe BIRAC communication team provides support to the various departments and verticals and is in charge of conveying the organization's activities to a wide range of people, including innovators, scientists, academicians, policymakers, stakeholders, investors, and others. The Communications Team at BIRAC is responsible for promoting the brand presence of BIRAC through a variety of platforms: digital, print, and social media. The team regularly contributes to content on social media platforms and closely works with the DBT- Communications team for press releases and other event-related and outreach activities. BIRAC has been at the forefront in the times of COVID and several press releases have been done in regards to potential covid solutions and vaccine efforts to inform the media and further the masses at large.

BIRAC participated in a number of virtual events and webinars around the year to interact with the target audience and to aware people of various programs and schemes under BIRAC. Some of the events were: **Vaccine Webinar, Launch of BIRAC E-office, Launch of Amrit Grand Challenge-JanCARE, SPARSH Fellows-Graduation Day & Investors Meet, Bengaluru Tech** Summit-2021, IISF 2021 and more. The communication team actively supported the virtual edition of the 10thBiotech Innovators Meet and 4thLeadership Dialogue Series and various other events. The communication team managed the pre- and post-event activities along with the social media outreach and press releases.

For the year 2021-22, the team worked on a weekly social media campaign-**Lab 2 Market BIRAC-supported innovations commemorating the Azadi ka Amrit Mahotsav** and the idea2Market campaign-Cultivating Innovation: Assistive Technologies. The teamis also working on the- 75 Biotech Start-up Products celebrating the **75 Years of Independence which highlights the BIRAC-supported innovations.**

A quarterly publication of BIRAC Newsletter i3 which features cover stories, expert opinions, innovator opinions, BIRAC events, and program updates. This year's publication touched upon various themes centered around how BIRAC has been at the forefront in the fight against the pandemic.

Success Stories

Major Awards and Recognition received by BIRAC supported Startups

BIRAC has supported close to 2000 startups & entrepreneurs. These startups' success has been recognized at national as well as international level. The number of such startups is increasing with each passing years. These success stories have created a distinct global footprint bringing acknowledgement for the Indian biotech startup ecosystem. This section covers the achievements and highlights of BIRAC supported beneficiaries in terms of the following:

- Awards and Recognitions
- Private Funds raised by startups
- Products/technologies commercialized

Awards and Recognitions

Niramai

Global Women's Health Tech Award
by
World Bank Group and Consumer Technology Association

HealthSensei

Stanford Seed Spark Program 2nd Position

InnAccel

Global Women's Health Tech Award
by
World Bank Group and Consumer Technology Association

Janitri

12th IOT/WT Innovation World Cup
Healthcare Category
Innovation World Cup® Series & Wearable Tech

Landorum

The Frost Sullivan MEASA Best Practices Award
Technology, Innovation, Leadership Catego

Biomoneta

Women Entrepreneur of the Year
at
Smart BioAwards, Bengaluru Tech Sum

Robo Bionics
#aHandForIndependence

National Startup Award 2021
Health and Wellness Sector
Medical Devices Category

REVY Environmental Solutions
Committed for a Greener Earth!

• National Startup Award 2021
Environment Sector
Industrial Biotechnology Category, Department for Promotion of Industry and Internal Trade
• BRICS Women Innovation Award

HUNEL LIFESCIENCES PVT.LTD

SR Business Entrepreneurship Award 2022

ZerOPlast

AICISB Grand Ideal Challenge 2021
Agriculture Category

BIOSCAN RESEARCH

• TiE50, Silicon Valley's Premier Award
• MedTech Innovator Asia Pacific, 2022

2021 Transformational Social Enterprise Award
Healthcare sector
TiE Sustainability Summit

Flic Farm Pvt. Ltd.

Selected in Top 500 list of Food Tech 500
List of Global Entrepreneurial Talent at The Intersection between Food, Technology and Sustainability

ACSEN
HYVEG

Best Vegetable Seed Company Award
Agri Business Summit & Agri Awards-2021
Best Seed Testing Laboratory Award
Agriculture Today Group 2020-21

National Award
Coconut Development Board of India, 2022

Mallipathra Nutraceutical Pvt Ltd.

National Award
Technology Startup Award Category of 2022
Technology Development Board
Department of Science & Technology

String

Inked a deal with Australia's Woodside Energy to produce sustainable protein ingredients from green house gases

SALCIT

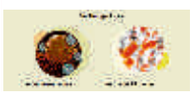
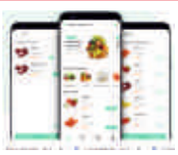
Received funding from the UK Government (British High Commission, New Delhi) to Conduct Swaasa Validation Study

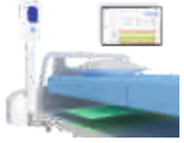
• National Medical Device Startup Grand Challenge Award
Department of Pharmaceuticals, Govt of India
• National Award for Top IP and Commercialization, 2021, Govt of India

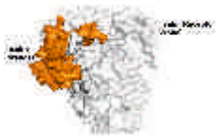
National Startup Award, 2021
Agriculture Sector
Post-harvest Category

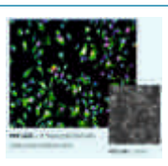
Startup Award, 2021
Technology Development Board
Department of Science & Technology

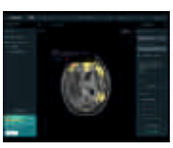
Follow-on-funding raised by BIRAC supported Startups during FY 2021-22

GPS Renewables is a waste-to- energy technology company pioneering in the development of clean and low cost technology for waste management solutions.	Bugworks develop affordable, accessible, novel therapies against infectious disease and cancer.	Vegrow is a tech platform partnering with farmers, aggregating supply and selling to organize demand through partnership.	VnF is a precision agriculture platform that leverage data to pick the finest produce from the best partners and deliver it to your doorstep. It monitors every stage of Farm to Food to derive synergies for our customers and partner ecosystem.	Sugarfit works for diabetes reversal in sustainable way. Their research-driven treatment plan includes innovative technology, compassionate diabetes experts and personalised plans.	Sea6 Energy is a seaweed technology company that has developed a proprietary cultivation mechanism called the SeaCombine, which can simultaneously harvest and replant seaweed in deep ocean waters, enabling cost-competitive production at scale.
Funds raised **INR 150 Cr**	Funds raised **INR 144 Cr**	Funds raised **INR 97 Cr**	Funds raised **INR 82.68 Cr**	Funds raised **INR 74.30 Cr**	Funds raised **INR 67 Cr**
					

KRISHIFY	Pandorum	ImmunoACT	BharatAgri	ZUMUTOR	dozee
Farmstock Technologies uses state-of-the-art Artificial Intelligence technology to extract valuable insights from the ground & help companies connect with the farmers directly.	Pandorum Technology is a tissue engineering & regenerative medicine company that designs therapeutic products, with an aim to alleviate health conditions of patients suffering from corneal dystrophies, lung related disorders and liver diseases.	ImmunoACT has indigenously invented the Novel Humanized CART therapy which is in advanced stages of human clinical trials for certain types of cancers, more specifically Acute Lymphoblastic Leukemia (ALL) and Diffused Large B Cell Lymphoma (DLBCL).	BharatAgri is a farming technology platform that aims to bridge the gap between technology and agriculture in India with a vision to reach out to maximum Indian farmers.	Zumutor is a next generation Tumor-Directed Immuno-Oncology (IO) therapeutics company driving transformational change by harnessing the power of NK cells.	Dozee offers contactless remote patient monitoring solutions and is a pioneer in Patient Monitoring and AI-Based Early Warning System.
Funds raised **INR 66 Cr**	Funds raised **INR 59 Cr**	Funds raised **INR 56.75 Cr**	Funds raised **INR 47.70 Cr**	Funds raised **INR 46.46 Cr**	Funds raised **INR 44 Cr**
					

voxelgrids	Future Cure Health Private Limited	SIRONA	clensta	SEKKEI
Voxelgrids has developed multiple technologies related to MRI scanners based on custom cryogenics and innovative electronic design.	Future Cure Health is the World's first chain of Dizziness and Balance disorder clinics and uses a DeepTech remote diagnosis platform for super-specialty healthcare.	Sirona Hygiene is creating products and driving conversations around the feminine hygiene problems.	Clensta is a Direct-to-Consumer (D2C) and home care products startup, initially focusing on waterless technology (waterless body bath and shampoo) to enable bathing without the use of water.	Sekkei Bio is building cutting-edge technologies for design of drugs & vaccines towards global impact.
Funds raised **INR 35 Cr**	Funds raised **INR 30.40 Cr**	Funds raised **INR 22.50 Cr**	Funds raised **INR 20 Cr**	Funds raised **INR 15.01 Cr**
				

Freshokartz Agri reengineers the Indian agriculture to support farmers and boost productivity with innovative products, agri specialist and education platforms.	CyGenica provides proprietary technology, which enables safe, targeted and affordable intercellular drug delivery.	BonAyu Lifesciences offers a platform for oral delivery of herbal, nutraceutical actives and food supplements. It provides development of novel, innovative, bio-degradable proprietary delivery for health supplements and cosmetic applications.	Redroom is a manufacturer of wide spectrum menstrual cup, intimate wipes, sanitary pad etc.	Eyestem is a cell therapy company with long-term vision to create a scalable cell therapy platform to treat incurable diseases.
Funds raised **INR 10 Cr**	Funds raised **INR 10.51 Cr**	Funds raised **INR 9.76 Cr**	Funds raised **INR 7.50 Cr**	Funds raised **INR 7.00 Cr**
				

Farmers Fresh Zone is a leading consumer brand for safe and fresh fruits and vegetables grown locally. The company aims at unlocking access to safe-to-eat and pesticide free products.	BrainSightAI combines artificial intelligence and neuroscience to enable greater precision in neurological and psychiatric investigation for accelerated patient outcomes.	GreenPod Labs provide cost-effective post-harvest solutions to extend the shelf life of fruits and vegetables during storage and transport.	MediSim VR works on healthcare stimulation. It focuses on making comprehensive Virtual Reality medical simulation more accessible.	ComofiMedtech works on patented surgery intervention platform, nGuide, which can help surgeons visualize the target area in great detail. It provides sustainable, reliable, and efficient solutions.	Astrek Innovations develop cutting edge solutions for Disability and Rehabilitation using assistive technology, robotics, machine learning and motion capture.
Funds raised **INR 6.00 Cr**	Funds raised **INR 5.63 Cr**	Funds raised **INR 4.05 Cr**	Funds raised **INR 3.50 Cr**	Funds raised **INR 2.15 Cr**	Funds raised **INR 0.75 Cr**
					

Biodesign Innovation Labs works on portable and affordable life saving innovations to solve global ventilator shortage.	Padmaseetha Technologies creates global solutions for renal healthcare through unstinted research and frugal innovation.	Synthera Biomedicals provides therapies for tissue repair and regeneration.	MedPrime Technologies produces customer-centric solutions for healthcare needs.	Muse Diagnostics produces advanced, affordable and connected devices for a variety of healthcare needs.	Fibroheal woundcare offers solution for healing acute and chronic wounds using silk and silk proteins.
Funds raised **INR 0.37 Cr**	Funds raised **INR 0.25 Cr**	Funds raised **INR 0.15 Cr**	Funds raised **Undisclosed**	Funds raised **Undisclosed**	Funds raised **Undisclosed**
					

Products/Technologies launched/commercialized in 2021-2022

Incredible Devices Private Limited

Advanced Reprocessing System

ARS (Advanced Reprocessing System) is a device which safely reprocesses essential medical devices like ventilator expiratory parts used on COVID Patients to ensure doctor & patient safety. COVID-19 patients need to be put on life supporting system such as Ventilators. There are multiple reusable/Single Use items required to operate a ventilator which need to be reprocessed. ARS resolves all challenges related with manual reprocessing.

Warrior Coatings are Nanotechnology based product which is 99.9% effective on vide range of pathogenic Microorganisms including Virus. The product is tested & certified from different government bodies like National Forensic Science University, Shree chitratrimul Institute. The product is Non-toxic to humans and has 99.9% killing rate of pathogenic microbes. The coating works 24*7 and neutralizes the microbes which come in contact with this coating. The Coatings are extremely cost effective and are ideally suited in wide situations, surfaces and environments and are available for all kind of surfaces.

Reinste Nano Ventures Private Limited

Warrior Anti-Viral & Antimicrobial Coatings

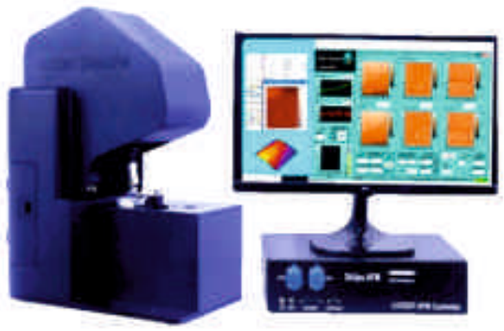
Azooka Life Sciences LLP

Tinto Rang RNA & DNA Food grade Dyes

Azooka Life Sciences, has announced the discovery of tinto rang, a patent-pending, food-grade nucleic acid gel stain. The focus of Azooka is to develop safe DNA/ RNA fluorescent stains for applications in biological sciences and genomics. tintorangTM is the first ever food-grade nucleic acid gel stain making it the safest option currently available in the world.

LUCENT™ AFM is an Atomic Force Microscope that holds unique combination of AFM with Laser Scanning Microscopy for correlational imaging, newer insights and faster results. LSM can quickly identify minute sample details in millimeter scans for AFM to map at the nanometer scale.

Shilps Sciences Private Limited



Lucent Atomic Force Microscope with Laser Scanning Microscope

Qawach Bio Private Limited

15-minute Point-of-care Confirmatory Test for Detection

The current confirmatory diagnosis for COVID-19 is based on RT-PCR. Such tests also have a high turn-around time, i.e. around 2 hrs to give results for a single sample, and also need sophisticated laboratory infrastructure and skilled manpower for its working and interpretation. QAWaCh Bio proposes an alternative to RT-PCR. They have developed a point-of-care antigen-based test, that detects viral load in the suspected population using monoclonal antibodies against spike protein of SARS CoV-2. The test is based on paper technology. The test strip has antibodies against sub-unit 1 and 2 of the spike protein of SARS CoV-2 immobilized on its surface. When viral load is present in the nasal or serum sample, the virus gets captured by these antibodies and gives positive results by indicating a visual colour change. This test does not require any electric power or lab infrastructure for working and gives results within 15 minutes.

Sohum Innovation Lab develops market-driven solutions to improve the health and incomes of people living in resource-poor settings. Sohum hearing screening, is a unique system solution to screen newborns for hearing loss in global resource-poor settings to prevent speech loss

Sohum works with Maternity Homes, NICUs, Neonatalogists, Pediatricians, ENT specialists, Cochlear Implant Surgeons, Audiologists, NGOs, Government programs, Investors, Philanthropists, CSR, Professionals, and Students to achieve the goal of screening every newborn for hearing ability.

Sohum Innovation labs India Private Limited

An advanced improved screening algorithm and system by Sohum Innovation labs India Private Limited

Janitri Innovations Private Limited

KEYAR

KEYAR is an affordable, easy to use and wearable fetal heart rate and uterine contraction monitoring device which communicates with DAKSH - An Intrapartum monitoring mobile application

It is a portable FHR, MHR & UC monitoring device which is a combination of a handheld unit and an adhesive patch that can be placed on the abdomen of the pregnant woman. It is completely portable and belt-less which allows patient mobility. KEYAR along with the Daksh platform, auto interprets patient graph files through intelligent analysis and provides important parameters like baseline, accelerations, decelerations, STVs and LTVs.

A molecular biotech company specializing in the development of Real-time quantitative PCR (qPCR) assays for rapid and affordable diagnosis of disease and research in life sciences. Yaathum Biotech offers a full range of research services, custom designed within the area of real-time PCR (qPCR), nucleic acid extraction, and related technologies for analysing genetic material.

Yaathum Biotech Private Limited

Components & Master Mix

Yaathum Biotech Private Limited

RT-PCR Kit for COVID-19

An indigenous real-time RT-PCR based molecular diagnostic test to detect the SARS-CoV-2 virus; the virus that causes COVID-19 in upper and lower respiratory specimens. The assay is designed for the detection of nucleic acid from SARS-CoV-2 in 2 hours and at a fraction of the current cost of testing. It comprises three primer sets and 3 probes that target 3 regions in genomic RNA of SARS-CoV-2 and primer and probe set for RNAse-P internal positive control.

Nano-sized diamonds, embedded in helical blades mean longer life, significantly smoother cavities and minimal microleakage of restorations. This means better patient comfort and better prognosis. Nano crystalline synthetic diamond film grown on helically bladed carbide burs for significant enhancement in bur performance, superior finesse, cavosurface integrity, efficiency and longer life.

Piscium Diamond Bur works 3 times longer and has delivered cavity smoothness up to 7 times smoother than its imported peers who control the current Indian market. Nanotechnology based Piscium® Alpha Nano Diamond Bur is capable of working in conditions of real life clinical practice on modern high-speed air rotor handpieces rotating at 250,000-400,000 rpm.

Piscium Health Sciences Private Limited

Nano Engineered Dental Burs

Truce Consulting Services Private Limited

TurnPlus by Truce Consulting Services

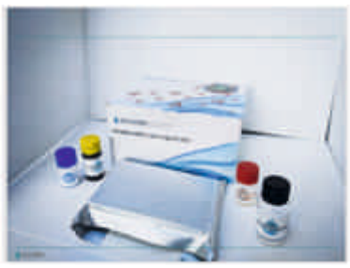
TurnPlusis an easy to install, swivel seat mechanism which is fitted under the existing bucket seat of your car. It offers easy entry & exit into the front seat of a passenger car, for people with special medical conditions like, arthritis, knee & back issues, etc.The product costs around INR 45000 which includes installation & transport with 3-year warranty. More than 100 units have been sold so far.

Antlia is a Forced Oscillation Technique (FOT) based system for the clinical evaluation of the respiratory system under tidal breathing conditions. Antila is PC operated, non-invasive device for evaluation of pulmonary diseases related to Central and peripheral airway. Antlia based lung test is simple and requires only passive co-operation with no forced expiratory manoeuvres. The Company has an ISO13485 certified facility and USFDA is in process. The product has been launched in Pulmonary Conference in Varanasi.

Caltech Innovations Private Limited

Antlia-Pulmonary Diagnostic Device

Achira Labs Private Limited



ELISA kit for IgG/IgM estimation

An ELISA based kit for IgG/IgM estimation has been developed. The kit has been extensively validated and the Company has obtained the Manufacturing License for the same.

Salcit Technologies Private Limited

The product functions as PoC Software as a Medical Device (SaMD) for instant evaluation of respiratory health as an equivalent of home monitoring for blood glucose and blood pressure. Swaasa is the Google Photos for cough sounds; and can identify underlying respiratory lung conditions by analyzing a 10 second solicited cough sound recording. Swaasa's cost-effectiveness, ubiquity and immense scalability make it the perfect tool to screen, diagnose and monitor for respiratory diseases.

SWAASA: AI Platform for Respiratory Assessment

Kornerstone Devices Private Limited

CT Guided Needle Navigation Device

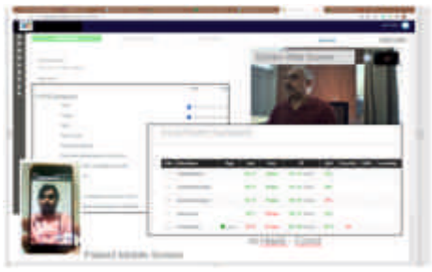
The primary intend is to assist and to offer light & shadow based angular guidance Orbital &Cranio Caudal to place the needle on targets within the body with precision. They used a venerable idea, much like the sundial, and take advantage of shadows to guide the needle angulation.

SHIRA Medtech Private Limited

They have developed world's first microvascular clamp that everts the vessel lumen for facilitating an easier and faster process for vascular anastomosis in vasculature of all sizes. The unique 3-jaw design of the Shira Microvascular Clamp makes anastomosis much easier by preventing unintended backwall suturing and the need for assistance.

SHIRA Microvascular Clamps

Ubiqare Health Private Limited



Healthcare platform with Clinical Intervention support

Ubiqare's marketed platform was modified and adapted to support COVID workflows and scale of care operations. Built the Back-end, IT Support, Admin Dashboard, Self-registration, Configurability etc specifically to suit COVID-19 work flow was developed. Deployed at one hospital and few districts in and around Bangalore. Platform is named as m-Haas.

SpiroPRO is an advanced Monitoring System to Monitor Daily Lung Health Conditions of High-Risk Patients for Actively Verifying Fever, Other Respiratory Symptoms and Lung Capacity Which Can Lead to Increase in Susceptibility Towards Covid 19 Virus.

It is a handheld AI powered connected digital spirometer device used for diagnosis and monitoring of respiratory ailments. SpiroPRO's CDSCO approved tests are accurate to laboratory standards and provides with crucial real-time data about lung health.

Briota Private Limited

Spiro PRO

Imgenex India Private Limited

SARS CoV2 COVID-19 Proteins and Antibodies for Serological Tests

Imgenex aimed at the development, commercial manufacturing and market launch of a) COVID-19 recombinant antigens (N and S1-RBD) in bacterial and mammalian expression Systems at the scale of 1 gm per month, and b) monoclonal and polyclonal antibodies (Nucleocapsid, S1-RBD) at the scale of 100 mg per month against structural proteins of SARS-CoV2.

Production at a commercial scale for both the antigens and antibodies got established and achieved early sales through the company's marketing branch AbgenexPvt. Ltd. During the project the company sold 100 mg of three antibodies (Anti-nucleocapsid, anti-Spike S1 antibody) to diagnostic companies and received committed purchase order of 100 mg antibodies per month for a year.

Development and promotion of local fungal strains of tea ecosystem for the management of tea pathogens and insect pests with special reference to Darjeeling: An Innovative Non-Chemical Approach-Varsha Bioscience and Technology India Pvt Ltd. and Tea Research Association have developed local strains of Trichoderma spp, Beauveria spp and Metarhiziumspp for the management of fungal phytopathogens (Fusarium solani and Poriahypobrunnea), tea mosquito bug (Helopeltistheivora) and Red Spider Mite (Oligonychuscoffeae) respectively. Formulation of Wettable Powder (WP) and Aqueous Suspension (AS) were both made for each collaborator developed initially the WP formulation and subsequently AS formulation. Based on the storage, stability and efficacy of the formulation the Lead Institute and Industry Collaborator have decided to promote AS formulation mainly.

Varsha Bioscience and Technology India Private Limited

Fungal Bio-pesticide formulations for Tea Estates

Aspartika Biotech Private Limited

Omega 3 Fatty Acids based products and nutraceuticals using Supercritical fluid extraction technology by Aspartika Biotech Private Limited

The company has worked on project “Production & Commercialization of Omega 3 Fatty Acids based products and nutraceuticals using Supercritical fluid extraction technology”. The project resulted in source of omega 3 fatty acid which is 50% cheaper and 10% richer in omega 3 fatty acid content compared to the common marine sources. The products are manufactured through a novel process of supercritical fluid extraction to produce a completely sterile, chemical/solvent free and odourless pupa oil for both human and animal applications, pet-food, and aquaculture industries for value-addition. The process used for extraction is a complete clean and green technology focused on waste reclamation, where, even the left-over cake after extraction is used further to develop products.

The basic approach is to use low temperature based biotechnological tools towards extraction of essential oil which will provide better yield as well as preserve the bioactive form of the oils. Vetiver Oil extracted through this approach yields 3 times better yield with better GC profile. Low temperature-based extracts preserve the bioactive form of the molecules and helps in medicinal applicational uses. Vetiver Oil is used in all high-end perfumes as base molecules and acts as slow release molecules and has many medicinal applications as well.

Present essential oil extraction uses traditional steam and hydro distillation which leads to low oil yield and degradation of molecules. This also give burnt odor profile not preferred in commercial terms.

Biothermflavors and fragrances LLP

Vetiver Oil by Biothermflavors and fragrances LLP

Mallipathra Neutraceutical Private Limited

Technology for growing Cordyceps

Developed a technology for growing Cordyceps artificially without compromising the quality which took 60 days to complete its life cycle. The technology involved culturing of Cordyceps on cheaper substrates like silkworm pupa and low-cost vegetative substrate to produce economically viable products with combined therapeutic benefits of silkworm pupa and Cordyceps which can cure different lifestyle disorders and ailments.

PadCare has developed and launched the world's first smokeless sanitary napkin recycling solution. The waste generated out of this is used to make objects like plant pots, paver blocks, and tabletops. They offer at-source sanitary pad disposal bins and vending machines for female-first organizations like yours. The pads in the bins are collected by trained professionals in protective gear and are brought straight to the nearest recycling unit.

Padcare Labs Private Limited

World's first smokeless sanitary napkin recycling solution

Fabiosys Innovations Private Limited

Antiviral Coveralls

Fabiosys has developed Antiviral Coveralls (Fabium®) which provide Dual protection: Physical barrier protection to stop the viruses and chemical barrier protection to neutralize the viruses.Fabium® is developed using a technology called Hi-PAT, which makes it highly effective against bacteria, viruses, and fungi. Fabium starts working within seconds of contact with the pathogens and destroys ~ 99.9% of them within 30 minutes.

Dripo is a Smart Infusion Monitor, Wireless electronic monitor to measure and display the flow rate in gravity infusions and share the data wirelessly. Dripo is a portable connected infusion monitor that helps a health practitioner to set infusion rates accurately and monitor it from anywhere. It counts the drops and calculates real-time drop rate so that the nurse can set fluid flow precisely and efficiently without much training.

Evelabs Technologies Private Limited

DRIPO– Wireless Infusion Controller over IOT mesh network

Persistent Systems Private Limitedin collaboration with Maharashtra Institute of Medical Education and Research, Talegaon, Pune

I-Doctor: An intelligent diagnosis and drug dispensing platform A

I-Doctor is an intelligent platform for diagnosing clinical condition and decide on prescription accordingly and also dispensing drugs using drug dispensing platform. This diagnosing algorithm connected to multiple point-of-care devices like ECG, BP apparatus, thermometer. i-Doctor independently diagnoses most common clinical conditions, it has a follow-up mechanism with an assigned doctor to ascertain the correctness of diagnosis and ensuring the well-being of the patient.

Other Exemplary Products developed/under development through BIRAC Support

Ahammune Biosciences Private Limited

Topical AB1001- new drug candidate for vitiligo

BIRAC supported AB1001, a new drug candidate for vitiligo that has completed preclinical studies and team has accomplished formulation development and validation, scale up, GLP toxicity and efficacy studies. The IND has been filled for the molecule and DCGI has provided approval for Phase I. AB1001 works on stress-mediated melanocyte death triggered by oxidative stress and ER stress and targeting this pathway demonstrated increased melanocytes survival, reduced death and maintained melanocytes functions.

The project aimed at developing a single full-body PPE for Healthcare Personnel who are treating patients with contagious diseases. The activities under the project included alpha testing, technical feasibility validation, clinical viability after beta testing in AIIMS and Certifications for PPE from Authorized agencies.

The PPE prototype got approved by SITRA. A Protection and Ventilation system (PAV System) approved by TÜV Rhineland was integrated into the PPE for providing comfort while using the PPE, which filters outside air using a medical grade HEPA Filter and gives microbe free air for breathing and aeration. The final certified product with complete Quality Regulations has been user tested with 50 final prototypes.

Indigenous Production of Novel Personal Protective Equipment for Healthcare Personnel (by individual applicant Dr. Adil Khan Yusuf Zai)

Yodhha Kawach-Full Body Personal Protective Equipment for Healthcare Personnel with Built-In Ventilation Support

Shankaranarayana Life Sciences LLP

Closed-tube SN-RAMP assay platform for detection of COVID-19

The SN-RAMP isothermal amplification assay with an indigenously developed Colorimeter detection device and Heat Block Integrated Fluorescence Detection Device is rapid, simple, easy to use, inexpensive, and suitable for the areas where facilities are limited.

Nuverse Health Solutions Private Limited in collaboration with Pinktech Design Private Limited

Contactless Digital Sanitation Assurance Entry Exit System

A comprehensive digital hand sanitisation system that objectively measures hand sanitation using IoT and Neural Networks, when hand sanitizer is applied on the hand. A temporal signature of the gas emission patterns is converted to spectrogram and is passed through a convolutional neural network to classify the signal into binary ratings. The results are displayed through LED depicting adequacy of sanitation via colour coding. The system on being evaluated against known samples of adequate and inadequate sanitation levels had demonstrated an accuracy rate of 98.06%.

The company has developed a portable Wireless Infusion Monitor and Controller of Gravity Drips. Usability evaluation and live testing was completed. Total 8 users as participants from Medical Colleges and initial validation was completed with 5 units at two hospitals where live testing was carried out on IV drips.

Evelabs Technologies Private Limited

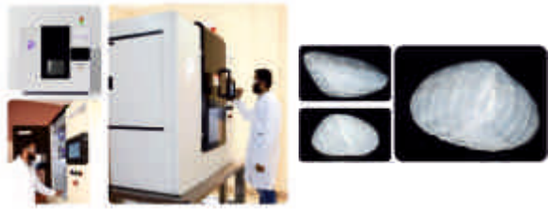
Portable Wireless Infusion monitor and Controller

Startoon Labs Private Limited

Pheezee - an intelligent device for physiotherapy monitoring

Pheezee is a battery powered wearable device that can report recovery in physiotherapy patients. It measures two important parameters, range of motion (ROM) and electromyogram (EMG) and runs proprietary algorithms to generate reports. With these reports, the patient gets to know their current state of recovery. Presently, they have successfully developed product and tested it on 40 healthy volunteers, fine-tuned the algorithms to achieve accuracy of 97% and conducted clinical study and generated over 500 reports at partnered hospitals.

Prayasta 3D Inventions Private Limited



Personalized silicone breast implants using 'implant-grade' Elastomer Additive Manufacturing (iEAM) and Novel Internal Architecture (NIA)

Personalized silicone breast implants manufactured using 'implant-grade' Elastomer Additive Manufacturing (iEAM) and Novel Internal Architecture (NIA). The implants are personalized in terms of shape, size, weight, touch and feel to better help these survivors regain their confidence and improve their personal, social and professional lives. The implants are rupture safe, suturable and eliminate the need for unnecessary corrective surgery.

Tactopus Learning Solutions Pvt. Ltd. works on building inclusive learning environments both at school and at home by creating multisensory tech-learning aids which can be used by ALL children including those with cognitive disabilities as well as providing families with online access to special educators and speech therapists from the comfort of their homes.

The following products are available in the market:

- Tactopus Connect: Online special education and therapy services for children with special needs. The cost is INR 600-800 per session, and more than 200 sessions have been conducted so far.
- Tactopus Learning Aids: Audio-tactile learning products for children with vision loss and blindness. The cost is INR 650-2500 per unit, and more than 1000 units have been sold so far.

Tactopus Learning Solutions Private Limited

Multisensory tech-learning aid

Trestle Labs Private Limited

Scanning and reading device for the blind and visually-impaired

Kibo XS offers a scanning and reading device for the blind and visually-impaired that helps them to; a) Listen printed and handwritten content across 13 Indian and 20 international languages, b) Translate printed and handwritten documents across 100+ languages in real-time, c) Digitize inaccessible printed and handwritten content into accessible Unicode formats like doc, docx, txt, and d) Save documents on Kibo Cloud for multi-device access anytime, anywhere. The product costs around INR 26,999/- (+5% GST).More than 200 units have been sold so far.

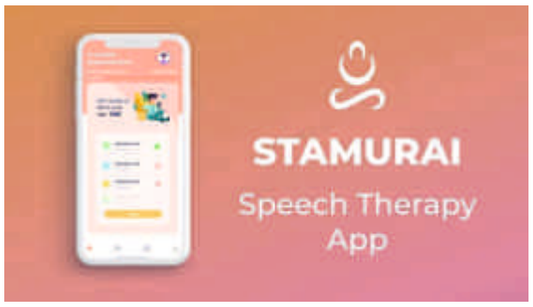
Thinkerbell Labs Private Limited

Annie

Annie - A device for improving braille literacy in India (both reading and writing skills). The product costs around INR 63,000 / Device. More than 1200 units have been sold so far.

Stamurai: A speech therapy app for stammering and for other speech related issues. The product costs around INR 1,499/ Yearly subscription. More than 70,000 users.

Demosthenes Technologies Private Limited



Stamurai

Inceptor Technologies Private Limited

BrailleMe

BrailleMe is a Digital Braille Tablet that enables persons with visually impaired to access the digital world in their own tactile script Braille at an affordable price. It has a 20-cell screen made of refreshable Braille cells for reading and a Brailler style keypad for typing empowering a blind person to both read and edit digital content both on BrailleMe or connected computer or smart phone.The product costs around INR 30,000 / Device. More than 50 units have been sold so far.

Ibex is an electric wheelchair designed for Indian Road conditions and can be customised for every patient. The product costs around INR 55,000 / Wheelchair. More than 31 units have been sold so far.

Indent Designs Private Limited

Ibex

Raised Lines Foundation

Affordable tactile graphics to promote K12 education for visually impaired

Development of affordable tactile graphics to promote K12 education for visually impaired and provide equal learning opportunities. The product costs around INR 3,000-7000 /Kit. More than 500 users.

SoilSens Station V1.0 is an affordable soil monitoring system with soil temperature, ambient humidity, ambient temperature, and indigenously developed frequency-based soil moisture sensor. This system works on solar panel and can be deployed in open farms, poly houses in any type of soil or any terrain.

SoilSenS Technologies Private Limited

SoilSens Station V1.0

DSS Imagetech Private Limited with National Bureau of Plant Genetic Resources

Real time PCR assay and lamp-based assay for the identification of GM crops

The Company along with National Bureau of Plant Genetic Resources (NBPGR) has developed and validated two products:

- Real time PCR assay kit and
- Lamp based assay kit for the identification of genetically modifies crops by detecting specific molecular markers as well as common genetic elements. The Company is preparing for commercialization of the same.

National Institute of Plant Genome Resear

Event Selection Trial of low glucosinolate mustard transgenic lines in Delhi University, Mustard lines at flowering (bloom) stage

To Perform Event Selection under Small Scale Open Field Growth Condition and Substantial Equivalence Test of the Low Glucosinolate Brassica juncea Transgenic Lines

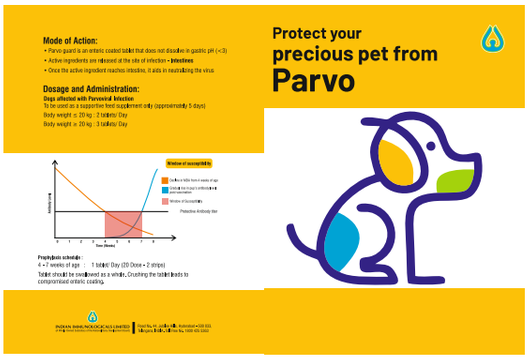
Under the project, successful evaluation of the three low glucosinolate transgenic mustard events (C3/2, C3/15, C3/56) were carried out under open field conditions. Event Selection Trial under open field condition suggest that all three low glucosinolate transgenic events performed optimally for all the tested agronomic and seed-yield traits (including oil content, fatty acid composition, seed weight). The low glucosinolate trait was stable under the open field condition, wherein C3/15 was identified as the best performing low glucosinolate line.

Confined field trials and safety studies for regulatory approval of transgenic mustard was carried out successfully and after obtaining the relevant approvals, the BRL-I trials for two years, BRL-II trials for one year. All the relevant food safety studies and environmental safety studies were completed, and the final results were presented to the GEAC.

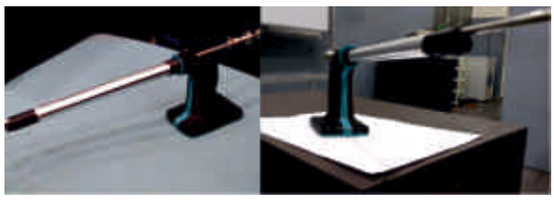
To conduct confined field trials and biosafety studies on genetically engineered Brassica juncea(Male sterility and restorer lines as pollination control mechanism) for heterosis breeding and yield improvement **(Mother Dairy).**

Biosafety studies on genetically engineered Brassica juncea (TRL 8)

Indian Immunologicals Limited



ParvoCure is an enteric protected oral tablet developed to treat or prevent Parvoviral enteritis in dogs. The tablet contains >100,000 HI units of anti-parvoviral antibodies raised in chicken and formulated in a way that the active ingredient released in intestine are antibodies that neutralize the virus, thereby curing the disease.



An artificial insemination gun capable of real time imaging of the reproductive tract in a cow and relays image on a smartphone via Bluetooth. The smartphone has an application where details of the insemination can be entered, stored and retrieved.

An efficient and productive tool for de-worming/drenching, to overcome the problems of drenching and dosing has been developed.

Trieen Health Care Private Limited

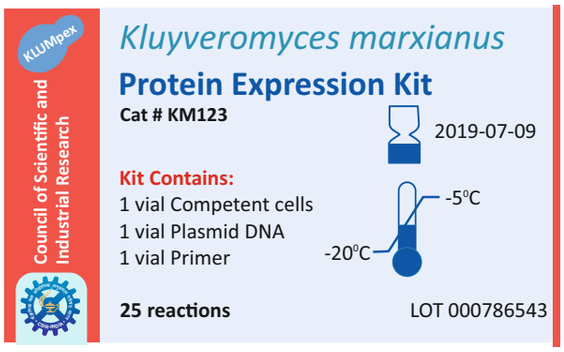
The technology has got high societal relevance as far as dairy farms are concerned. The company has prepared and tested three teat disinfection formulations with ozonated sunflower oil and wood vinegar combinations for prevention of mastitis in cows and successfully demonstrated the superiority of the ozonated based teat disinfectants against existing iodine-based teat disinfectants. The project is at TRL 7 as validation and field tests have been done.

Development of a novel, robust, industrial scale recombinant protein manufacturing yeast using an improved strain of Kluyveromyces marxianus

The team has developed a kit for Kluvereomyces based inducible plasmid construct for protein expression. The kit will contain plasmid encoding constitutive promoter, plasmid encoding inducible promoter, primer for gene sequencing and K. marxianus competent cells.

CSIR-IMTech | Mynvax

Institute of Microbial Technology, Chandigarh in Collaboration with Mynvax Private Limited



Proposed kit

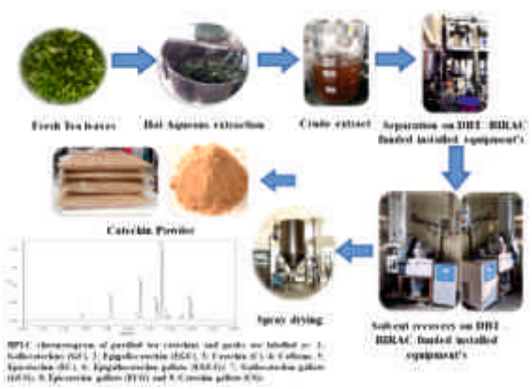
Kuantum Papers Limited

Cellulosic Ethanol Pilot Plant

A commercially viable technology to produce 2nd generation (Cellulosic) ethanol from rice straw has been established by Kuantum Papers Limited. The technology involved washing, chopping and in-situ mixing of rice straw with acid. The retentate after acid hydrolysis was subjected to treatment with proprietary chemicals for lignin separation. This was followed by enzymatic saccharification and separation of lignin and silica rich ash from the sugars using membrane filtration. Recombinant Saccharomyces cerevisiae strain was used for co fermenting C5 and C6 sugars. The pilot plant can run continuously to produce 20 Kilolitres ethanol. The company is in the process of raising funds for the 100KL/day bio-refinery.

Industrial scale production of tea catechins (100 kg batch) in the project funded under BIPPinvolves a solvent-free method for purification and extraction of tea catechins. The technology of catechin production from tea leaves has been transferred from the CSIR-Institute of Himalayan Bioresource Technology (CSIR-IHBT). Process optimization for purification of catechins at 100 Kg fresh tea leaves per batch (3 batches) at industrial partner's site is successfully completed replicating the process parameters established at CSIR-IHBT campus with 20 Kg batches. The catechins obtained were above 60 purity level meeting international standards.

Baijnath Pharmaceuticals Private Limited



Processing of green tea leaves @ 50 kg scale for catechin using DBT- BIRAC funded equipment's at CSIR-IHBT Pilot plant

KBcols Sciences Private Limited

Images of New Facility atby Kbcols Sciences Pvt. Ltd

Microbial Pigments -KBCols is exploring microbes as an inexhaustible feedstock of natural colors, as they represent one of the cheapest, most abundant & unexplored biological feedstocks available in large quantities. These natural colors can find applications in food, pharmaceuticals, textiles and cosmetics. The present endeavor is trying to color the whole world in a new different way. KBCols technology of natural colors has been developed till Lab pilot scale. The product is now being tested with various Industrial partners with the objective of launching products with KBCols natural bio-colors.

Nuevo polymers Private Limited




Production of guar-based dietary fiber (Nutrifibre)

One of the projects by Nuevo polymers Pvt Ltd. got completed and a product under the name of Nutrifibre was develepoed. This guar based Dietary fiber is an innovative, fermented, dietary fiber which provides digestive support, satiety, and has prebiotic characteristics. Guar based Dietary fiber has been extensively shown to support a wide range of digestive health concerns. It has tremendous formulation flexibility when used in foods, beverages, and dietary supplements. This pure, partially hydrolyzed, guar fiber is a truly unique way to add value to the Nutraceutical, health supplement, bakery, beverages and dairy products. The product is at validation stage.

Another indigenous biodegradable plastic has been developed by Ruhvenile Biomedical through modifying GUAR GUM, the raw material is easily available in millions of tons in India. The product has shown almost the same physical properties as other available plastics (Polypropylene) in the market. The product has the potential to replace single-use plastic apart from other uses.

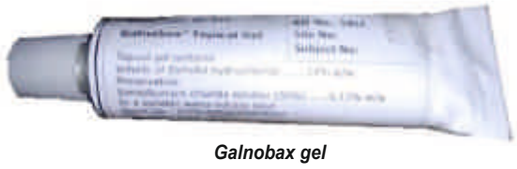
Guar Gum is found to be a good base material for development of hydrogel bioadhesive transdermal patches for application to the skin and would be first of its kind from indigenous origin. The Guar gum based bioadhesive was proposed to overcome the limitation of most of the synthetic bioadhesives existing in the current market. This area will bring value addition to a marginal crop and may lead to import substitution.

Ruhvenile Biomedical Private Limited

Levim Biotech LLP

Liraglutide biosimilar to treat Type-2 Diabetes Mellitus

BIRAC supported biosimilar Liraglutide for Phase I clinical trials and human Phase III clinical trial under National Biopharma mission program. The test product is found to be well tolerated and safe. Phase-III clinical study. Consequently, Ethics Committee EC approvals from 18 sites/hospitals across India were obtained and the Phase-III clinical trial has been initiated. Already 100 patients have been recruited into the trial. Levim expects to complete the study by Feb 2023 and product is intended to be launched in India by Jun 2023.

Genesys Biologics Private Limited	BIRAC has supported Insulin Glargine Biosimilar (GEN1501) for Phase I clinical trials. A total of thirty-nine (39) subjects were considered for Pharmacokinetic, Pharmacodynamics and Statistical analysis.
Pandorum has developed proof-of-concept studies by making a robust in-vitro platform of mono component (hepatocytes) and bi-component spheroids with primary human hepatocytes co-cultured with human stellate cells. Induction of Steatosis in healthy human mono-component & bi-component spheroids, characterized and evaluated effect of anti steatotic drugs. Shown the reproducibility from different batches and from different donors cell.	**In-vitro organoid platform- Pandorum Technologies Private Limited**
Novalead Phama Private Limited  *Galnobax gel*	The Company has developed and completed Phase III trials for Galnobax® Gel, used for treatment of Diabetic Foot Ulcers. The Company is in the process of submission of application for market authorization.
AP Organics Pvt. Ltd. in collaboration with IICT, Hyderabad has developed the process of preparation of rice bran lecithin from crude rice bran gums. Conventionally, soy lecithin is being used by industries. The developed process has been successfully demonstrated at 3 kg per batch scale. The rice bran lecithin will find application in non-food-based industries such as paint industry, etc.	**AP Organics Private Limited in collaboration with IICT, Hyderabad**  *Process of preparation of powdered rice bran Lecithin*
BeAble Health Private Limited  *ArmAble: Gamified Upper Limb Rehabilitation*	BeAble Health has developed an upper limb rehabilitation device. ArmAble is a gamified rehabilitation therapy device for the neuro and motor rehabilitation in patients with an upper motor disability caused due to stroke, traumatic brain injury, cerebral palsy, fracture or other reasons. Clinical evaluation of the device has been done at 3 centers and the Company is in process of commercializing the same.

T Stanes and Company Limited

T Stanes & Company Pvt. Ltd. along with Centre of Advanced Study (CAS) in Marine Biology, Annamalai University has developed products with plant growth & defence potential using marine biological resources. These include

- 5MIN-marine microbesbased Plant growth-promoting rhizobacteria (PGPR) to improve soil quality, increase plant growth and development (including yield and quality of the produce)
- Organic Bio stimulant products such as GAGE (macro algal extracts) and REDEEM (Marine microbe with macro algal extracts) to improve the physiological potential in plants and sustain optimum yields.

- Technology for Red wine production using black rice has been developed.

The technology has been transferred to Gold Beverages, Guwahati for commercialization.

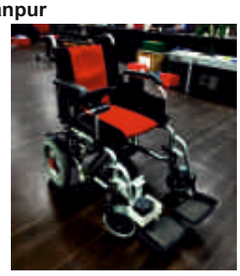
Institute of Advance study in Science and Technology, Guwahati

Cellulosic Ethanol Pilot Plant

IIT Bombay and Dynasense Technologies Private Limited

Point of care diagnostic test kit has been developed for the calculation of free and bound cholesterol, HDL and LDL in whole blood by IIT Bombay and the device is currently undergoing multicenter validation.

IIT Kanpur



A prototype of a bio- signal enabled robotic wheelchair for motor-disabled and elderly care has been developed.

Evaluation of glycoprotein E-deleted infectious bovine rhinotracheitis (IBR) marker vaccine candidate in cattle is ongoing.

Indian Veterinary Research Institute, Bareilly, Institute of Animal Health and Veterinary Biologicals, Bangalore and Biovet Private Limited

Amity University, Jaipur and Genomix Molecular Diagnostics Private Limited

Vaccines (heat killed and subunit vaccine) to shield Livestock from Paratuberculosis have been developed and validated. Studies in goat model suggest that the vaccines are safe and efficacious.

MicroGo LLP

GOsteri® portable Sterilizer

MicroGo LLP has developed and validated GOsteri®, which is an On-the-Go portable Sterilizer for sterilization of surgical instruments without the need of water and regular supply of power. Third party validation of the product at 5 Primary Health has been completed.

Affordable Products and Technologies developed through Investment schemes

BIRAC grades funded projects into 7 thematic areas for project monitoring and promoting innovation in these domains namely

- Drugs (including drug delivery)
- Biotherapeutics including Biosimilars and Regenerative Medicine
- Vaccines
- Devices and Diagnostics
- Agriculture (including Aquaculture and Veterinary Sciences)
- Clean Energy & Environment (including Secondary Agriculture)
- Bioinformatics (including Artificial intelligence, Big Data Analysis, IoT's & software development)

BIRAC maps funded projects for their Technological Readiness Level (TRL) on a scale of TRL 1 to TRL 9. Potential regulatory hurdles in the projects are identified during the evaluation phase. Supported projects are regularly mentored and monitored. BIRAC assesses the TRL progression of projects through progress evaluation by Project Monitoring Committee (PMC) experts using either F2F, online or onsite interactions.

Monitoring and mentoring frequency and name of the committee may vary based on schemes, programs & project stage. During the year 2021-22, 23 projects completed Early stage validation and 80 projects delivered products/technologies which are at late stage validation, pre-commercial stage, market launched or commercialized.

Sector-wise Analysis

Healthcare

Drugs (Including Drug delivery)

Presently, diseases including cardiovascular diseases, infectious diseases, diabetes, and kidney-related complications have a huge burden globally.

BIRAC employs several programs to encourage drug discovery and development that may denote the first available treatment for disease (First in Class), or may have significant benefit over the existing drugs (Best in Class). The proposals received under this area are generally lower in number as the realization of product from idea takes a long time. Therefore, maximum projects received for funding and finally selected under this area are for developing proof of concept followed by preclinical and early-stage validation. Focus areas include discovery of small molecules, NCEs, repurposing of drugs, drug delivery platforms, In-vitro and In-vivo screening platforms for potential drugs. BIRAC also supports novel drug delivery models in the area of nanomedicines for targeted and efficient drug delivery and better bioavailability of various available drugs.

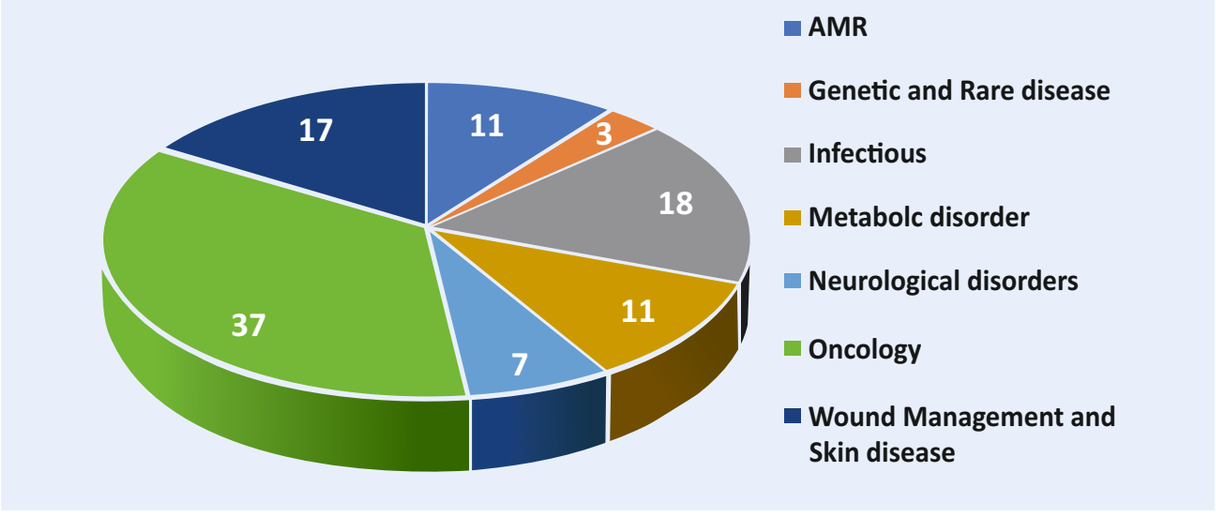
The support is provided at different stages i.e., right from the ideation or in-silico drug screening, establishment of Proof of Concept (PoC), preclinical studies of leads and clinical trials (Phase I, II and Phase III). BIRAC is providing support for clinical trials of potentially life-changing treatments for patients with life threatening diseases. The late-stage validation/Clinical trial projects supported include research for diseases such as Community-Acquired Bacterial Pneumonia (CABP) in Adults, Duchenne Muscular Dystrophy, Vitiligo, Breast Cancer, Solid tumours. Diabetic foot ulcer, inflammatory pain, Tuberculosis.

In the last few years, certain mission programs have been initiated jointly with DBT such as antimicrobial resistance (AMR) Mission and New Drug development. These drug development programs are focused on

priority diseases i.e., TB, COPD, CVD and Cancer. AMR mission aims to identify new innovative approaches that have potential to transform public health action on a national or global scale by identifying and filling gaps in knowledge on the development of new antibiotics and alternatives to antibiotics to counter AMR. Support for screening through in-vitro and in-vivo models were critical measures undertaken to fight pandemic and efforts have been made under "Atmanirbhar Bharat" for testing the existing safe drugs against COVID-19. In this regard, since March 2020 BIRAC has provided grants for repurposing of drugs and development of new screening platforms against COVID-19.

Few platform technologies have successfully been commercialized by BIRAC support (silk fibroin based wound healing products, strip-based drug delivery-an alternate to tablets and capsules for low dose APIs, nutraceuticals/pharmaceuticals with POC of Vitamin D) and are now being supported under Product commercialization program for scaleup by BIRAC. The disease wise projection under this theme during last year shows that maximum number of projects have been supported in the area of Oncology, infectious diseases, wound management and skin diseases, AMR and metabolic diseases.

Till date BIRAC has supported nearly 171 projects where 34 IPs has been generated in this area. More than 80% projects are led by Industry, followed by few projects with Industry–Industry and Industry academia collaboration.



Biosimilars and Regenerative Medicine

Biosimilars have provided cost-effective alternative to manage serious health conditions where innovator's products typically are unaffordable & inaccessible. There is a large emerging opportunity for growth in Biosimilars segment for India. The market demand for biopharmaceuticals is increasing as they are generally better targeted and relatively have fewer side effects. This massive demand for biopharmaceuticals is enabled by an accelerated emphasis on research and related investments. However, an intensive development process and stringent regulatory requirements are the major growth limiting factors.

Biopharmaceutical products include monoclonal antibodies, recombinant growth factors, purified proteins, recombinant proteins, recombinant hormones, recombinant enzymes, synthetic immunomodulators, cell and gene therapies, and other products. This segment is evolving for cell and gene therapies. There is a need to focus on novel manufacturing and analytical technologies.

As of January 2022, there were 28 marketed regenerative medicines globally, including cell therapies, gene therapies, gene-modified cell therapies, and oncolytic viruses. The therapy area with the highest number of marketed regenerative medicines is dermatology, with 13 approved products.

In addition, there are over 250 regenerative medicines in clinical development, with over 50 in Phase III trials and about 130 in Phase II. By 2027, the regenerative medicine market forecast worth is over $22 billion. This will be led by cell therapies ($10.8 billion), followed by gene-modified cell therapies ($6.5 billion).

India ranks 3rd worldwide for pharmaceutical production. The country has an established domestic pharmaceutical industry, with a strong network of 3,000 drug companies and ~10,500 manufacturing units, which include biotech start-ups, biotech companies and biotech incubators. These numbers are expected to multiply four to five times in the next five years. To nurture this ecosystem, BIRAC supports innovative translational research from ideation to commercialization. Public Private Partnership funding is also encouraged to attract investments from different Industries, Investors and philanthropic agencies. To further enhance the research and development of biopharmaceuticals, “National Biopharma Mission (NBM)”, a collaborative mission of industry and academia with a corpus of USD 250 Mn is being implemented by BIRAC (initiated by DBT in collaboration with World Bank).

Several projects for development of different biosimilars & regenerative medicines, process optimization of existing products and their validation in this area for increasing the present market share/output in the country have been supported by BIRAC.

BIRAC has supported various proposals for different diseases like Cancer, Diabetes, Inflammatory diseases, Alzheimer’s etc. Further development and validation of different platform technologies for producing affordable monoclonal antibodies has also been promoted.

Under the thematic area of regenerative medicine, projects have been supported for stem cells isolation (device development, media formulation), their expansion and usage of different stem cells (Embryonic stem cells, Tissue-specific stem cells, Mesenchymal stem cells, induced Pluripotent stem cells) for various disease indications including Periodontal Tissue repair, urethral strictures, urinary incontinence etc. Conduct of clinical trials in the field of regenerative therapy as well as preparation of Stem cell Bank has also been funded by BIRAC.

Maximum number of projects supported are towards development of Proof of Concept (PoC) or Early-Stage Validation of the developed PoC. Further to nurture the indigenous innovation, the program named Innovate in India (i3) under NBM has a specific focus on the development of bio-therapeutics. Major areas supported under this program include media and feed supplements, protein purification technologies, IT platforms for quality management system in biopharmaceutical industry, Bio-betters and biotherapeutics, Antibody Drug Conjugates, CAR-T therapies etc.

Vaccines

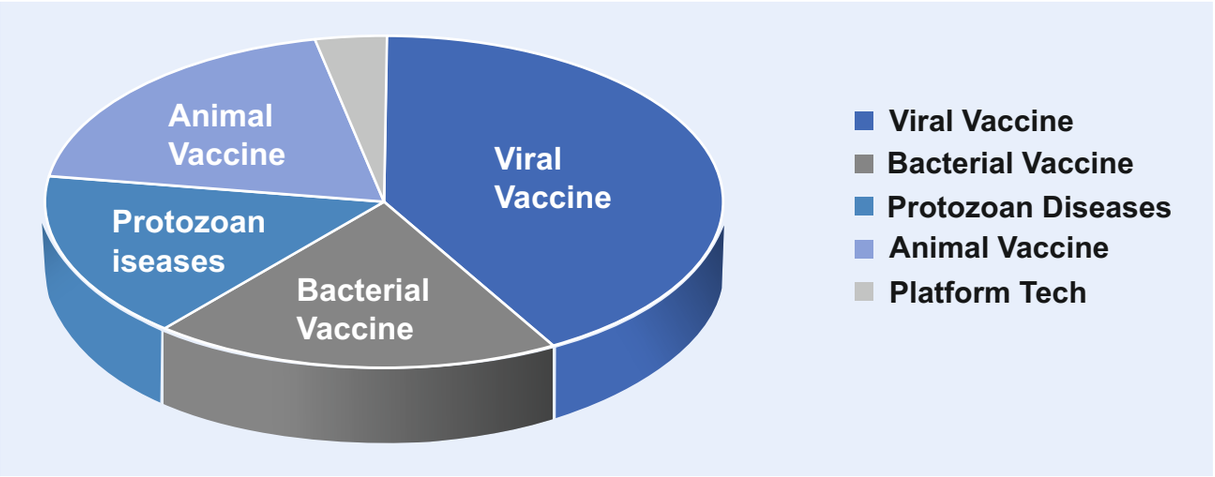
Vaccine development has played an important role in combating infectious diseases and may help tackle outbreaks in the future. Vaccine development requires:

- High throughput research and development infrastructure,
- Scale-up facilities
- Policy driven decisions
- Government prioritization
- Investment and multi-sectoral partnerships.

Covid-19 has taught us to strengthen our preparedness for:

- Exploring new and promising vaccine candidates
- Building animal models for fast-track clinical trial studies/data
- Scaling up the vaccine production once we have the right candidate (indigenous and/or outside)

Global trend in vaccine development indicates that industries are primarily developing vaccines for viral diseases followed by bacterial, cancer and protozoan diseases. Similar trend is also seen in BIRAC supported 40 projects (excluding vaccines for Covid-19) for vaccine development across various schemes.



Indication of vaccines projects supported by BIRAC

Commercialized Vaccines

- **Vaccines for Rota-Virus (Rotavac),**
- **Japanese Encephalitis Virus Vaccine (JEEV), and**
- **H1N1 swine flu Vaccine (Pandyflu)**

Four Products i.e., HPV vaccine, Canine Leishmaniasis vaccine, vaccine for Marek's Diseases, Para-tuberculosis and Vaccine for Parovirus are ready for Commercialization while several vaccine candidates are in clinical trials like vaccine for Pneumococcal, Chikungunya, Dengue, and more.

World Health Organization declared COVID-19 a global pandemic in March 2020. There was no vaccine or therapeutic available to control the death rate associated with this pandemic. Governments around the world sought to find ways to suppress the spread of the virus. BIRAC realized the pressing need and immediately formed a Covid consortium research unit and announced a call for proposals to address the Covid-19 problem. Fourteen projects were supported for Vaccine development and its associates.

- Eight projects were supported for the development of vaccines utilizing different strategies proposed by small and large vaccine Industry and academic Institutes
- 6 projects were supported for the development of different assays, reagents and animal models required for the development of vaccines

Another major step was **Mission COVID Suraksha,** established by DBT with BIRAC as the implementing agency; the focus of this mission was to consolidate and streamline available resources towards a warpath for accelerated vaccine development. This is a National Mission working to bring to the citizens of the country a safe, efficacious, affordable, and accessible COVID vaccine at the earliest with a focus on Atmanirbhar Bharat and fulfil our commitment of serving not just the country but the entire globe. The major objectives of the mission are as follows:

- Accelerating the production of clinical trial material and clinical development for licensing of COVID-19 vaccine candidates.
- Establishing clinical trial sites, immunoassay laboratories, central labs and suitable facilities for animal challenge studies, and other testing facilities to support COVID-19 vaccine development

Under Mission Covid Suraksha, three Requests for Expression of Interest (REoIs) were issued for receipt of proposals. A total of 66 applications have been received across all the 3 REoIs, whereby, following due scientific and technical due diligence, 30 applicants were shortlisted for support. Support was provided by BIRAC/DBT for development of five vaccine candidates. 3 vaccines got **EUA approval for immunization.** Rest 2 REoIs were for Enhancement of Capacity to support COVID-19 vaccine development and enhancing capacity for conduct of Human clinical trials for COVID-19 Vaccine candidates. Three Immunogenicity Assay Laboratories for SARS-CoV-2 clinical immunogenicity studies and three Animal Challenge facilities were supported. A total of 19 hospital based clinical trial sites are being supported under the Mission.

Devices and Diagnostics

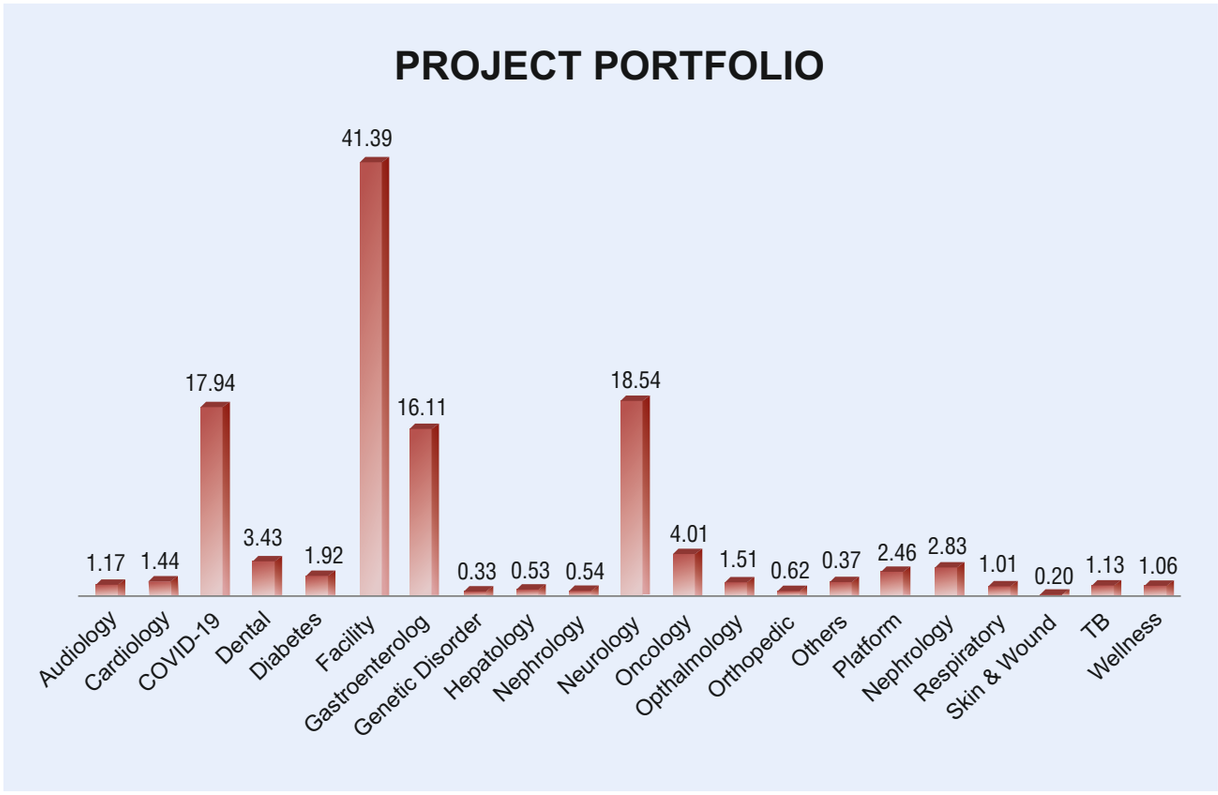
The global medical devices industry is projected to grow at a CAGR of 5.6% to reach $595 Bn by 2024. The top 5 device areas by sales are in vitro diagnostics, cardiology, imaging, orthopedics, and ophthalmic.

The Indian medical devices market is expected to grow at a Compound Annual Growth Rate (CAGR) of 7.9% through 2030, forecasts Global Data. Global Data's research reveals that India was amongst the top three medical devices markets in Asia-Pacific in 2021.

The Government of India has made several efforts to promote the sector. The Medical Devices Rules, 2017 notified by the Ministry of Health and Family Welfare under the Drugs and Cosmetics Act 1940, laid out the regulatory framework in terms of quality, safety and efficacy for medical devices. The Production Linked Incentive (PLI) Scheme for Medical devices was introduced with an outlay of Rs. 3,420 crores to incentivize manufacturers in four target segments of high-end medical devices. In addition, a scheme to support for financing of common facility projects in four medical devices parks was introduced in 2020 with an outlay of Rs. 400 crores. The National Pharmaceutical Pricing Authority (NPPA) has stepped up price monitoring of essential medical devices and made interventions to cap margins on retail prices.

The Medical Devices Policy 2022 was proposed by GoI that aims to reduce import dependence on high-end medical devices and make the country one of the top global manufacturing hubs. The government plans to streamline the current complex regulatory framework by providing a single-window clearance system to acquire licenses to manufacture or import medical devices. The policy will ensure the availability of quality medical devices at an affordable price by implementing a Uniform Code for Medical Device Marketing Practices (UCMDMP) and making it mandatory to declare MRP. (Source: Draft of Medical Devices Policy 2022)

A total number of 632 projects have been supported by BIRAC in the devices & diagnostics sector with an investment of INR 485 Crore. The projects leading to commercialized products under this theme have witnessed an increase with 95 commercialized products in 2021-22 compared to 81 products commercialized till last year. Regulatory facilitation was provided to 200+ innovators. The neurology sector witnessed the highest current investment followed by COVID-19 at BIRAC.



Funds sanctioned in each area (in Cr)

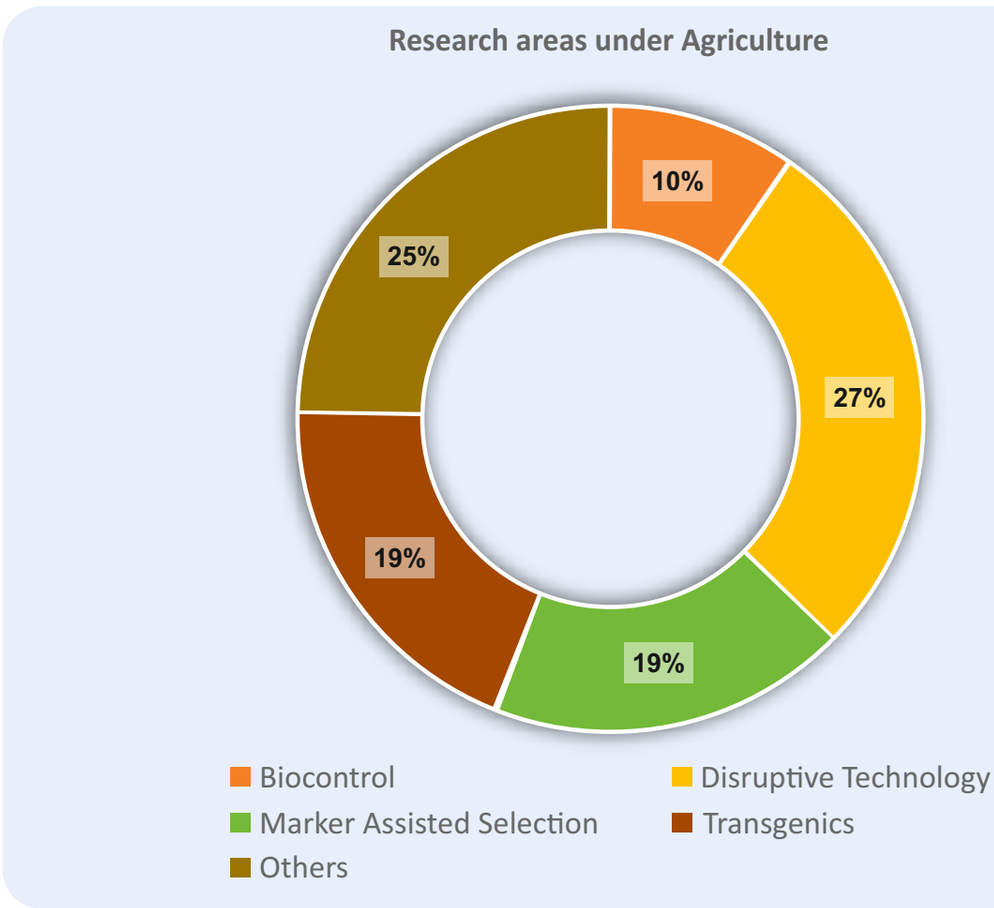
Agriculture (including Veterinary and Aquaculture)

Agriculture can play a crucial role in the economic growth of our country. Some of the largest Agrieconomies across the globe include US, China, India, France, Spain, Brazil, etc. Evolving business & revenue models and inclusion of start-ups is having a cascading effect in the ecosystem. Rise in demand and increase in investment for agriculture have globally affected Agriculture/Agritech trends. Farm management software, supply chain technologies, quality management and traceability are some of the key growth areas driving the technology adoption in global agriculture sector

India is largely termed as an Agrarian economy. The National missions, Government policies and Covid related crisis have fast-forwarded growth of startups in the area of Agriculture. These startups are bringing innovations for the farming ecosystem; creating channels that allow farmers to choose market and sell their produce at better prices.

BIRAC has been supporting projects in agriculture which are technology led in research areas like Marker Assisted Selection, Transgenics, Biocontrol, Disruptive Technologies *(AI/Machine Learning, Application Development, Drone development, Genome Editing, IoT/Sensors, Mechanics, Nanopesticides, Remote Sensing, Nanofiber carrier for Biofertilizers, Pheromones, Food Grain Storage and Robotics) and others (Silk worms related, diagnostics, tissue culture etc.).*

Some of the new areas include Supply Chain Streamlining, Smart Farm Monitoring Models *(Monitor crops sensors, weather stations and soil quality sensors, as well as vertical farming), Technologies to promote uniformity in Agriculture (Digitization of market processes for market integration).*



Veterinary And Aquaculture

BIRAC continues its support to enhance livestock production and productivity through biotechnology-based interventions for animal reproduction; increase in per animal productivity, animal nutrition and animal health.

During the Covid 19 period, veterinary science sector suffered because of various issues like lack of high-quality feed and various pathogenic diseases that hindered the production. Based on the existing challenges, in 2021-22 BIRAC invited proposals in the following areas:

1. Focus on improving quantitative and qualitative availability of feed and fodder and life stock productivity through Biotechnology interventions *(The National Livestock Mission -NLM)*
2. Modern Biotechnology interventions for development, improvement and conservation of Indigenous breeds (Rashtriya Gokul Mission)

Aquaculture and marine biotechnology are important sectors in India owing to a large coastline (of 7,517 km) and availability of widespread freshwater resources. The sector employs millions of people and contributes to the food security of the country. Hence, it has been identified by BIRAC as a thrust area to support R&D towards development of useful products and processes from fresh water and marine resources.

In the FY 2021-2022, two products, namely, 'Nano-sized formulation of β-glucan particles as potent immunity booster for shrimp', and 'Development of marine polysaccharides mediated nanoproducts for shrimp disease management' have reached TRL-7 and would be commercialized soon.

BIRAC is working to promote development of fish and seaweed-based nutraceuticals, marine and marine derived products for the betterment of human health under the aquaculture and marine biotech area.

Energy and Environment (including secondary Agriculture)

BIRAC supports projects under clean energy and environment area which focus on development of an industrial process, industrial product or a platform technology using biotechnology means for promoting development of green technologies. The area also includes Secondary Agriculture sector which focuses on adding value to primary agriculture produce by increasing the value of the agriculture commodities and value addition by processing the agriculture residue to feed and fuel.

Major focus programs under the Clean energy and environment area:

- Program on synthetic biology
- Innovation clean technology - scale up program
- Program on guar gum

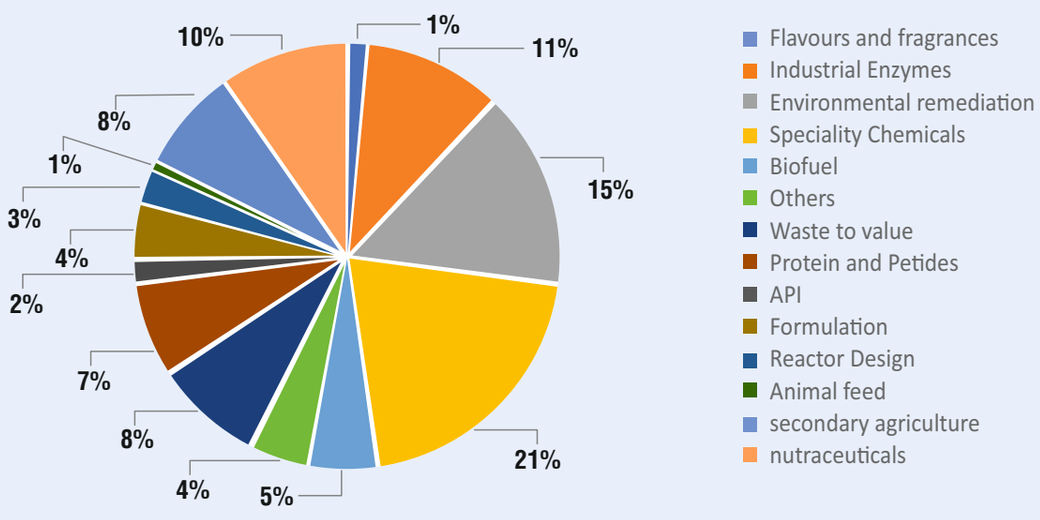
Program on synthetic biology was initiated in order to promote the research capabilities of Indian industry and academia in the area of synthetic biology. Proposals have been funded which focus on different products such as farnesene, rose oxide, hyaluronic acid, etc.

The innovation clean technology program focuses on implementation of few selected projects in association with municipalities.

Looking at the agricultural and industrial importance of the guar crop, BIRAC is working on overall development of guar production, R&D and processing industry, aligning the views of all stakeholders in the value chain as a single vision strategy. 8 projects have been considered for BIRAC funding in the areas of building material mixtures, sealants, bioplastics, biomedical patch and guar derivatives.

Special call under i4 (BIPP, SBIRI) and PACE (AIR and CRS) were also announced focusing on Industrially relevant bio-based products, waste management, Development of Plant based meat products, probiotic products, traditional drinks and Mission programmes of Government of India such as Namami Gange mission, UNATI mission.

Till date, 268 projects have been supported in this theme area engaging 108 companies, 80 start-ups, 48 entrepreneurs and 50 academic institutes. The spread of projects that have been supported till date are shown below.

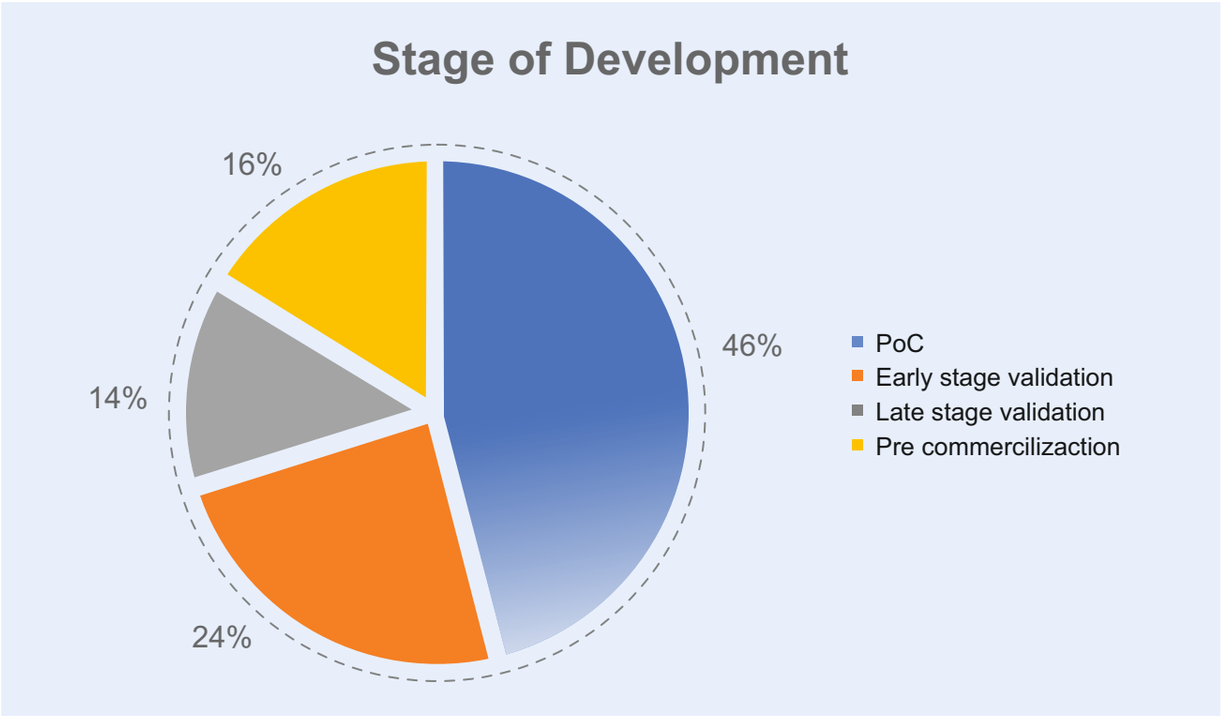


Area wise project distribution

Artificial intelligence, Big Data Analysis, IoT, software development & Bioinformatics

Bioinformatics is one of the fastest-expanding fields in India's biotechnology sector today and BIRAC encourages translational bioinformatics driven projects.

About 46% projects have successfully reached PoC stage. Rest of them are at early and late-stage validation technologies. Few of the projects from Bioinformatics area involved Industry-academia collaborations though many are pursued by industry alone.



Technology upgradation

The technical group along with experts take the responsibility of continuously monitoring and mentoring the supported projects to meet their objectives. Technical group assigns nodal officers for each thematic area (to have overall understanding of projects from that theme) and technical officers for each project (to closely monitor the progress of the project). This close monitoring and mentoring has facilitated development of several processes, technologies, commercialization of products/technologies (TRL-8 & 9), maturation of projects to Technology Readiness Level-7 (TRL-7) and filing of IPRs. Table below provides information on the products/technologies at validation, pre-commercialization and commercialization stage and IP filed through BIRAC funding during 2021-2022.

S. No	Category	Number
1	Products commercialized	27
2	Process/technologies at Pre-commercialization stage	12
3	Number of projects at TRL-7 stage	41
4	IPs filed	13


Covid-19
Pandemic
BIRAC's
Response
COVID-19
VACCINE

COVID Solutions developed through BIRAC support

COVID 19 was declared as a global pandemic in March 2020 by World Health Organization. Realizing the pressing need, BIRAC immediatelyinitiated various activities and launched special schemes & programmes addressing varied needs of the Covid times. Continuing the efforts initiated during FY 20-21 to address the various challenges posed by the Covid period, BIRAC extended support to the ecosystem for development of relevant solutions for fighting Covid.

BIRAC schemes and efforts launched and continued in FY 21-22 in response to Covid are as follows:

- COVID-19 Research Consortium
- Mission Covid Suraksha
- Fast tracked review and funding support under Covid 19 fund
- GCI led Covid efforts

As a result of the efforts mentioned above, solutions were rolled in following categories:

Snapshot of Products commercialized through BIRAC Support

Covid Vaccines developed through BIRAC support

ZyCoV-D
(Cadila Healthcare)

World's first DNA Vaccine for COVID-19, received EUA for 12 years and above age

Corbevax
(Biological E)

Protein Subunit Vaccine, received EUA for 05 years and above age

GEMCOVAC-19
(Gennova Biopharmaceuticals)

mRNA vaccine, received EUA

BBV 154
(Bharat Biotech)

Replication deficient Chimpanzee adenovirus-based Intranasal vaccine

ZyCOV-D Covid Vaccine

Zydus DNA vaccine candidate against SARS-CoV-2, ZyCoV-D is the world's first and India's indigenously developed Plasmid DNA vaccine to be administered in humans. This vaccine candidate is comprised of a DNA plasmid vector carrying S gene of 2019-nCoV spike-S protein.

World's First and India's indigenously developed DNA Vaccine

Emergency Use authorization (EUA) received in age groups 12 years and above

Salient Features:

- **Plug and play technology:** The Plasmid DNA platform also allows generating new constructs quickly to deal with mutations in the virus, such as those already occurring.
- **Administration:** Two Dose/Three dose intradermal vaccine: applied using The PharmaJet® needle free system, Tropis®, lead to a significant reduction in any kind of side effects
- Storage: 2-8^{C}
- Ease of manufacturing with minimal biosafety requirements (BSL-1)
- **Current Capacity:** 100-120 million doses annually
- Rapid large scale production feasibility
- Preclinical and Clinical Trial Data published in peer reviewed international journals

Corbevax™ COVID Vaccine

Biological E Limited's Corbevax™ vaccine against COVID-19 is based on the antigen derived from the Receptor Binding Domain (RBD) of the Spike (S) Protein of SARS-CoV-2 surface. This COVD-19 vaccine is based on classical vaccine technology of a protein antigen, RBD, adsorbed to adjuvant Alum (Alhydrogel or AH), in combination with another approved adjuvant CpG 1018.

Emergency Use authorization (EUA) received in age groups 05 years and above

India's first heterologous booster vaccine for Covid

Salient Features:

- **Administration:** Two Dose intramuscular vaccine
- **Storage:** 2-8^{C}
- Ease of manufacturing
- **Current Capacity:** 80-100 million doses annually
- Rapid large scale production feasibility, can be scaled to ~1 billion doses
- **Total no. of doses sold in India:** 98.52 Mn doses to GOI & 59,400 doses to private hospitals across India.
- Preclinical and Clinical Trial Data published in peer reviewed international journals
- **Global Market:** Approved in Botswana. Under review in many international markets

GEMCOVAC-19 COVID Vaccine

Gennova Biopharmaceutical's mRNA vaccine uses self-amplifying mRNA, which allows for a low dose of the vaccine due to its slow and sustained release for protein synthesis. This is the first mRNA-based vaccine stable at 2-8^{c}. Thermostability of GEMCOVAC-19 makes it more favourable for deployment in India and other developing nations than mRNA vaccines in western countries.

Emergency Use authorization (EUA) received in age groups 18 years and above

India's first mRNA-based vaccine for Covid

Salient Features:

- **Administration:** Two Dose intramuscular vaccine
- **Storage:** 2-8^{c}
- **Current Capacity:** Successful scale up from 5-25-75L batch and Permission to manufacture at risk obtained

iNCOVACC COVID Vaccine

Bharat Biotech International Ltd.'s iNCOVACC is an intranasal replication-deficient chimpanzee adenovirus SARS-CoV-2 vectored vaccine. It consists of a replication deficient ChAd vector expressing the stabilized Spike SARS-CoV-2 (Wuhan variant). Immune responses at the site of infection (in the nasal mucosa) – essential for blocking both infection and transmission of COVID-19.

Emergency Use authorization (EUA) received in age groups 18 years and above

India's first Intranasal vaccine for Covid

Salient Features:

- **Administration:** Two Dose, intranasal, nasal drops
- **Storage:** 2-8^{c}
- Manufacturing Easily scalable
- Non-invasive, Needle-free
- Data published in peer reviewed international journals

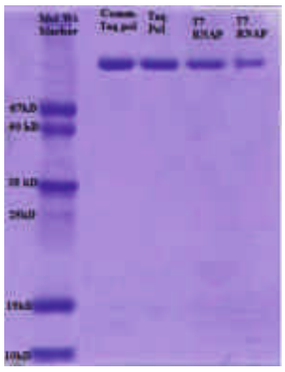
Covid Diagnostics-DBT-AMTZ CoMManD (COVID Med Tech Manufacturing & Development Strategy) Consortium, supported under National Biopharma Mission (NBM), enabled rapid scale-up of manufacturing of COVID-19 diagnostic kits, effectively lowering import dependency. Production of diagnostic kits and related devices has helped reduce import dependency on these devices.

Hon'ble Minister of H&FW, S&T and ES, Dr Harsh Vardhan, in the presence of Secretary, DBT, launched India's first I-lab (infectious disease diagnostic lab) to ramp up the COVID-19 testing in rural and inaccessible areas; building of these mobile testing labs is supported through the AMTZ COVID-Command. The first I-Lab is operational and is attached to the THSTI, Faridabad hub. It visited in and around villages and colonies of Faridabad, Ballabhgarh, and Palwal and has tested 7000+ samples in total.

To maximize the impact of facilitation provided to the COVID-19 diagnostic innovators, 360-degree guidance was provided through the special sessions of FIRST HUB on COVID-19. A special webinar was organized, wherein

the representatives from CDSCO, ICMR, GeM, BIS, NIB, DBT and BIRAC participated to address the queries of innovators. To summarize, DBT-BIRAC COVID-19 diagnostic facilitation, has strengthened the Indian diagnostics ecosystem for making India self-reliant.

COVID DIAGNOSTIC KITS :

LFA POCT kits for SARS COV-2 Antigen detection (Denovo Biolabs Pvt Ltd. In collaboration with ICAR-NIHSAD)	Denovo Biolabs Pvt Ltd. has developed an indigenous, cost effective, robust and rapid LFA POCT Antigen kits for SARS-COV2 diagnosis. The LFA kit to detect SARS-Cov2 was validated successfully with Covid-19 positive and negative clinical samples.
EmbarGoMagnoLISA SARS-CoV-2 IgG/IgM kit was developed with Nucleocapsid and Spike protein as the target antigens. Surface modified gold magnetic nanoparticles coated with target antigens were used in the ELISA. Developed assay was validated at ICMR-NIV to obtain 98% sensitivity and 92% specificity. ISO13485 certified manufacturing facility is under development for application for manufacturing license to CDSCO for commercial manufacturing.	**Magnetic nanoparticle based-COVID 19 IgG/IgM Kit development for rapid diagnosis and surveillance (Prantae Solutions Private Limited OPC)**  ***Magnetic nanoparticle based-COVID 19 IgG/IgM Kit by Prantae Solutions Pvt. Ltd. OPC***
Nucleic Acid Lateral-Flow Immuno Assay (NALIA) test kit and indigenous diagnostic kit components for Nucleic acid tests for COVID 19 Promea Therapeutics Pvt Ltd 	This project was focused on developing highly sensitive, specific and accurate Nucleic Acid Lateral Flow Immuno Assay (NALIA) test kit for COVID-19. While the product was developed and in-house tested to achieve sensitivity compared to antigen LFA kits. However, ICMR validation of the test was not done due to unavailability of testing facility for these Innovative New devices. As the deliverables from the project, additional products/ components like Nucleic Acid Extraction Kit, thermos-stable MMLV-RT & T7-RNA polymerase enzymes were developed, optimized and scaled-up to be supplied as RT-PCR kit components. These components are separately marketed to manufacturers of RT-PCR/ LAMP assays.

Qawach Bio Pvt. Ltd.

15-minute Point-of-care Confirmatory Test for Detection of Viral Load in COVID-19

The current confirmatory diagnosis for COVID-19 is based on RT-PCR. Such tests also have a high turn-around time, i.e. around 2 hrs to give results for a single sample, and also need sophisticated laboratory infrastructure and skilled manpower for its working and interpretation. QAWaCh Bio proposes an alternative to RT-PCR. They have developed a point-of-care antigen-based test, that detects viral load in the suspected population using monoclonal antibodies against spike protein of SARS CoV-2. The test is based on paper technology. The test strip has antibodies against sub-unit 1 and 2 of the spike protein of SARS CoV-2 immobilized on its surface. When viral load is present in the nasal or serum sample, the virus gets captured by these antibodies and gives positive results by indicating a visual colour change. This test does not require any electric power or lab infrastructure for working and gives results within 15 minutes.

A molecular biotech company specializing in the development of Real-time quantitative PCR (qPCR) assays for rapid and affordable diagnosis of disease and research in life sciences. Yaathum Biotech offers a full range of research services, custom designed within the area of real-time PCR (qPCR), nucleic acid extraction, and related technologies for analysing genetic material.

Components & Master Mix (Yaathum Biotech Private Limited.)

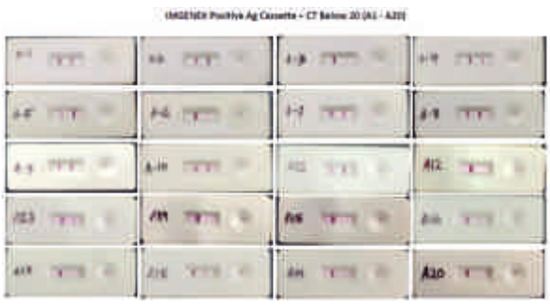
Components & Master Mix by Yaathum Biotech Private Limited

Yaathum Biotech Private Limited

RT-PCR Kit for COVID-19

An indigenous real-time RT-PCR based molecular diagnostic test to detect the SARS-CoV-2 virus; the virus that causes COVID-19 in upper and lower respiratory specimens. The assay is designed for the detection of nucleic acid from SARS-CoV-2 in 2 hours and at a fraction of the current cost of testing. It comprises three primer sets and 3 probes that target 3 regions in genomic RNA of SARS-CoV-2 and primer and probe set for RNAse-P internal positive control.

Imgenex India Pvt. Ltd.



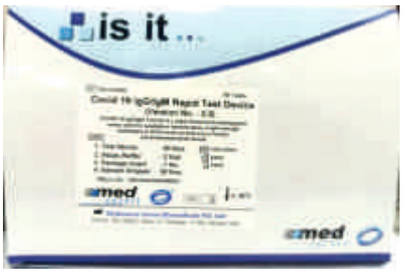
Antibodies SARS CoV2 COVID-19 Proteins and for Serological Tests

Imgenex aimed at the development, commercial manufacturing and market launch of a) COVID-19 recombinant antigens (N and S1-RBD) in bacterial and mammalian expression Systems at the scale of 1 gm per month, and b) monoclonal and polyclonal antibodies (Nucleocapsid, S1-RBD) at the scale of 100 mg per month against structural proteins of SARS-CoV2.

Production at a commercial scale for both the antigens and antibodies got established and achieved early sales through the company's marketing branch Abgenex Pvt. Ltd. During the project the company sold 100 mg of three antibodies (Anti-nucleocapsid, anti-Spike S1 antibody) to diagnostic companies and received committed purchase order of 100 mg antibodies per month for a year.

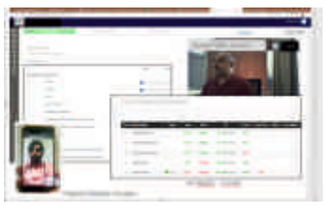
GGSIPU has developed Covid-19 antibody detection test. This is a rapid test which involves qualitative detection of IgM/IgG antibody of SARS-Cov-2 (COVID-19) in human serum / plasma / whole blood. Product is simple and very quick to perform, easy to interpret the results and stable at room temperature for 2 years from date of manufacturing.

GGS Indraprastha University in collaboration with Med source Ozone Biomedicals Private Limited



Development and evaluation of antigens to capture antibodies on Lateral flow immunoassay device for the screening of Covid19 infection

Ubiqare Health Pvt Ltd



Ubiqare's marketed platform was modified and adapted to support COVID workflows and scale of care operations. Built the Back-end, IT Support, Admin Dashboard, Self-registration, Configurability etc specifically to suit COVID-19 work flow was developed. Deployed at one hospital and few districts in and around Bangalore. Platform is named as m-Haas

Affordable Antiviral Coveralls to provide protection to healthcare workers during COVID-19 pandemic Fabiosys Innovations Private Limited

Fabiosys has developed Antiviral Coveralls (Fabium®) which provide Dual protection: Physical barrier protection to stop the viruses and chemical barrier protection to neutralize the viruses. Fabium® is developed using a technology called Hi-PAT, which makes it highly effective against bacteria, viruses, and fungi. Fabium starts working within seconds of contact with the pathogens and destroys ~ 99.9% of them within 30 minutes.

The company has a product called ZeBox , which is an air-decontamination devices.The ZeBox technology has been proven to eliminate a wide spectrum of airborne viruses, including SARS-CoV-2.The technology has been validated by external CROs as well as prestigious academic institutions like the Indian Institute of Science, Bangalore.

A portable protective device to arrest the spread of infection in healthcare and home-care settings

Biomoneta Research Pvt Ltd

ZeBox-Mini

Area Coverage: Upto 100 sq. ft
Airflow rate: 50-75 CFM
Noise: 46 dB(A)
Power usage: 15 W
Weight: 6 Kg
Dimensions: 38 x 9 x 17 (cm)

ZeBox™

Persapien Innovations Private Limited

Activated Water Mist (AWM) based sanitisation technology to prevent spread of Covid-19 by Persapien Innovations Pvt. Ltd.

The objective of the proposal was to develop Activated Water Mist based product as a safe and effective solution for inactivating SARS-CoV-2. The company has manufactured more than 5 units AWM products of different capacities. The AWM product was tested to be 99% effective against microbes. The product has also been tested and validated for long-term usage (continuous operation for a week). They are working with Crompton Greeves to develop their product to fit in the stand fan and are exploring partnership with consumer electrical companies like Eureka Forbes for marketing and sale of the product.

Huwel

Huwel Lifesciences produced and marketed 200 lakhs Covid detection kits, 12 lakh units of Molecular Transport Medium (MTM) and 24 lakh nucleic acid extraction kits for sample preparation.

First Indigenous kit for diagnosis of COVID-19 developed byMylab a BIRAC supported start up in Pune, produced nearly one lakh kits per week.

AMTZ has manufactured 13 Crores RT-PCR tests, 4 Crores Covid-ELISA tests, 1.25 Crores Viral Transport Medium, 3000 units IR Thermometers, 11,000 units Ventilators.

Antibody detection kit by Ubio sold over 1 lakh tests. The two commercialized. products are SENSIT COVID IgG/IgM Kit and SENSIT COVID Antigen Kit.

Dhiti Life Sciences - Fully indigenous Antibody and Antigen detection kit in market.

Fast tracked Review and Funding support under COVID-19 fund

BIRAC also supported Health-Tech Startup solutions for immediate deployment (0-3 months) to address challenges of COVID-19, a Fast track Internal Review Committee was constituted at BIRAC to review and recommend the proposals that can be supported under COVID fund.

Out of the around 61 proposals received the committee recommended funding support to seven Startups with market ready solutions; Aarna Biomedical Products, Alpha Corpuscles, MicroGO, Ubiqare Health, Ayu Devices, Health Sensei and DNA Xperts Private Limited. All these seven startups have commercialised and deployed their products. Additionally, support to two Co-funding partners IKP and CCAMP was also provided for supporting around 14 Startups under the BIRAC's mandate to foster market deployment of innovative solutions addressing Covid-19 challenges.

A holistic solution that comprises a face shield, a face mask, a coverall with fused head coverage, a disposable bag, two shoe covers, two nitrile hand gloves for medical examination and an outer polypack harboring all the above components after UV sanitization.

Aarna Biomedical Products Private Limited

Alfa Corpuscles Private Limited

Face Shield: Protection Against Infective Aerosols

- For Single Use
- Made up of clear PET Plastic
- Provides Comfort Fit with Foam Band

Ayu Devices Pvt. Ltd.

AyuSynk: A smart stethoscope module that can be attached to conventional stethoscope making it digital.

- It enables noise filtering, sound amplification, recording & playback, visual representation and analysis of heart and lung sounds.
- Preserves look and feel of the conventional stethoscope

Two kits were manufactured and deployed

- RT-PCR Kit for the detection of SARS Corona Virus 2019 through in vitro amplification assay designed for highly sensitive, accurate and ultra fast qualitative detection of viral RNA from clinical specimens.
- Xpert COVIDO VTM (Viral Transport Medium) Kit is designed for the efficient collection and transport of clinical samples to the test site for molecular detection

DNA Xperts Pvt. Ltd.

Health Sensei India Pvt. Ltd.

Real-time critical health data monitoring & decision enabling software for clinicians & nurses. It enables easy monitoring of hospital ICUs and wards for improved safety of patients.

- Real time display of numeric vitals and waveforms on mobile phones/ tablets or TVs
- Supports up to 64 ICU Beds

GOassure™ is a patent pending innovative solution that automates hand hygiene, ensures compliance monitoring and saves water. Cleanser readies the hands for optimal sanitization of Alcohol Based Hand Rub [ABHR].

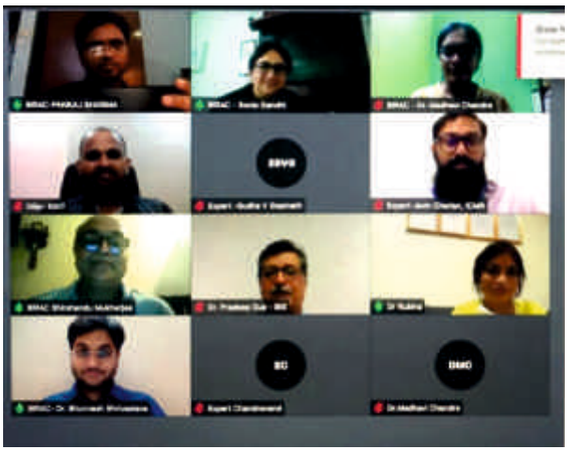
- Contactless & optimized volume dispensed
- Ensures 20 secs of hand hygiene compliance

Micro GO LLP

Ubiqare Health Pvt. Ltd.

Ubiqare's mobility Health case as a service (m-HaaS) platform enables continuity of specialty care from specialist to remote patients.

Hospitals get benefit with patient retention, improved treatment outcomes & geographical outreach. Patients get benefit from continuity of care, easy access to specialist expertise and reduced hospital visits.



GCI SUPPORTED COVID-19 PROGRAMS

COVID-19 Sero Surveillance

- COVID-19 Sero-Surveillance was initiated to understand the seroprevalence of SARS-CoV-2 in India and monitor the trends of transmission. A total population of 25000 is being followed for a period of 12 months at 05 demographic and health surveillance sites across the country supported by GCI and NBM DRIVEN program. The project also focuses on generating evidence on the role of asymptomatic and mild infections in transmission.
- Two projects supported: a) King Edward Memorial Hospital and Research Center, Pune (a site under the NBM DBT DRIVEN program), and b) Translational Health Science and Technology Institute, Faridabad with Tata Institute for Fundamental Research and Kasturba Hospital, Mumbai.

COVID-19 Sewage Surveillance

The program is focusing on the development and testing of protocols for sewage surveillance in India. Two projects are being supported in this program;

a) CMC, Vellore and the Administrative Staff College of India, Hyderabad is working on a joint project to "Establishing a monitoring system for COVID-19 through Environmental Surveillance in sewered and unsewered areas of Hyderabad ".

b) BITS Pilani, is working on wastewater-based epidemiology and screening for COVID-19.

Mobile Diagnostic Labs

The partnership is supporting the establishment of 4 mobile labs to generate proof-of-concept of such labs. These mobile laboratories will provide diagnostic support service to organizations for mitigation of biological emergencies and will provide safe handling and preservation of samples from disease outbreaks or during surveillance.

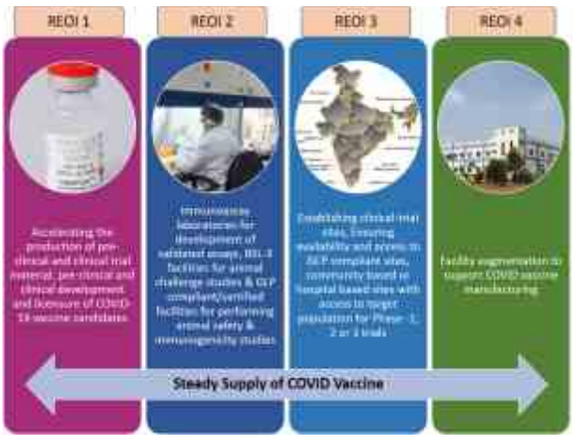
Kawach model is developed by a private company based in Mumbai, Science by Design Lab systems (I) Pvt. Ltd. The mobile lab is deployed at Rajiv GANDHI Centre for Biotechnology, Trivandrum, Kerala.

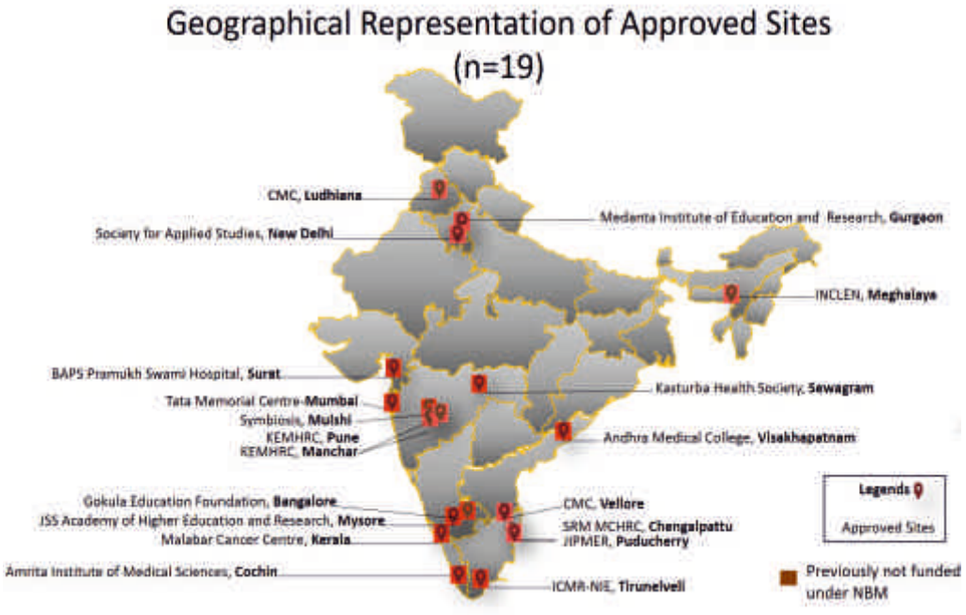
PARAKH model of Defence Food Research Laboratory, Defence Research and Development Organization (DFRL-DRDO), for which Principal Scientific Adviser's (PSAs) office received donations of two chassis from Daimler-Benz Pvt. Limited. The fabrication of two mobile labs was done by DFRL-DRDO industrial partner – the Microflow India Devices Private Limited, Chennai.

One of the two mobile labs has been deployed at IITM, Chennai and other is waiting for vehicle registration for transport to IIT Guwahati.

MISSION COVID SURAKSHA

- **Mission COVID Suraksha supported 19 clinical sites across the country established a volunteer database of more than 1 Lakh healthy volunteers and supported Covid-19 vaccine trials of ZyCoV-D, Corbevax and GEM COVAC-19, Covovax and few other candidates.**
- The Mission also supported establishment and strengthening of **03 immunogenicity assay laboratories and 03 animal challenge facilities**
- To scale-up production capacity of Covaxin, **financial support was provided to Bharat Biotech Industries Ltd. (BBIL) and 2 Public Sector Undertakings (PSUs) to achieve a capacity of nearly 100 million doses/month.** The PSUs included Indian Immunologicals, Hyderabad and Haffkine Biopharmaceuticals, Mumbai. Gujarat





COVID Vaccine Consortium (GCVC), comprising of Hester Biosciences, and Gujarat Biotechnology Research Centre (GBRC), Department of Science and Technology, Govt. of Gujarat. Approximately 9 Cr. doses equivalent to Drug Substance (DS) of COVAXIN® have been filled in from BBIL, Malur Facility. Indian Immunologicals achieved a production capacity of 20 lakh doses/month equivalent Drug Substance (DS) in September 2021. A total of 1.4 Cr. doses equivalent DS was transferred to BBIL by March 2022. GCVC and Haffkine Biopharmaceuticals are expected to further add up 6-7 million doses/month each as and when functional.

SUPPORTING SERVICES

Legal

The Legal Cell of BIRAC provides a wide array of advisory and support services including drafting, reviewing, executing and modifying contracts, agreements and internal policies and ensuring that they are in compliance with all the statutory and legal requirements.

The services of the Legal Cell also includes providing legal guidance for the on-going and new funding programs, providing legal protection and risk management advice to management, managing the legal due diligence process pertaining to the various funding schemes, advising the management on the modalities of national and international co-funding initiatives facilitating technology acquisition, implementation of mission programmes schemes National Biopharma Mission, and Covid Suraksha mission promoting alternative dispute resolution etc.

Internal Control System and their adequacy

The Company has established systems providing adequate internal controls, commensurate with the size and nature of the business.Such systems have been appropriately documented.There is a very clear policy to maintain confidentiality and ensure No-Conflict of Interest.

Human Resources & Administration

The HR & Administration Department in BIRAC is an essential component which is primarily focused on maximizing the potential of the Human resources of the organization to attain specific as well as organizational goals in an effective and efficient manner. It plays an essential role in developing a company's strategy as well as handling the employee-centered activities of an organization.

The HR & Administration Department with its diverse mix of skill sets and its unique perspective on business operations is positioned to add strategic value on critical issues across the employee life span from recruiting and on boarding to talent development and retention.

The HR Strategy of BIRAC is aligned to the concept of transforming culture and envisages powerful interventions in the areas of workforce planning, HR analytics, Employee Engagement, Capacity Building and Skill Development.

HR Department is constantly in the endeavour to induct right people at the right time to meet organizational needs. The department has put concerted efforts in talent management and succession planning practices, strong performance management and training initiatives to ensure that it consistently develops inspiring, strong and credible leadership. **BIRAC is a growing organisation and succession planning is an integral part of the strategic planning process to connect with the long term goals and objectives of the Company and to**

help mitigate risk associated with attrition. A holistic succession plan has been implemented across the organization and an integrated, systematic approach has been adopted for identifying, developing, and retaining capable and skilled employees in line with current and projected organisational objectives.

HR Department reviews the performance of employees in a systematic way and takes it as a developmental tool for all round development of the employee and the organization. Online submission of Annual Performance Appraisal Reports (APAR) in respect of all executives (E1 and above) is activated in the beginning of the financial year and closes in April – May of the following year with end year appraisal and review. Based on the performance ratings, the contracts of employees are renewed and promotions are awarded. DPC is convened twice a year and assesses the suitability of employees for contract renewals and promotions.

Learning and development programs are designed for the employees to upgrade their skills both in their domain areas and the soft skills. These programs have played a key role to upgrade the workforce to adopt new technologies, systems and practices and make the workforce ready to face the future challenges. BIRAC is focussed on enhancing skill development of its employees by organizing in-house trainings and identifying domain specific training in reputed training institutes. In 2021-22, more than 500 man-days training have been imparted to BIRAC Employees including domain specific trainings and soft skill trainings.

Human Resource & Administration Department in BIRAC strives on implementing employee engagement activities through which employees feels a strong emotional and personal connection to their workplace which in turn reduces staff turnover, improve productivity and efficiency. National events such as Swachhata Pakhwada, Hindi Pakhwada, Yoga Day, Constitution Day, Women's Day etc. are also observed in BIRAC with fervour and zeal.

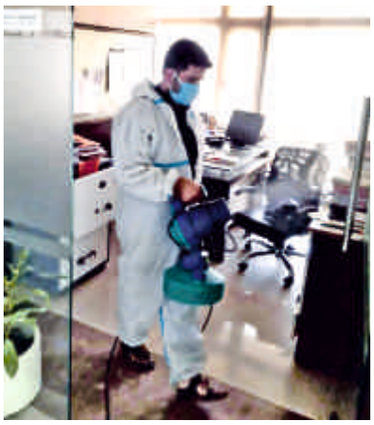
Swachhta Pakhwada

BIRAC observed Swachhata Pakhwada from 1st May to 15th May 2021. Swachhata pledge was administered virtually by Managing Director - BIRAC. All employees have taken a pledge to devote 100 hours in a year as 'Shramadaan' to ensure cleanliness of the work area & surroundings. The message and the objectives of 'Swachh Bharat Mission' were shared among all the employees.

In order to contain spread of COVID-19 at workplace, routine cleaning and disinfection of office premises especially high-touch surfaces are being carried out in timely manner in BIRAC.

Safeguarding the health of employees is BIRAC's top priority, therefore, sanitization of the entire office premises is being carried out on weekly basis.

BIRAC has also educated its workforce by issuing Circulars in line with Government Guidelines and regularly communicated with its employees.



Also, the process for a paperless office has been initiated by implementation of E-Office platform in BIRAC, which shall not only reduce carbon footprints by limiting the printouts and photocopies but it's significant for contributing to a sustainable society.

Yoga Day

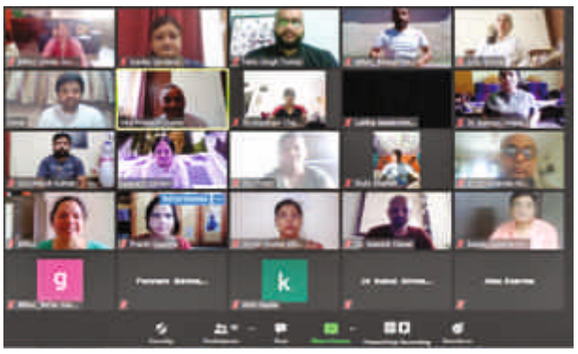
Biotechnology Industry Research Assistance Council (BIRAC) observed 7th International Yoga Day on 21st June 2021.

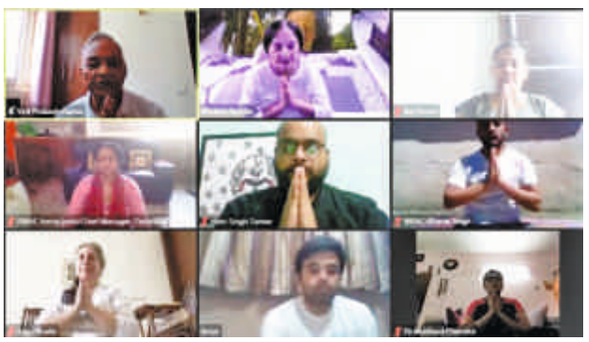
A guided Yoga session through a virtual platform was organized for BIRAC workforce and Yoga's were for performed as per the Common Yoga Protocol (CYP) issued by Ministry of AYUSH, Government of India.

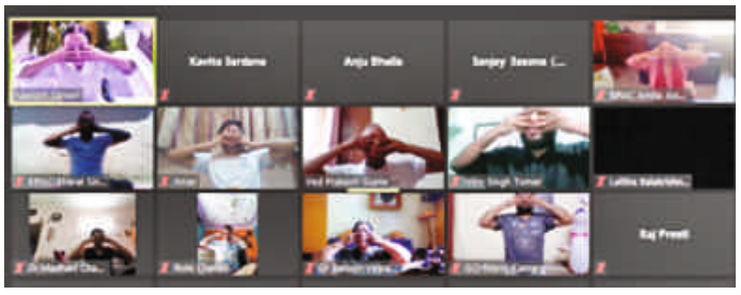
All officials practiced yoga with enthusiasm as guided by the Yoga instructor, who alongwith guiding through the series of yogasans enriched the emoloyees with the value and benefits of this ancient and modern practice.

Officials were also encouraged to participate in activities being organized by the Ministry of AYUSH.

In addition to this, coverage of Yoga Day was uploaded on Twitter handle and Website of BIRAC.

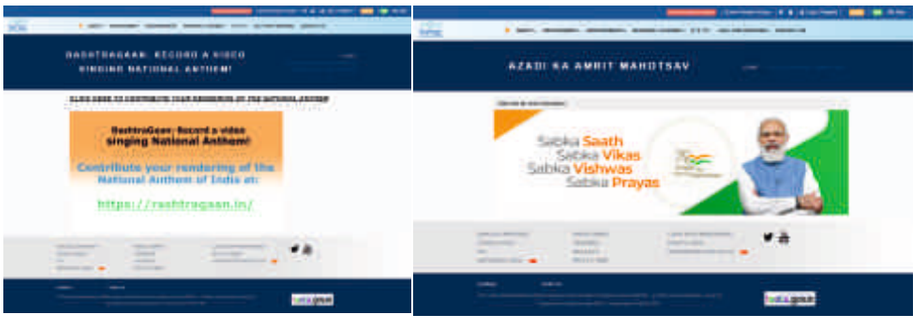






Azadi ka Amrit Mahotsav (AKAM)

BIRAC celebrated Azadi ka Amrit Mahotsav (AKAM) by rendering the "National Anthem of India". Officials of BIRAC recorded the National Anthem on a dedicated portal of Department of Culture. BIRAC disseminated the information by running a band/ticker 'Contribute your rendering of the National Anthem of India at: https://rashtragaan.in/' on its website in order to promote the campaign at a large scale.



50+ roadshows were organized by BioNEST Incubation Centres to create awareness about scientific achievements during past 75 years and celebrate the same.

Workshop on POSH

As per the provisions of "Sexual Harassment of women at work place (Prevention, Prohibition and Redressal) Act, 2013", BIRAC organises workshops and awareness programmes at regular intervals for sensitising officials.

In-house Workshop on Prevention of Sexual Harassment (POSH) at Workplace has been organised on 13th August 2021.

The workshop equipped officials with necessary skills to combat sexual harassment faced in their daily working life and create a stress free work environment conducive for higher performance. It also helped to understand the legal framework for addressing sexual harassment at the workplace.

Hindi Pakhwada

Hindi Diwas is celebrated on 14 September with great pride and vigour as Hindi was adopted as the Official Language of our nation on September 14, 1949.

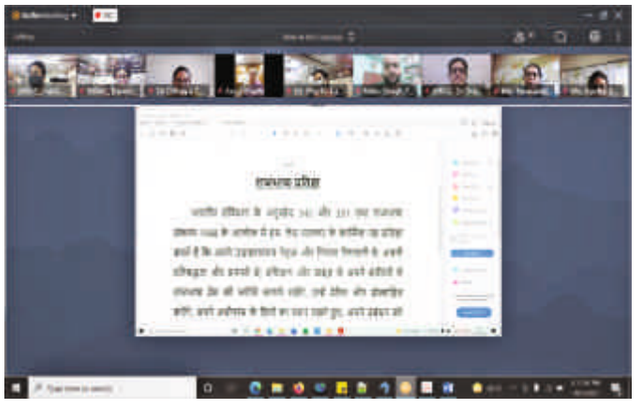
This year BIRAC observed Hindi Pakhwada from 10th September 2021 to 30th September 2021. To promote and propagate the use of official language, following competitions / activities were organized online during the Hindi month:

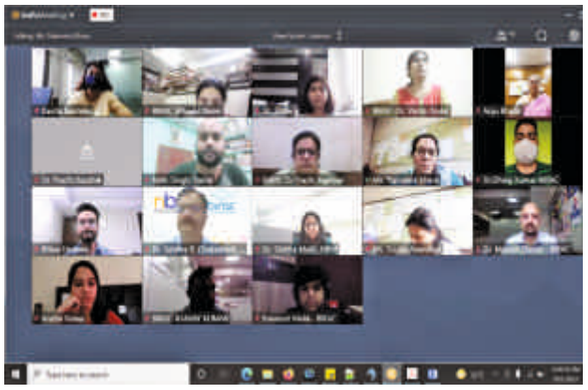
a) Hindi workshop on "Importance of Official Language" for the launch of Hindi Pakhwada.

b) Competition on Slogan Writing and Translation of administrative terminology & phrases.

c) Maximum Hindi email communication till 30 September 2021.

The closing ceremony of the Pakhwada was held on 01st October 2021. Managing Director BIRAC administered the 'Rajbhasha Pratigya' where officials of BIRAC pledged to use, promote and propagate Hindi. All officials participated with great enthusiasm in this event.





Vigilance Awareness

BIRAC observed Vigilance Awareness Week from 26th October 2021 to 01st November 2021. On account of Vigilance Awareness Week 2021, "Integrity Pledge" was administered by the workforce of BIRAC in the presence of Managing Director, BIRAC at BIRAC Office. BIRAC also disseminated the information by displaying e-banners at prominent locations in office.

Women's Day

International Women's Day is celebrated on March 8 to spread the message of gender equality and work together in making a better society where there is no gender bias. To celebrate the event and to make the day fun filled for the women employees at BIRAC, few games were organized in the morning that included Quiz based on the women achievers and Musical chair competition.

The competitions were executed successfully by following all the necessary Covid protocols.

The evening session was chaired by Dr. Rajesh Gokhale (Secretary DBT & Chairman BIRAC) in presence of Dr. Alka Sharma (Sr. Advisor DBT & MD BIRAC), Directors (Operations, Finance), Heads of all the departments of BIRAC and all the employees.

The session was organized in hybrid mode. The evening session had a brief presentation on "Gender equality today for sustainable tomorrow" followed by a talent hunt program which consisted of poetry, painting and singing competitions for all the employees of BIRAC. The theme for the talent hunt was "Naari Shakti". Prizes were distributed to the winners of all the competition categories. The program ended with concluding remarks from Dr. Rajesh Gokhale (Secretary DBT & Chairman BIRAC).

Workshop on Official Language Act

In line with the implementation of Official Language Act, a workshop was organised in each quarter for BIRAC employees to acquaint the employees with the importance and provisions of the Official Language. The workshop helped employees in understanding the constitutional provisions of Official Language Act and on implementing official language in day to day official correspondence.

With regular communication and sustained efforts HR and Admin Department is ensuring that employees are aligned on achieving BIRAC's strategic mission, while keeping employees engaged and motivated. It strongly believes in fostering a culture of trust and mutual respect in all its employees and seeks to ensure that BIRAC's core values and principles are understood by all.

REPORT ON CORPORATE GOVERNANCE

REPORT ON CORPORATE GOVERNANCE

1. BIRAC PHILOSOPHY ON GUIDELINES ON CORPORATE GOVERNANCE

Corporate Governance refers to a set of systems, principles and processes by which a company is governed. They provide the guidelines as to how a company can be directed or be controlled such that it can fulfill its goals and objectives in a manner that adds to the value of the company and is also beneficial for all the stakeholders in the long term. Stakeholders in this case would include everyone ranging from the board of directors, management, shareholders to customers, employees and society. BIRAC is committed to sound principles of Corporate Governance with respect to all its policies, practices and procedures. The Company's policies clearly reflect its values of transparency, professionalism and accountability. BIRAC consistently strives to uphold these values so as to generate long term economic value to all the stakeholders.

2. BOARD OF DIRECTORS

The Board of Directors currently consists of 5 (Five) Directors viz. an Executive Chairman, an Executive Managing Director, Two Functional Directors and a Government Nominee Director.

Six Board meetings of the Company were held on the following dates: April, 26, 2021, September 20, 2021, October, 27, 2021, November 30, 2021, December 23, 2021 and March, 11, 2022.

The details of the Directors and the Board meetings attended are as follows till 31st March, 2022:

Name of the Director	Category	Directorships in other companies	Member/ Chairman of Committees in other companies		Board Meetings Attended (Nos.)	Attendance at last AGM
			Member	Chairman		
*Dr. Renu Swarup	Chairperson (Executive)	Nil	Nil	Nil	3	Not Applicable
@Dr. Rajesh S. Gokhale	Chairman (Executive)	Nil	Nil	Nil	3	Yes
**Ms. Anju Bhalla	Managing Director (Executive)	Nil	Nil	Nil	2	Not Applicable
***Dr. Alka Sharma	Managing Director (Executive)	3	3	Nil	4	Yes
#Dr. Subhra Ranjan Chakrabarti	Director (Operations)	Nil	Nil	Nil	2	Not Applicable
##FCA Ms. Nidhi Shrivastava	Director (Finance)	Nil	Nil	Nil	2	Not Applicable
Shri Vishvajit Sahay	Government Nominee Director	1	Nil	Nil	6	Yes

*Dr. Renu Swarup held the position of Chairperson till October, 31, 2021

@ Dr. Rajesh S. Gokhale was Appointed as Chairman w.e.f November, 1, 2021

***Dr. Alka Sharma was appointed as Managing Director on additional charge w.e.f. October 10, 2021

**Ms. Anju Bhalla hold the position of Managing Director on additional charge till October 9, 2021

Dr. Subhra Ranjan Chakrabarti was appointed as Director (Operations) w.e.f. December 14, 2021

FCA Ms. Nidhi Shrivastava was appointed as Director (Finance) w.e.f. December 15, 2021

None of the Directors are members of more than 10 Committees and/ or act as Chairman of more than 5 Committees as prescribed under the Guidelines on Corporate Governance for Central Public Sector Enterprises (CPSEs) issued by the Department of Public Enterprises (DPE).

There are no pecuniary relationships or transactions of the non-executive directors of the Company.

3. AUDIT COMMITTEE

During the year, BIRAC did not have an Audit Committee as the term of the Independent Directors ended on March 15, 2020. The appointment of non-official directors is in process with the Department of Public Enterprises (DPE).

4. REMUNERATION COMMITTEE

During the year, BIRAC did not have the Remuneration Committee as the term of the Independent Directors ended on March 15, 2020. The appointment of non-official directors is in process with the Department of Public Enterprises (DPE).

5. BOARD PROCEDURE

The meetings of the Board are generally held at the Company's registered office at New Delhi. The Company complies with the statutory requirements for holding board meetings. Apart from the statutory matters requiring Board's approval, all major decisions including key financial ratios, actual operations, feedback reports and minutes of meetings are regularly placed before the Board.

6. SHAREHOLDER INFORMATION AS ON MARCH 31, 2022

Category Code	Category of shareholders	Total number of shares	Total value of shares (in Rs.)	Total shareholding as a percentage of total number of shares
Shareholding of Promoter and promoter category	President of India	9000	90,00,000	90
	Dr. Rajesh S. Gokhale (held on behalf of the President of India)	900	9,00,000	9
	Dr. Alka Sharma (held on behalf of the President of India)	100	1,00,000	1
	GRAND TOTAL	**10000**	**1,00,00,000**	**100**

7. GENERAL BODY MEETINGS

The details of general body meetings are as follows:

Period ended on	Venue	Date	Time
31.03.2020	MTNL Building, 1st Floor, 9, CGO Complex, Lodhi Road, New Delhi-110003	18.12.2020	05:45 p.m.
31.03.2021	Department of Biotechnology, 2, CGO Complex, 7th Floor, Lodhi Road, New Delhi-110003	30.11.2021	04.30 p.m.
31.03.2022	1st Floor, MTNL Building, 9, CGO Complex, Lodhi road, Delhi-110003	24.11.2022	02:00 p.m.

8. DISCLOSURES (AS PER DPE GUIDELINES)

a) The Company has not entered into any material, financial or commercial transaction with the Directors or the management or their relatives in which they are either directly or through their relatives interested as directors and/or partners.

b) The Company has complied with applicable rules and regulations and no penalties or strictures were imposed on the Company by any statutory authority during the last two years.

c) The Company has complied with the applicable provisions of the guidelines of Corporate Governance.

d) Department of Public Enterprises vide its OM dated 29.07.2010, directed that all CPSEs will submit annual compliance report within 30 days from the end of the preceding financial year to the concerned ministry which consolidate the same for all CPSEs under its administrative control and forward it to the DPE by 30th June every year. BIRAC has submit an annual compliance report on implementation of policies and guidelines issued by DPE by 29th April, 2022 for financial year 2021-22. In compliance of the directives of DPE, BIRAC submitted its compliance report to the Department of Biotechnology for onward transmission to DPE.

e) No item of expenditure was debited in the books of accounts which was not for the purpose of the organisation.

f) No expenses of a personal nature of the Members of the Board of Directors were incurred out of the funds of the Company.

g) BIRAC has got Excellent Rating in Corporate Governance for FY 2020-21

9. MEANS OF COMMUNICATION

Members/ shareholders are apprised about the performance of the Company at each Annual General Meeting. The Company is an unlisted, private limited Section 8 Company and therefore, the need to communicate its quarterly or half-yearly results does not arise.

10. COMPLIANCE CERTIFICATE

In terms of Clause 8.2 of the DPE Guidelines on Corporate Governance, a certificate from a practising Company Secretary, M/s. JK Gupta & Associates, Company Secretaries, New Delhi confirming the compliance of the provisions of Corporate Governance forms a part of the report on Corporate Governance.

11. REMUNERATION OF DIRECTORS

The total remuneration paid to functional director- as on 31st March, 2022:

Name of Functional the Director	Basic Pay (in Rs.)	DA (in Rs.)	HRA (in Rs.)	Prequisites (in Rs.)	Total (Information) from the date of appointment till 31st March, 2022 (in Rs.)
Dr. Subhra Ranjan Chakrabarti	6,24,516	1,67,711	1,64,284	2,18,581	11,75,092
FCA Ms. Nidhi Shrivastava	5,98,710	1,62,963	1,58,090	2,09,548	11,29,311

12. CODE OF CONDUCT

BIRAC is committed to conduct business in accordance with the highest standards of business ethics and compliance with the applicable laws, rules and regulations. A Code of Business Conduct and Ethics in accordance with the DPE Guidelines has been laid down for all Board members and senior management.

All the members of the Board and senior management personnel have affirmed compliance with the same for the financial year 2021-22. The Code of Business Conduct and Ethics has also been put up on the website of the Company (www.birac.nic.in)

DECLARATION AS REQUIRED UNDER THE DPE GUIDELINES ON CORPORATE GOVERNANCE

"All the members of the Board and Senior Management Personnel have affirmed compliance of the Code of Business Conduct & Ethics for Board Members and Senior Management for the financial year ended on March 31, 2022".

Sd/-

Dr. Alka Sharma
(Managing Director)

Sd/-

FCA Ms. Nidhi Shrivastava
Director (Finance)

Date: 24th November, 2022
Place: New Delhi

Annexure - 1

ANNUAL REPORT ON CSR ACTIVITIES

1. Brief outline on CSR Policy of the Company:

Biotechnology Industry Research Assistance Council (BIRAC) is a not-for-profit Section 8, Schedule B, Public Sector Enterprise, set up by Department of Biotechnology (DBT), Government of India.

The Board of BIRAC at its 45th Board Meeting held on February 24, 2021 approved the Corporate Social Responsibility Policy (CSR Policy). The CSR Policy of the BIRAC was formulated in line with the provisions of the Companies Act, 2013 read with the Companies (Corporate Social Responsibility) Rules, 2014 and 'DPE Guidelines'.

Vision and Mission Statement for CSR Policy:

Vision Statement: BIRAC, through its CSR initiatives, will continue to enhance value creation in the society and in the community in which it operates, through its services, conduct & initiatives, so as to promote sustained growth for the society and community, in fulfilment of its role as a Socially Responsible CPSE.

Mission Statement: In line with the Companies Act, 2013 and DPE guidelines this policy aims at developing Company specific social responsibility strategies in long, medium and short term period with built in mechanism for implementation and monitoring towards creating a Societal impact.

2. **Composition of CSR Committee:** As per Companies (Amendment) Act, 2020 (applicable w.e.f. 22nd January, 2021), if the amount to be spent by a company does not exceed fifty lakh rupees, the requirement for constitution of the CSR Committee shall not be applicable and the functions of such Committee provided under Section 135 shall be discharged by the Board of Directors of the company.

   Hence, as per the above-mentioned provision, the Board in its 49th Board Meeting held on November, 30, 2021 has approved the budgetary allocation of Rs. 10,80,794/- being 2% of the net surplus/profit made during three immediately preceding financial years for CSR activities During financial year 2021-22, the Board of Directors authorised the Managing Director to examine the proposals as Chairperson of the CSR Internal Committee.. Further, the CSR Committee members deliberated and approved that the CSR Fund for the Financial Year 2021-22 of Rs 10,80,794 (Rupees Ten Lakh Eighty Thousand Seven Hundred Ninety-Four only) be deployed to Swachh Bharat Kosh which is one of the listed activities specified in Schedule VII (i) of Companies Act, 2013.

3. Web-link where Composition of CSR Internal committee, CSR Policy and CSR projects approved by the board are disclosed on the website of the company: www.birac.nic.in.

4. Details of Impact assessment of CSR projects carried out in pursuance of sub-rule (3) of rule 8 of the Companies (Corporate Social responsibility Policy) Rules, 2014, if applicable (attach the report): **Not Applicable**

5. Details of the amount available for set off in pursuance of sub-rule (3) of rule 7 of the Companies (Corporate Social responsibility Policy) Rules, 2014 and amount required for set off for the financial year, if any: **Not Applicable**

Sl. No.	Financial Year	Amount available for set-off from preceding financial years (in Rs.)	Amount required to be set-off for the financial year, if any (in Rs.)
Not Applicable			

6. Average net profit of the company as per section 135(5) : **Rs. 5,40,39,714.66/-**

7. (a) Two percent of average net profit of the company as per section 135(5) **: Rs. 10,80, 794/-**

   (b) Surplus arising out of the CSR projects or programmes or activities of the previous financial years: **Not Applicable**

   (c) Amount required to be set off for the financial year, if any : **Not Applicable**

   (d) Total CSR obligation for the financial year (7a+7b- 7c) : **Rs. 10,80,794/-**

8. (a) CSR amount spent or unspent for the financial year:

Total Amount Spent for the Financial Year (in Rs.)	Amount Unspent (in Rs.)				
	Total Amount transferred to Unspent CSR Account as per section 135(6)		Amount transferred to any fund specified under Schedule VII as per second proviso to section 135(5)		
	Amount	Date of transfer	Name of the Fund	Amount	Date of transfer
10,80,794/-	Not Applicable				

(b) Details of CSR amount spent against ongoing projects for the financial year

(1)	(2)	(3)	(4)	(5)		(6)	(7)	(8)	(9)	(10)	(11)	
Sl. No	Name of the Project	Item from the list of activities in Schedule VII to the Act	Local area (Yes/ No)	Location of the project		Amount allocated for the project (in Rs.)	Amount spent in the current financial Year (in Rs.)	Amount spent in the current financial Year (in Rs.)	Amount transferred to Unspent CSR Account for the project as per Section 135(6) (in Rs.)	Mode of Impleme-ntation- Direct (Yes/No)	Mode of Implementation- Through Implementing Agency	
				State	District						Name	CSR Regist-ration number
Not Applicable												

(c) Details of CSR amount spent against other than ongoing projects for the financial year:

(1)	(2)	(3)	(4)	(5)		(6)	(7)	(8)	
Sl. No	Name of the Project	Item from the list of activities in Schedule VII to the Act	Local area (Yes/ No)	Location of the project		Amount allocated for the project (in Rs.)	Mode of Impleme-ntation- Direct (Yes/ No)	Mode of Implementation- Through Implementing Agency	
				State	District			Name	CSR Regist-ration number
1.	Contribution to Swachh Bharat Kosh	Item (i)	No	All India	All India	10,80,795	Yes	Swachh Bharat Kosh	NA
					Total	**10,80,795**			

(d) Amount spent in Administrative Overheads : **Nil**

(e) Amount spent on Impact Assessment, if applicable : **Nil**

(f) Total amount spent for the Financial Year (8b+8c+8d+8e) : **Rs. 10,80,795/-**

(g) Excess amount for set off, if any : **Nil**

Sl.No.	Particular	Amount (in Rs.)
(i)	Two percent of average net profit of the company as per section 135(5)	10,80,794/-
(ii)	Total amount spent for the Financial Year	10,80,795/-
(iii)	Excess amount spent for the financial year [(ii)-(i)]	Nil
(iv)	Surplus arising out of the CSR projects or programmes or activities of the previous financial years, if any	Nil
(v)	Amount available for set off in succeeding financial years [(iii)-(iv)]	Nil

9. (a) Details of Unspent CSR amount for the preceding three financial years:

Sl. No.	Preceding Financial Year	Amount transferred to Unspent CSR Account under section 135 (6) (in Rs.)	Amount spent in the reporting Financial Year (in Rs.).	Amount transferred to any fund specified under Schedule VII as per section 135(6), if any			Amount remaining to be spent in succeeding financial years (in Rs.)
				Name of the Fund	Amount (in Rs)	Date of transfer	
Not Applicable							

(b) Details of CSR amount spent in the financial year for ongoing projects of the preceding financial year(s):

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Sl. No.	Project ID.	Name of the Project	Financial Year in which the project was commenced	Project duration	Total amount allocated for the project (in Rs.)	Amount spent on the project in the reporting Financial Year (in Rs)	Cumulative amount spent at the end of reporting Financial Year. (in Rs.)	Status of the project- Completed / Ongoing
Not Applicable								

10. In case of creation or acquisition of capital asset, furnish the details relating to the asset so created or acquired through CSR spent in the financial year (asset-wise details): Not Applicable

(a) Date of creation or acquisition of the capital asset(s): Not Applicable

(b) Amount of CSR spent for creation or acquisition of capital asset: Not Applicable

(c) Details of the entity or public authority or beneficiary under whose name such capital asset is registered, their address etc.: Not Applicable

(d) Provide details of the capital asset(s) created or acquired (including complete address and location of the capital asset): Not Applicable

11. Specify the reason(s), if the company has failed to spend two per cent of the average net profit as per section 135(5): Not Applicable

Sd/-

Dr. Alka Sharma
(Managing Director)

Sd/-

FCA Ms. Nidhi Shrivastava
Director (Finance)

Date: 24th November, 2022

Place: New Delhi

CERTIFICATE OF COMPLIANCE OF CORPORATE GOVERNANCE AS PER THE GUIDELINES OF DEPARTMENT OF PUBLIC ENTERPRISES (DPE) BY A COMPANY SECRETARY IN WHOLE TIME PRACTICE

To,
The Members,
BIOTECHNOLOGY INDUSTRY RESEARCH ASSISTANCE COUNCIL
MTNL Building, 1st Floor, 9 CGO Complex,
Lodhi Road, New Delhi 110003

We have examined the compliance of the conditions of Corporate Governance by **Biotechnology Industry Research Assistance Council, (hereinafter referred as 'the Company')** for the year ended on 31st March 2022 as stipulated in the Guidelines of Corporate Governance for Central Public Sector Enterprises (CPSEs) issued by Department of Public Enterprises (DPE) vide its order dated May 14, 2010.

The compliance of Conditions of Corporate Governance is the responsibility of Management. Our examination was limited to procedures and implementation thereof, adopted by the Company for ensuring the compliance of the conditions of corporate governance as stipulated in above mentioned guidelines. It is neither an audit nor an expression of opinion on the financial statements of the Company.

In our opinion and to the best of our information and according to the explanations given to us, we hereby certify that the Company has complied with the conditions of corporate governance as stipulated in the abovementioned Guidelines for the period under review ***subject to the following:***

Composition of Board of Director(s) & Committee(s)-

*T*he current constitution of Board of Directors of the Company is not as per DPE Guidelines on Corporate Governance due to vacancy in sanctioned position of Non-Official Independent Directors since 15th March, 2020. As informed to us,the Company has sent representation to DPE through Administrative Ministry. Matter concerning appointment of Independent Directors pending with DPE.

The Company is not having Audit Committee nor Remuneration Committee, during the period under review. However, it was informed to us that the company cannot re-constitute the Audit Committee nor Remuneration committee due to non-appointment of Non-official Independent Directors. Matter concerning appointment of Independent Directors pending with DPE.

During the period under review, the Chairperson's speech does not contain statement on compliance with Corporate Governance guidelines/norms as the final corporate governance rating has not been released by DPE for the year 2020-21 till the date of 9th AGM.

During the period under review, The CG Report for Quarter-1 (April' 21 to June' 21) was submitted after the due date i.e on 2nd August, 2021.

We further state that such compliance is neither an assurance to the future viability of the Company nor of the efficiency or effectiveness with which the Management has conducted the affairs of the Company.

For J. K. Gupta & Associates
(Company Secretaries)

Sd/-
JITESH GUPTA
(Proprietor)
FCS No. 3978
C P No.: 2448
PR No. :PR-902/2020
UDIN: F003978D000837393

Date: 30.08.2022
Place: New Delhi

AUDITORS' REPORT
&
ANNUAL ACCOUNTS

Lunawat & Co
Chartered Accountants

INDEPENDENT AUDITOR'S REPORT

To the Members of Biotechnology Industry Research Assistance Council

Report on the Standalone Financial Statements

Opinion

We have audited the accompanying standalone financial statements of **Biotechnology Industry Research Assistance Council** which comprise the Balance Sheet as at March 31, 2022, the Statement of Income and Expenditure, the Cash Flow Statement and notes to accounts for the year then ended, and a summary of significant accounting policies and other explanatory information.

In our opinion and to the best of our information and according to the explanations given to us, the aforesaid standalone financial statements give the information required by the Act in the manner so required and give a true and fair view in conformity with the accounting principles generally accepted in India including the Accounting Standards, of the state of affairs of the Company as at 31st March, 2022, and its Surplus and its cash flows for the year ended on that date.

Basis of Opinion

We conducted our audit in accordance with the Standards on Auditing (SAs) specified under section 143(10) of the Companies Act, 2013. Our responsibilities under those Standards are further described in the Auditor's Responsibilities for the Audit of the Financial Statements section of our report. We are independent of the Company in accordance with the Code of Ethics issued by the Institute of Chartered Accountants of India together with the ethical requirements that are relevant to our audit of the financial statements under the provisions of the Companies Act, 2013 and the Rules thereunder, and we have fulfilled our other ethical responsibilities in accordance with these requirements and the Code of Ethics. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

Management's Responsibility for the Standalone Financial Statements

The Company's Board of Directors is responsible for the matters stated in section 134(5) of the Companies Act, 2013 ("the Act") with respect to the preparation of these standalone financial statements that give a true and fair view of the financial position and financial performance including other comprehensive income, cash flow and changes in equity of the Company in accordance with the accounting principles generally accepted in India, including the Accounting Standards prescribed under section 133 of the Act.

This responsibility also includes maintenance of adequate accounting records in accordance with the provisions of the Act for safeguarding of the assets of the Company and for preventing and detecting frauds and other irregularities; selection and application of appropriate accounting policies; making judgments and estimates that are reasonable and prudent; and design, implementation and maintenance of adequate internal financial controls, that were operating effectively for ensuring the accuracy and completeness of the accounting records, relevant to the preparation and presentation of the standalone financial statements that give a true and fair view and are free from material misstatement, whether due to fraud or error.

In preparing the financial statements, management is responsible for assessing the entity's ability to continue as a going concern, disclosing, as applicable, matters related to going concern and using the going concern basis of accounting unless management either intends to liquidate the entity or to cease operations, or has no realistic alternative but to do so.

Those charged with governance are responsible for overseeing the entity's financial reporting process.

Auditors' Responsibility

Our objectives are to obtain reasonable assurance about whether the financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes our opinion. Reasonable assurance is a high

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Website: www.lunawat.com, E-mail: karampura@lunawat.com

level of assurance, but is not a guarantee that an audit conducted in accordance with SAs will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these financial statements.

As part of an audit in accordance with SAs, we exercise professional judgment and maintain professional skepticism throughout the audit. We also:

- Identify and assess the risks of material misstatement of the financial statements, whether due to fraud or error, design and perform audit procedures responsive to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for our opinion. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control.
- Obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances.
- Evaluate the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by management.
- Conclude on the appropriateness of management's use of the going concern basis of accounting and, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the Company's ability to continue as a going concern. If we conclude that a material uncertainty exists, we are required to draw attention in our auditor's report to the related disclosures in the financial statements or, if such disclosures are inadequate, to modify our opinion. Our conclusions are based on the audit evidence obtained up to the date of our auditor's report. However, future events or conditions may cause the Company to cease to continue as a going concern.
- Evaluate the overall presentation, structure and content of the financial statements, including the disclosures, and whether the financial statements represent the underlying transactions and events in a manner that achieves fair presentation.

We communicate with those charged with governance regarding, among other matters, the planned scope and timing of the audit and significant audit findings, including any significant deficiencies in internal control that we identify during our audit.

We also provide those charged with governance with a statement that we have complied with relevant ethical requirements regarding independence, and to communicate with them all relationships and other matters that may reasonably be thought to bear on our independence, and where applicable, related safeguards.

Report on Other Legal and Regulatory Requirements

1. As required by the Companies (Auditor's Report) Order, 2020 ("the Order") issued by the Central Government of India in terms of sub-section (11) of section 143 of the Companies Act 2013, in our opinion the said order in not applicable to the company since it is a company registered under section 8.
2. As required by Section 143(5) of the Act, we have considered the directions & sub-directions issued by the Comptroller & Auditor General of India. We give our report in the attached **Annexure "A".**
3. As required by section 143(3) of the Act, we report that:
   (a) We have sought and obtained all the information and explanations which to the best of our knowledge and belief were necessary for the purpose of our audit;
   (b) In our opinion, proper books of account as required by law have been kept by the Company so far as it appears from our examination of those books.
   (c) The Balance Sheet, the Statement of Income and Expenditure and the Cash Flow Statement dealt with by this Report are in agreement with the books of account.

(d) In our opinion, the aforesaid standalone financial statements comply with the Accounting Standards prescribed under Section 133 of the Act.

(e) On the basis of the written representations received from the Directors as on March 31, 2022 taken on record by the board of Directors, none of the directors is disqualified as on March 31, 2022 from being appointed as a director in terms of sub section (2) of section 164 of the Act.

(f) With respect to adequacy of the internal financial controls over financial reporting of the company and the operating effectiveness of such controls, refer to our separate report in **Annexure "B";**

(g) With respect to the other matters to be included in the Auditor's Report in accordance with Rule 11 of the Companies (Audit and Auditors) Rules, 2014, in our opinion and to the best of our information and according to the explanations given to us:

i) The Company does not have any pending litigations which would impact its financial position.

ii) The Company did not have any long-term contracts including derivative contracts for which there were any material foreseeable losses.

iii) There were no amounts which were required to be transferred to the Investor Education and Protection Fund by the Company.

iv) (a) The Management has represented that, to the best of it's knowledge and belief, other than as disclosed in the notes to the accounts, no funds have been advanced or loaned or invested (either from borrowed funds or share premium or any other sources or kind of funds) by the company to or in any other person(s) or entity(ies), including foreign entities ("Intermediaries"), with the understanding, whether recorded in writing or otherwise, that the Intermediary shall, whether, directly or indirectly lend or invest in other persons or entities identified in any manner whatsoever by or on behalf of the company ("Ultimate Beneficiaries") or provide any guarantee, security or the like on behalf of the Ultimate Beneficiaries.

(b) The Management has represented that, to the best of it's knowledge and belief, other than as disclosed in the notes to the accounts, no funds have been received by the company from any person(s) or entity(ies), including foreign entities ("Funding Parties"), with the understanding, whether recorded in writing or otherwise, that the company shall, whether, directly or indirectly, lend or invest in other persons or entities identified in any manner whatsoever by or on behalf of the Funding Party ("Ultimate Beneficiaries") or provide any guarantee, security or the like on behalf of the Ultimate Beneficiaries.

(c) Nothing has come to our notice that has caused us to believe that the representations under sub-clause (i) and (ii) contain any material mis-statement.

v) No dividend has been declared or paid by the company during the year.

For Lunawat & Co.
Chartered Accountants
F.R. No. 000629N

per CA. Ramesh Kumar Bhatia
Partner
M. No. 080160

Place: New Delhi
Date: 29th July' 2022
UDIN: 22080160AOIOVO5543

ANNEXURE "A"

Lunawat & Co
Chartered Accountants

TO THE INDEPENDENT AUDITORS' REPORT

Audit Report of Biotechnology Industry Research Assistance Council for the period 01.04.2021 to 31.03.2022 pursuant to Directions/Sub-Directions under section 143(5) of the Companies Act 2013

Directions for the year 2021-22

1. Whether the company has system in place to process all the accounting transactions through IT system? If yes, the implications of processing of accounting transactions outside IT system on the integrity of the accounts along with the financial implications, if any, may be stated.

   As informed to us, all accounting transaction is processed through company owned IT System.

2. Whether there is any restructuring of an existing loan or cases of waiver/write off of debts/ loans/interest etc. made by a lender to the company due to the company's inability to repay the loan? If yes, the financial impact may be stated. Whether such cases are properly accounted for? (In case, lender is a Government company, then this direction is also applicable for statutory auditor of Lender Company).

   There is no such case of restructuring of an existing loan or cases of waiver/write off of debts/loans/interest etc. by any lender to the company.

3. Whether funds (grants/subsidy etc.) received/ receivable for specific schemes from Central/ State government or its agencies were properly accounted for/utilized as per its term and conditions? List the cases of deviation.

   Yes, funds received/ receivable for specific schemes from central/state agencies have been properly accounted for/utilized as per its terms and conditions.

For Lunawat & Co.
Chartered Accountants
F.R. No.000629N

per CA. Ramesh Kumar Bhatia
Partner
M. No. 080160

Place: New Delhi
Date: 29th July' 2022

109, Magnum House-1, Karampura Complex, New Delhi-110015
Mobile: 09953508197, 09868158995
Website: www.lunawat.com, E-mail: karampura@lunawat.com

ANNEXURE "B"

Lunawat & Co
Chartered Accountants

TO THE INDEPENDENT AUDITORS' REPORT

Report on the Internal Financial Controls under Clause (i) of Sub-section 3 of Section 143 of the Companies Act, 2013 ("the Act")

We have audited the internal financial controls over financial reporting of Biotechnology Industry Research Assistance Council ("the Company") as of March 31, 2022 in conjunction with our audit of the standalone financial statements of the Company for the year ended on that date.

Management's Responsibility for Internal Financial Controls

The Company's management is responsible for establishing and maintaining internal financial controls based on internal control over financial reporting criteria established by the Company considering the essential components of internal control stated in the Guidance Note on Audit of Internal Financial Controls over Financial Reporting issued by the Institute of Chartered Accountants of India (ICAI). These responsibilities include the design, implementation and maintenance of adequate internal financial controls that were operating effectively for ensuring the orderly and efficient conduct of its business, including adherence to company's policies, the safeguarding of its assets, the prevention and detection of frauds and errors, the accuracy and completeness of the accounting records, and the timely preparation of reliable financial information, as required under the Companies Act, 2013.

Auditors' Responsibility

Our responsibility is to express an opinion on the Company's internal financial controls over financial reporting based on our audit. We conducted our audit in accordance with the Guidance Note on Audit of Internal Financial Controls Over Financial Reporting (the "Guidance Note") and the Standards on Auditing, issued by ICAI and deemed to be prescribed under section 143(10) of the Companies Act, 2013, to the extent applicable to an audit of internal financial controls, both applicable to an audit of Internal Financial Controls and, both issued by the Institute of Chartered Accountants of India. Those Standards and the Guidance Note require that we comply with ethical requirements and plan and perform the audit to obtain reasonable assurance about whether adequate internal financial controls over financial reporting was established and maintained and if such controls operated effectively in all material respects.

Our audit involves performing procedures to obtain audit evidence about the adequacy of the internal financial controls system over financial reporting and their operating effectiveness. Our audit of internal financial controls over financial reporting included obtaining an understanding of internal financial controls over financial reporting, assessing the risk that a material weakness exists, and testing and evaluating the design and operating effectiveness of internal control based on the assessed risk. The procedures selected depend on the auditor's judgment, including the assessment of the risks of material misstatement of the standalone financial statements, whether due to fraud or error.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion on the Company's internal financial controls system over financial reporting.

Meaning of Internal Financial Controls over Financial Reporting

A company's internal financial control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of standalone financial statements for external purposes in accordance with generally accepted accounting principles. A company's internal financial control over financial reporting includes those policies and procedures that

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1. pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company;
2. provide reasonable assurance that transactions are recorded as necessary to permit preparation of standalone financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorisations of management and directors of the company; and
3. provide reasonable assurance regarding prevention or timely detection of unauthorised acquisition, use, or disposition of the company's assets that could have a material effect on the standalone financial statements.

Inherent Limitations of Internal Financial Controls over Financial Reporting

Because of the inherent limitations of internal financial controls over financial reporting, including the possibility of collusion or improper management override of controls, material misstatements due to error or fraud may occur and not be detected. Also, projections of any evaluation of the internal financial controls over financial reporting to future periods are subject to the risk that the internal financial control over financial reporting may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

Opinion

In our opinion, the Company has, in all material respects, an adequate internal financial controls system over financial reporting and such internal financial controls over financial reporting were operating effectively as at March 31, 2022, based on the internal control over financial reporting criteria established by the Company considering the essential components of internal control stated in the Guidance Note on Audit of Internal Financial Controls Over Financial Reporting issued by the Institute of Chartered Accountants of India.

For Lunawat & Co.
Chartered Accountants
F.R. No.000629N

per CA. Ramesh Kumar Bhatia
Partner
M. No. 080160

Place: New Delhi
Date: 29th July' 2022

Biotechnology Industry Research Assistance Council (BIRAC)

BALANCE SHEET AS AT 31st MARCH 2022
CIN U73100DL2012NPL233152

(Amount in Lacs)

Particulars	Note No.	As at 31.03.2022	As at 31.03.2021
I. EQUITY AND LIABILITIES			
(1) Shareholder's Funds			
(a) Share Capital	1	100.00	100.00
(b) Reserves and Surplus	2	12,678.43	11,880.30
(2) Non Current Liabilities	3		
(a) Other Long Term Liabilities		8,190.19	7,098.06
(b) Deferred Government Grant		234.29	84.78
(3) Current Liabilities	4		
(a) Trade Payables			
(i) Total outstanding dues to MSME	4a	15.70	-
(ii) Total outstanding dues to Other Than MSME	4a	174.53	132.67
(b) Other Current Liabilities	4b	73,813.31	39,147.67
(c) Short Terms Provisions	4c	132.54	78.28
TOTAL		**95,338.99**	**58,521.75**
II ASSETS			
(1) Non-Current Assets			
(a) Property, Plant and Equipment and Intangible Assets			
(i) Property, Plant and Equipment	5	74.89	82.20
(ii) Intangible Assets	5	29.45	2.58
(b) Non-Current Investments	6	6,502.87	4,448.99
(c) Long-Term Loans and Advances	7	2,781.28	4,777.64
(d) Other Non Current Assets	8	105.40	105.40
(2) Current Assets			
(a) Cash and Cash Equivalents	9	83,991.72	46,544.73
(b) Other Current Assets	10	1,853.38	2,560.21
TOTAL		**95,338.99**	**58,521.75**
Significant Accounting Policies and the accompanying Notes to Accounts.	16 & 17		

The notes referred to above form integral part of Financial Statements.

Auditors Report

As per our report of even date attached
For LUNAWAT & Co.

Chartered Accountants
Firm Reg.No. 000629N

For and on behalf of Board of Directors

Sd/-	**Sd/-**	**Sd/-**	**Sd/-**
CA. Ramesh K. Bhatia	**Kavita Anandani**	**FCA Ms. Nidhi Shrivastava**	**Dr. Alka Sharma**
(Partner)	Company Secretary	Director Finance	Managing Director
Membership No.080160		DIN 09436809	DIN 07686722

Place : New Delhi
Date : 29th July' 2022

Biotechnology Industry Research Assistance Council (BIRAC)

STATEMENT OF INCOME & EXPENDITURE FOR THE PERIOD ENDED 31st MARCH 2022

CIN U73100DL2012NPL233152

(Amount in Lacs)

Particulars	Note No.	For the Period ended 31.03.2022	For the Period ended 31.03.2021
(1) INCOME			
Grants Received as Utilised	11	17,054.66	16,445.32
Extra-Mural Grants Received as Utilised	13A-I	45,414.64	42,014.00
Other Income	12	946.39	700.52
Total Income		**63,415.69**	**59,159.83**
(2) EXPENDITURE			
Programme Expenditure	13	15,396.20	14,922.52
Extra-Mural Programme Expenditure	13A-I	45,414.64	42,014.00
Employee Benefit Expenses	14	915.96	799.81
Depreciation & Amortisation Expenses	5	35.40	21.56
Other Expenses	15	742.51	722.99
CSR Expenditure	17.16	10.81	7.35
Total Expenses		**62,515.52**	**58,488.23**
(3) Surplus of Income over Expenditure before exceptional and extraordinary items		**900.17**	**671.61**
Add/ (Less): Prior Period Income/(Expenditure) (net)		-	-
(4) Surplus before extraordinary items		**900.17**	**671.61**
Add/(Less): Extraordinary Items		-	-
(5) Income before tax		900.17	671.61
Less: Current Tax		-	-
Surplus Carried Forward to Reserve & Surplus A/c		**900.17**	**671.61**
Earning per equity share:			
(1) Basic		**9,001.70**	**6,716.08**
(2) Diluted		**9,001.70**	**6,716.08**
Significant Accounting Policies and the accompanying Notes to Accounts.	**16 & 17**		

The notes referred to above form integral part of Financial Statements.

Auditors Report

As per our report of even date attached
For LUNAWAT & Co.

Chartered Accountants
Firm Reg.No. 000629N

For and on behalf of Board of Directors

Sd/-	**Sd/-**	**Sd/-**	**Sd/-**
CA. Ramesh K. Bhatia	**Kavita Anandani**	**FCA Ms. Nidhi Shrivastava**	**Dr. Alka Sharma**
(Partner)	Company Secretary	Director Finance	Managing Director
Membership No.080160		DIN 09436809	DIN 07686722

Place : New Delhi
Date : 29th July' 2022

Biotechnology Industry Research Assistance Council (BIRAC)

Cash Flow Statement for the Period Ended 31st MARCH 2022

CIN U73100DL2012NPL233152

(Amount in Lacs)

Particulars	Note No.	For the Period ended 31.03.2022	For the Period ended 31.03.2021
Cash Flow from Operating Activities:			
Net Surplus as per Income & Expenditure Account		900.17	671.61
Adjustments for :			
Depreciation		35.40	21.56
Management Expenses		(11.02)	(11.02)
Foreign Exchange Fluctuation		0.03	0.00
Interest Income		(745.66)	(546.70)
Operating Profit before Working Capital changes		**178.92**	**135.46**
Increase/(Decrease) in Provisions & Payables		1,253.60	1,863.60
Increase/(Decrease) in Grant Utilisation		33,750.34	8,871.76
Increase/(Decrease) In Capital Reserve/ Deferred Income		149.51	20.17
Fund Utilisation Towards PPP Activities (Net)		990.09	(232.60)
Provision for Sub-Standard & Doubtful Assets		-	-
(Increase)/ Decrease in Other Current Assets		(2,253.16)	(1,277.41)
(Increase)/Decrease in Advances PPP Activities (Net)		2,687.00	3,100.73
Cash Generated from / (used in) Operations		36,756.29	12,481.71
Income Tax Refund / (Paid)		-	-
Net Cash from (Used in) Operating Activities	**(A)**	**36,756.29**	**12,481.71**
Cash Flow From/ (Used In) Investing Activities:			
Purchase of Fixed Assets		(54.96)	(41.73)
Net Cash from/(Used in) Investing Activities	**(B)**	**(54.96)**	**(41.73)**
Cash Flow From/ (Used In) Financing Activities:			
Interest Income		745.66	546.70
Net Cash from/(Used in) Financing Activities	**(C)**	**745.66**	**546.70**
Net Increase in Cash and Cash Equivalents	**D=(A+B+C)**	**37,446.99**	**12,986.68**
Cash and Cash Equivalent at beginning of the year	**(E)**	**46,544.73**	**33,558.05**
Cash and Cash Equivalent at end of the year (Refer Note 17.15)	**F=(D+E)**	**83,991.72**	**46,544.73**

Auditors Report

As per our report of even date attached
For LUNAWAT & Co.

Chartered Accountants
Firm Reg.No. 000629N

For and on behalf of Board of Directors

Sd/-	**Sd/-**	**Sd/-**	**Sd/-**
CA. Ramesh K. Bhatia	**Kavita Anandani**	**FCA Ms. Nidhi Shrivastava**	**Dr. Alka Sharma**
(Partner)	Company Secretary	Director Finance	Managing Director
Membership No.080160		DIN 09436809	DIN 07686722

Place : New Delhi
Date : 29th July' 2022

Biotechnology Industry Research Assistance Council (BIRAC)

NOTES TO FINANCIAL STATEMENTS

1. Share Capital

(Amount in Lacs)

Particulars	As at 31.03.2022	As at 31.03.2021
A. Authorised		
10,000 (10,000) Equity shares of Rs 1000/-each	100.00	100.00
B. Issued, Subscribed & Fully paid		
10,000 (10,000) Equity shares of Rs 1000/-Each fully paid up	100.00	100.00
Subscribed but not fully paid	Nil	Nil
TOTAL	**100.00**	**100.00**

C. Reconciliation of Number of Shares

Particulars	As at 31.03.2022 No of shares	As at 31.03.2021
Number of equity shares at the beginning	10,000	10,000
Add: Equity shares issued during the period	-	-
Number of equity shares at the end (closing balance)	10,000	10,000

D. (i) Details of Shareholders holding more than 5% in equity shares of the company

Name of Shareholder	As at 31.03.2022		As at 31.03.2021	
	No. of fully paid up shares	% of shares held	No. of fully paid up shares	% of shares held
President of India	9,000	90%	9,000	90%
Dr. Renu Swarup *(held on behalf of President of India)*	Nil	Nil	900	9%
Dr. Rajesh S. Gokhale *(held on behalf of President of India)*	900	9%	Nil	Nil

E. Other details and Rights

The company has only one class of equity shares issued at par value of Rs.1000 each.

Each equity shareholder has right to one vote per share.

The shares do not have dividend rights.

Shares carry no distribution right in the event of liquidation.

2. Reserves and Surplus

(Amount in Lacs)

Particulars	As at 31.03.2022	As at 31.03.2021
I. Other Reserve		
Funds Utilised for Loans under PPP Activities after 31.03.2014	2,508.20	4,345.14
Less: Provision for Sub-Standard & Doubtful Assets (Refer Note 17.3)	(290.20)	(175.40)
Post BIRAC Realised	7,343.39	5,493.69
(B)	**9,561.39**	**9,663.43**
II. General Reserve		
Surplus		
Opening Balance	2,216.87	1,545.26
Appropriation :		
Add: Transfer from Statement of Income & Expenditure	900.17	671.61
(C)	**3,117.04**	**2,216.87**
TOTAL (A+B+C)	**12,678.43**	**11,880.30**

3. Non Current Liabilities

(Amount in Lacs)

Particulars	As at 31.03.2022	As at 31.03.2021
(a) Other Long Term Liabilities		
Pre-BIRAC Unrealised Portfolio		
Pre-BIRAC Unrealised Portfolio	7,236.12	8,086.18
Less: Provision for Sub-Standard & Doubtful Assets (Refer Note 17.3)	5,548.80	5,437.11
(A)	**1,687.32**	**2,649.07**
ACE Funding (Refer Note 17.18) **(B)**	**6,502.87**	**4,448.99**
(b) Deferred Government Grant #		
Opening Balance		
Deferred Government Grant Transferred from Capital Reserve (Refer Note 16.2.4A)	84.78	64.61
Add: On Account of Capital Expenditure during the Period	184.91	41.73
Less: On Account of Depreciation on Fixed Assets during the Period	(35.40)	(21.56)
(C)	**234.29**	**84.78**
TOTAL (A+B+C)	**8,424.48**	**7,182.84**

Refer Note 16.2.4A

4. Current Liabilities

4a. Trade Payables

(Amount in Lacs)

Particulars	As at 31.03.2022	As at 31.03.2021
Trade payables dues to micro and small enterprises (Refer Note 17.14)	15.70	-
Trade payables other than due to micro and small enterprises	174.53	132.67
	190.24	**132.67**

Trade Payable Ageing Schedule

(Amount in Lacs)

Particulars	(i) MSME	(ii) Others	(iii) Disputed dues - MSME	(iv) Disputed dues - Others
Outstanding for following periods from due dates of Payments				
Less Than 1 Year	15.70	174.53	-	-
1 - 2 Years	-	-	-	-
2 - 3 Years	-	-	-	-
More Than 3 Years	-	-	-	-
Total	**15.70**	**174.53**	**-**	**-**

4b. Other Current Liabilities

(Amount in Lacs)

Particulars		As at 31.03.2022	As at 31.03.2021
Unutilised Grant (Refer Note 17.12)			
Unutilised Grant (BIRAC)		158.77	27.85
Unutilised Grant (PPP Activities)		12.72	78.94
Unutilised Grant (DBT-BMGF-WT PMU) #		12,964.00	8,796.19
Unutilised Grant (Make in India Facilitation Cell)		96.61	67.88
Unutilised Grant (Bio-toilets in schools from North East Region)		3.81	3.71
Unutilised Grant (National Biopharma Mission - I3)		12,834.49	2,720.10
Unutilised Grant (MeitY)		39.53	0.22
Unutilised Grant (SSC NTBN)		15.74	2.80
Unutilised Grant (Ind CEPI)		57.19	2,014.74
Unutilised Grant (GBI)		52.17	131.62
Unutilised Grant (Covid Surkasha)		34,925.94	12,255.97
Unutilised Grant (Grand Innovation Challenge Program)		402.27	-
Unutilised AcE Fund		4,805.68	6,570.55
	(A)	**66,368.92**	**32,670.58**
Other Payables			
Pre-BIRAC Realised Portfolio		7,337.57	6,432.71
Less : Refunded to DBT		-	
	(B)	**7,337.57**	**6,432.71**
Statutory Liabilities	**(C)**	**54.82**	**44.38**
CSR Fund ##	**(D)**	**52.00**	**-**
Total	**(A+B+C+D)**	**73,813.31**	**9,147.67**

Unutilised Grant under DBT-BMGF-WT PMU is to be utilised over a period of three years.

CSR funds received during the financial year as below :

(Amount in Lacs)

Name	Stryker Global Technology Center Pvt. Ltd.	Stryker India Private Limited
Opening Balance as on 1st April 2021	Nil	Nil
Add: Fund received during the Financial Year	26.00	26.00
Less: Fund Utilised during the Financial Year	Nil	Nil
Closing Balance as on 31st March 2022	26.00	26.00

4c. Short Term Provisions

(Amount in Lacs)

Particulars	As at 31.03.2022	As at 31.03.2021
Provision for Gratuity and Leave Encashment	61.60	7.34
Provision for PRP	70.94	70.94
	132.54	**78.28**

5. Schedule of Fixed Assets

(Amount in Lacs)

Particulars	Gross Block				Depreciation				Net Block	
	As at	Addition	Sales/ Adjustments	As at	As at	For the Period	Adjust-ments	As at	WDV as at	WDV as at
	1-Apr-2021	2021-22	2021-22	31-Mar-22	1-Apr-2021	2021-22	2021-22	31-Mar-22	31-Mar-22	31-Mar-2021
Tangible Assets										
Furniture & Fixtures	305.89	-	-	305.89	229.06	19.90	-	248.96	56.93	76.83
Office Equipment	7.10	3.21	-	10.31	5.35	1.76	-	7.11	3.20	1.75
Computers	55.08	19.77	-	74.85	51.46	8.63	-	60.09	14.76	3.62
Total Tangible Assets	**368.07**	**22.98**	**-**	**391.05**	**285.88**	**30.29**	**-**	**316.16**	**74.89**	**82.20**
Intangible Assets	12.57	31.98	-	44.55	9.99	5.11	-	15.10	29.45	2.58
Total Intangible Assets	**12.57**	**31.98**	**-**	**44.55**	**9.99**	**5.11**	**-**	**15.10**	**29.45**	**2.58**
Total	**380.65**	**54.96**	**-**	**435.61**	**295.87**	**35.40**	**-**	**331.27**	**104.34**	**84.78**
Previous Year Figures	338.92	41.73	-	380.65	274.31	21.56	-	295.87	84.78	64.67

6. Non-Current Investments

(Amount in Lacs)

Particulars	As at 31.03.2022	As at 31.03.2021
Others (held on behalf of DBT)		
AcE Funding (Refer Note 17.18)	6,502.87	4,448.99
	6,502.87	**4,448.99**

7. Long Term Loans & Advances

(Amount in Lacs)

Particulars		As at 31.03.2022	As at 31.03.2021
Long Term Loans and Advances *(Secured against Bank Guarantee/ Hypothecation / Personal Guarantee)* *			
Loans Portfolio (Including Interest on Loan Accounts PPP Activities)			
Secured Considered Good	2,598.58		
Unsecured Considered Good	Nil		
Doubtful	7,145.73	9,744.32	12,431.32
Less: Current maturities of Long Term Loans & advances reflected under Current assets		1,124.04	2,041.17
Less: Provision for Doubtful Assets (Refer Note 17.3)		5,414.85	5,262.64
Less: Provision for Sub-Standard Assets (Refer Note 17.3)		424.15	349.87
		2,781.28	**4,777.64**
TOTAL		**2,781.28**	**4,777.64**

* Refer 17.3 (Securities available are on historical value)

8. Other Non Current Assets

(Amount in Lacs)

Particulars	As at 31.03.2022	As at 31.03.2021
Security Deposit		
Security Deposit to MTNL	105.40	105.40
Total	**105.40**	**105.40**

9. Cash & Cash Equivalents

(Amount in Lacs)

Particulars	As at 31.03.2022	As at 31.03.2021
Cash in Hand	0.03	0.16
Balances with Banks: (Refer Note 17.15)		
In Current Accounts	0.20	0.20
In Saving Accounts	14,521.49	8,825.42
In Fixed Deposits	69,470.00	37,718.94
TOTAL	**83,991.72**	**46,544.73**

10. Other Current Assets

(Amount in Lacs)

Particulars	As at 31.03.2022	As at 31.03.2021
Current maturities of Long Term Loans and Advances:(*)	1,124.04	2,041.17
(Secured against Bank Guarantee/Hypothecation/ Personal Guarantee)		
Other Assets		
Accrued Interest-FD & Saving Account (PPP, DBT / WT)	249.74	118.90
Recoverable from Government Agencies (Tax Credit)	252.99	149.29
Prepaid Expenses	30.08	22.44
	-	-
Other Recoverable	196.53	228.43
TOTAL	**1,853.38**	**2,560.21**

* Refer 17.3 (Securities available are on historical value)

11. Income

(Amount in Lacs)

Grants Received as Utilised	For the Period ended 31.03.2022	For the Period ended 31.03.2021
PPP Activities	14,817.54	13,760.70
BIRAC Activities	2,237.12	2,684.62
TOTAL	**17,054.66**	**16,445.32**

12. Other Income

(Amount in Lacs)

Particulars	For the Period ended 31.03.2022	For the Period ended 31.03.2021
Royalty	122.48	61.76
Management Fee - BMGF	11.02	11.02
Interest Received - Bank Accounts	745.66	546.70
Additional Interest	21.17	36.62
Other Receipts	10.66	22.87
Amortised Deferred Government Grant	35.40	21.56
TOTAL	**946.39**	**700.52**

13. Programme Expenditure

(Amount in Lacs)

Particulars	For the Period ended 31.03.2022	For the Period ended 31.03.2021
Grants Disbursed		
PPP Activities	14,668.55	13,561.14
BIRAC Activities	578.66	1,161.82
Programme Expenditure		
PPP Activities (Operational expenditure on Advertisement, Meeting and PMC)	148.99	199.56
Total	**15,396.20**	**14,922.52**

13A. Programme Management Unit DBT & BMGF

(Amount in Lacs)

Particulars		For the Period ended 31.03.2022	For the Period ended 31.03.2021
Programme Expenditure (GCI)		2,411.40	3,897.26
Operational Expenditure		352.22	433.07
Operational Non Recurring Expenditure		-	-
	(A)	2,763.62	4,330.33
Less:			
Programme Funds from DBT (GCI)		685.04	1,014.91
Programme Funds from BMGF (GCI)		1,293.69	2,166.57
Programme Funds from US AID (GCI)		-	-
Programme Funds from WT		59.93	15.56
Programme Funds from WT Sanger (GCI)		337.74	700.22
Programme Funds Innovation Challenge (GCI)		35.00	-
	(B)	2,411.40	3,897.26
Less:			
Operational Fund from DBT		55.66	52.32
Operational Non Recurring Fund from DBT		-	-
Operational Fund from BMGF		296.06	372.75
Operational Non Recurring Fund from BMGF		-	-
Operational Recurring Fund from WT		0.50	8.00
	(C)	352.22	433.07
(Refer to Note : 17.13.3)	**(A-B-C)**	-	-

13B. Extra-Mural Programme - MeitY

(Amount in Lacs)

Particulars		For the Period ended 31.03.2022	For the Period ended 31.03.2021
Programme Expenditure		-	-
Operational Expenditure		-	-
	(A)	-	-
Less:			
Programme Funds from MeitY		-	-
	(B)	-	-
Less:			
Operational Fund from MeitY		-	-
	(C)	-	-
(Refer to Note : 17.13.4)	**(A-B-C)**	-	-

13C. Extra-Mural Programme - Make In India

(Amount in Lacs)

Particulars		For the Period ended 31.03.2022	For the Period ended 31.03.2021
Programme Expenditure		-	24.07
Operational Expenditure		20.47	33.02
	(A)	20.47	57.09
Less:			
Programme Funds from Make in India		-	24.07
	(B)	-	24.07
Less:			
Operational Fund from Make in India		20.47	33.02
	(C)	20.47	33.02
(Refer to Note : 17.13.5)	**(A-B-C)**	-	-

13D. Extra-Mural Programme - Bio toilets in Schools from NER

(Amount in Lacs)

Particulars		For the Period ended 31.03.2022	For the Period ended 31.03.2021
Programme Expenditure		-	-
Operational Expenditure		-	0.15
	(A)	-	0.15
Less:			
Programme Funds from Bio toilets in NER School		-	-
	(B)	-	-
Less:			
Operational Fund from Bio toilets in NER School		-	0.15
	(C)	-	0.15
(Refer to Note : 17.13.6)	**(A-B-C)**	-	-

13E. Extra-Mural Programme - National Biopharma Mission (Innovate in India)

(Amount in Lacs)

Particulars		For the Period ended 31.03.2022	For the Period ended 31.03.2021
Programme Expenditure		11,894.78	30,051.31
Operational Expenditure		728.19	814.88
	(A)	12,622.97	30,866.19
Less:			
Programme Funds from National Biopharma Mission (I3)		11,894.78	30,051.31
	(B)	11,894.78	30,051.31
Less:			
Operational Fund from National Biopharma Mission (I3)		728.19	814.88
	(C)	728.19	814.88
(Refer to Note : 17.13.7)	**(A-B-C)**		

13F. Extra-Mural Programme - AcE Fund

(Amount in Lacs)

Particulars		For the Period ended 31.03.2022	For the Period ended 31.03.2021
Operational Expenditure		1.44	0.85
	(A)	1.44	0.85
Less:			
Operational Fund from AcE Fund		1.44	0.85
	(B)	1.44	0.85
(Refer to Note : 17.13.8)	(A-B)	-	-

13G. Extra-Mural Programme - DBT-BIRAC-SSC(NTBN)

(Amount in Lacs)

Particulars		For the Period ended 31.03.2022	For the Period ended 31.03.2021
Operational Expenditure		49.50	49.91
	(A)	49.50	49.91
Less:			
Operational Fund from DBT-BIRAC-SSC(NTBN)		49.50	49.91
	(B)	49.50	49.91
(Refer to Note : 17.13.9)	(A-B)	-	-

13H. IndCEPI

(Amount in Lacs)

Particulars		For the Period ended 31.03.2022	For the Period ended 31.03.2021
Programme Expenditure		1,808.86	757.52
Operational Expenditure		115.61	100.80
	(A)	1,924.47	858.32
Less:			
Programme Funds from National Biopharma Mission (I3)		1,808.86	757.52
	(B)	1,808.86	757.52
Less:			
Operational Fund from National Biopharma Mission (I3)		115.61	100.80
	(C)	115.61	100.80
(Refer to Note : 17.13.10)	(A-B-C)	-	-

13I. Covid Surksha

(Amount in Lacs)

Particulars		For the Period ended 31.03.2022	For the Period ended 31.03.2021
Programme Expenditure		27,967.77	5,835.43
Operational Expenditure		61.28	15.73
	(A)	28,029.05	5,851.16
Less:			
Programme Funds from National Biopharma Mission (I3)		27,967.77	5,835.43
	(B)	27,967.77	5,835.43
Less:			
Operational Fund from National Biopharma Mission (I3)		61.28	15.73
	(C)	61.28	15.73
(Refer to Note : 17.13.12)	**(A-B-C)**	(0.00)	(0.00)

13J. Amrit Grand Challenge JanCare program

(Amount in Lacs)

Particulars		For the Period ended 31.03.2022	For the Period ended 31.03.2021
Programme Expenditure		-	-
Operational Expenditure		3.12	-
	(A)	3.12	-
Less:			
Programme Funds from National Biopharma Mission (I3)		-	-
	(B)	-	-
Less:			
Operational Fund from National Biopharma Mission (I3)		3.12	-
	(C)	3.12	-
(Refer to Note : 17.13.13)	**(A-B-C)**	-	-

14. Employees Benefit Expenses

(Amount in Lacs)

Particulars	For the Period ended 31.03.2022	For the Period ended 31.03.2021
Salary & Allowances to Staff	761.94	719.58
Employer's Contribution to Provident Fund & Other Funds	154.02	80.23
TOTAL	**915.96**	**799.81**

15. Other Expenses

(Amount in Lacs)

Particulars	For the Period ended 31.03.2022	For the Period ended 31.03.2021
(A) Rent	351.37	406.65
(B) Advertisement & Publication	14.01	16.12
(c) Journal & Subscription	-	0.01
(D) Meetings:		
Meetings & Conferences	44.98	1.14
Sitting Fees & TA and DA	0.72	0.18
(E) Office and Administration Expenditure:		
Travel	28.99	30.22
Office Expenses	162.15	140.21
AMC Computer	9.13	13.75
Legal & Professional	3.45	6.35
Postage & Telephone Expenses	5.32	5.65
Power & Electricity	20.63	19.19
Printing & Stationery	2.55	2.19
Internet Expenses	17.29	17.07
(F) Training Expenses	9.07	2.45
(G) Consultancy Fee	70.85	59.87
(H) Statutory Audit Fees	1.97	1.93
(I) Miscellaneous Expenses	-	-
(J) Foreign Exchange Fluctuation	0.03	0.00
TOTAL	**742.51**	**722.99**

16. Significant Accounting Policies

1. Corporate Information

Biotechnology Industry Research Assistance Council (BIRAC) "the Company" is a Section 8 "Not-for-Profit Company" under the provisions of the Companies Act 2013, having CIN U73100DL2012NPL233152. BIRAC is also registered under Section 12A of the Income Tax Act 1961.The Company is engaged in nurturing, promoting and mentoring Research and Development in Biotech Sector.

2. Basis of Preparation of Financial Statements

The Financial Statements of the Company are prepared in accordance with Generally Accepted Accounting Principles in India (Indian GAAP). These are incompliance, in all material respects, with the Accounting Standards notified under the Companies (Accounting Standards) Amendment Rules, 2016, (as amended) and the relevant provisions of the Companies Act 2013. The Financial Statements are prepared on accrual basis and under the historical cost convention.

Preparation of Financial Statement requires the Management to make estimates and assumptions in regard to the reported amount of assets, liabilities, expenses and income of the reporting period. The estimates used in preparation of the Financial Statement are prudent and reasonable. The difference between the actual results and estimates, if any, are recognised in the reporting period in which the results are known and / or materialised.

2.1 Revenue Recognition

i) Interest:

a) Interest on loan granted is recognised on a time proportion basis taking into account the amount outstanding and applicable rate of interest. Interest Accrued, not yet realisable during the year on loans under various schemes are shown under other Reserves. Additional interest on the delayed payment is recognised on receipt basis.

b) Interest against time deposits with banks are accounted on accrual basis.

ii) Royalty is recognised on accrual basis on acknowledgement of amount due by the beneficiary.

iii) Management Fee is recognised on accrual basis in accordance with the terms of the relevant agreement.

2.2 Grants-in-Aid

Income by way of grants-in-aid has been recognised under Matching Principle of Accounting. All expenditure incurred out of the grants-in-aid, comprising of grants disbursed and other programmatic expenditure are matched with equal amount of income and adjusted against the grants-in-aid. Unspent balance of grants-in-aid are carried forward as liability to be utilised in subsequent years.

The application of funds for disbursement of loans under different schemes is shown as Loans and Advances under Non-Current Assets. Loans disbursed during the year under different scheme are shown under other reserves as per Matching Principle of Accounting.

2.3 Expenditure

All expenses are accounted for on accrual basis.

Funds released as grants-in-aid are treated as expenditure in the Income & Expenditure Account. Further, amount unutilised as per the Utilisation Certificates received on completion of the projects are accounted as Income.

2.4 Reserve & Surplus

a) Grant-in-aid used for acquiring depreciable assets set up as Deferred Government Grant and recognised in the Statement of Income & Expenditure on a systematic basis over the useful life of the asset.

b) DBT portfolio taken in account by BIRAC from BCIL as on 31.3.2014 vide DBT transfer Order dated 25th September 2012 and approved by Board dated 17th December 2013 was classified as Other Reserves. Consequent to the direction by DBT vide order dated 8.11.2017, the pre BIRAC Realised Portfolio is to be refunded back to DBT. In accordance to the Order, outstanding unrealised portfolio has been transferred from other Reserves to Non-Current Liabilities and pre-BIRAC Realised

Portfolio has been transferred from Other Reserves to Current Liabilities. Funds utilized for Loans subsequent to the date of take over along with accrued interest (not yet realisable) during the financial year is continued to be held as Other Reserves.

Provision for any substandard / doubtful / Bad debt that may arise on non-recovery from any borrower would be adjusted against the taken over amount first. Any write-off which is not covered by the amount taken over would be subsequently adjusted against Fund utilized subsequent to the date of take over held under "Other Reserves".

2.4A Deferred Government Grant

Grant-in-aid used for acquiring depreciable assets set up as Deferred Government Grant and recognised in the Statement of Income & Expenditure on a systematic basis over the useful life of the asset.

2.5 Fixed Assets

Fixed Assets are stated at cost, net of accumulated depreciation and accumulated impairment losses, if any. Gains or losses arising from disposal of fixed assets are measured as the difference between the net disposal proceeds and the carrying amount of the assets disposed of.

2.6 Depreciation and Amortisation

Depreciation on assets is provided on useful life basis on written down value method as prescribed under Schedule II to the Companies Act, 2013.

Depreciation on fixed assets added/disposed of during the year/period is provided on pro-rata basis with reference to the date of addition/disposal.

2.7 Intangible Assets

Intangible assets acquired are measured separately at cost. Intangible assets are carried at cost less accumulated amortization and accumulated impairment losses, if any. Internally, generated intangible assets are not capitalized and expensed off in the Statement of Income and Expenditure in the year in which the expenditure is incurred.

Intangible assets are amortized over a period of five years as per Accounting Standard - 26 as no useful life provided in Schedule II to the Companies Act, 2013.

2.8 Investments

Current investments are carried at lower of cost and quoted/fair value, computed category-wise. Long-term investments are stated at cost. Provision for diminution in the value of long-term investments is made only if such a decline is other than temporary.

2.9 Foreign Exchange Transactions/Translation

Foreign currency transactions and balances: Foreign Currency Transfer is made as per the approved Government guidelines. For any contribution being received from foreign entities, the necessary approval is obtained under the Foreign Contribution (Regulation) Act, 2010.

(i) **Initial Recognition:** Foreign currency transactions are recorded in the reporting currency by applying the exchange rate between the reporting currency and the foreign currency at the date of the transaction.

(ii) **Conversion:** Foreign Currency monetary items are retranslated using the exchange rate prevailing at the reporting date.

(iii) **Exchange Difference:** Exchange differences arising on long-term foreign currency monetary items related to acquisition of a fixed asset are capitalized and depreciated over the remaining useful life of the asset. The exchange differences on other foreign currency monetary items are accumulated in 'Foreign Currency Monetary Item Translation Difference Account' and amortized over the remaining life of the concerned monetary item.

All other exchange differences are recognized as income or as expenses in the period in which they arise.

2.10 Employees Benefits

a) All the employees of the Company are on contractual basis. Provision of Employer's contribution is made as per the provisions of Employees Provident Fund Act, 1952.

b) The Company makes annual contributions under the Employees Gratuity scheme to a fund administered by Trustees covering all eligible employees. The plan provides for lump sum payments to employees whose right to receive gratuity had vested at the time of resignation, retirement, death while in employment or on termination of employment of an amount equivalent to 15 days salary for each completed year of service or part thereof in excess of six months. Vesting occurs upon completion of five years of service except in case of death.

The plan assets are maintained with SBI Life Insurance Company Ltd. Employee Gratuity Scheme. The details of Investments maintained by SBI Life Insurance Company Ltd are not made available and have therefore not been disclosed.

c) Company's liability towards employee benefits such as leave encashment is provided on the basis of actuarial valuation.

2.11 Operating Leases

Lease payments for assets taken on operating lease are recognised as an expense in the Statement of Income & Expenditure as per terms of lease agreement.

2.12 Provisions& Contingent Liabilities

a) Funds sanctioned and yet to be released till the reporting period due to timing difference of milestone are not taken as liability, these are accounted as expenses on actual release of payment.

b) Provisioning on substandard Asset has been provided as per the approved classification of asset based on recoverability.

c) A provision is recognized when the company has present obligations as a result of past event. It is probable that an outflow of resources embodying economic benefits will be required to settle the obligations and reliable estimate can be made of amount of the obligation. Provisions are not discounted at their present value and are determined based on the best estimate required to settle the obligation at the reporting date. These estimates are reviewed at each reporting date and adjusted to reflect the current best estimates.

2.13 Earning Per Share

The company is a section 8 "Not for Profit Company". It does not generate any income/revenue from its activities. It does not distribute any dividend to its shareholders. However, for the compliance of AS -20 the company has computed EPS as under:

a) Basic earnings per share are calculated by dividing the net income or loss for the period attributable to equity shareholders by weighted average number of equities shares outstanding during the period.

b) For the purpose of calculating diluted earnings per share, the net profit or loss for the period attributable to equity shareholders and the weighted average number of shares outstanding during the period are adjusted for the effects of all diluting potential equity shares.

2.14.1 Corporate Social Responsibility (CSR) on BIRAC:

The Ministry of Corporate Affairs (MCA) vide notification dated 27thFebruary 2014 has notified the enforceability of Section 135 of Companies Act, 2013 (i.e. provision for CSR) and Companies (Corporate Social Responsibility Policy) Rules, 2014 with effect from 01.04.2014.

CSR is applicable to every company which meet least of the following threshold during the immediately preceding financial year (F.Y.): -

Either Net worth of Rs. 500 Crore (Rupees Five Hundred Crore) or more;

Or

Either Turnover of Rs. 1,000 Crore (Rupees One Thousand Crore) or more;

Or

Net profit of Rs. 5 Crore (Rupees Five Crore) or more.

"Net profit" shall not include such sums as may be prescribed and shall be calculated in accordance with the provisions of Section 198 of Act.

Year of Applicability of CSR on BIRAC	:	F.Y. 2019-20 (Triggered year)
Reason	:	BIRAC has achieved the surplus of ₹ 7.95 Crores during the financial year 2019-20.

As BIRAC falls under clause (c), provisions of CSR is applicable from financial year 2020-21.

17. Notes to Accounts for the period ended 31st MARCH 2022.

17.1 Biotechnology Industry Research Assistance Council (BIRAC) receives funds from Department of Biotechnology (DBT), Ministry of Science & Technology, Government of India by way of grant-in-aid for its operation.

17.2 The disbursement were made in tranches as per the milestones determined for the activities. Contingent liability on account of sanctioned grants but not disbursed due to the timing difference of milestone based payments are not accounted.

During the current reporting period BIRAC disbursed the following amounts under different Schemes.

(Amount in Lacs)

Particulars	Disbursement for the period ended 31.03.2022	Disbursement for the period ended 31.03.2021
PPP Activities		
Biotechnology Industry Partnership Programme (BIPP)	931.43	1,350.54
Small Business Innovation Research Initiatives (SBIRI)	454.88	398.39
Bio- Incubators support Scheme (BISS)	2,126.41	3,920.12
Biotech Ignition Grant (BIG)	6,150.00	3,400.00
University Innovation Cluster (UIC)	666.60	-
Translation Accelerator (TA)	172.53	201.49
Promoting Academic Research Conversion to Enterprise (PACE)	820.41	595.86
Social Innovation programme for Products: Affordable & Relevant to Societal Health (SPARSH)	921.95	564.22
Seed Funding for Incubators	469.54	409.79
Product Commercialization Programme (PCP)	454.50	185.00
SITARE	136.34	200.00
Mission Program on Anti Microbial Resistance (AMR)	-	70.88
Innovation Clean technologies	104.41	100.36
Covid_(A) Fast Track	19.41	549.40
Covid_(b) Research Consortium	365.55	1,315.45
Covid_(c) Therapeutics	84.59	-
LEAP Fund	755.00	300.00
Amrit Grand Challenge JanCare program	35.00	-
Total	**14,668.55**	**13,561.49**
BIRAC Activities		
Partnership Program	117.27	398.71
Capacity Building & Awareness	7.24	44.74
Technology Transfer / Acquisition	18.24	229.13
IP Services	92.30	52.00
Entrepreneurial Development / Regional Centres	343.62	437.25
Total	**578.67**	**1,161.82**

17.3 Loan and instalment due from borrowers shown under Long term Loans & Advances and other Current Assets respectively are secured wholly or partly by way of bank Guarantee/Hypothecation of asset/personal guarantee.

BIRAC has classified the loan assets based on aging of overdue under standard asset, standard asset –Rescheduled, sub-standard asset, and doubtful assets as under:

Class of Assets	Description	% of Provisioning
Standard Asset	Loan accounts not rescheduled and not classified as substandard or doubtful.	NIL
Standard Asset - Rescheduled	Loan accounts which, on account of reschedulement, are not classified as substandard or doubtful assets.	NIL
Substandard Asset	Loan accounts, other than Standard Asset- Rescheduled, in which payment of instalment is due for more than one year (365 days).	upto 25%
Doubtful Asset	Loan accounts classified as doubtful, in which payment of instalment is due for 1000 days above	upto 100%

17.3(a) On Classification of an asset from standard to sub-standard or doubtful, interest has been derecognised and requisite provisioning are made for the substandard asset and Doubtful assets. The details of standard, standard- rescheduled, substandard and doubtful assets and the provisions are done on annual basis.

(Amount in Lacs)

Particulars		As on 31.03.2022	As on 31.03.2021
Standard Asset	A	2,031.96	4,592.62
Standard Asset – Rescheduled	B	566.63	825.32
Sub Standard Assets	C	582.79	438.48
Doubtful Assets	D	6,562.94	6,574.90
Total Assets	**E (A+B+C+D)**	**9,744.32**	**12,431.32**
Provision on Substandard Assets	F	424.15	349.87
Provision on Doubtful Assets	G	5,414.85	5,262.64
Total Provision	**H(F+G)**	**5,839.00**	**5,612.51**
Interest derecognised	I	126.95	77.06

Movement of Loans

17.3 (b) - I

S. No.	Particular	Opening Balance as on 01.04.2021	Transfer to Standard Asset- Reschedule during the year	Transfer from Standard Asset Reschedule during the year	Transfer from Standard Asset to Sub Standatd during the year	Disburse-ment during the year	Interest Recognised During the year	Recovery during the FY 2021-22	Number of parties of closed Accounts	Closing balance as on 31.03.2022	No. of Parties	Remark for Reschedule with name of approval authority and its impact
		A	B	C	D	E	F	G	H	I= A-B+C-D+E+F-G		
1.	Standard Asset	4,592.62	-	-	297.12	-	53.71	2,317.26	-	2,031.96	-	2 nos. of Loan account has been transferred to Substandard as per ageing
		A	B	C	D	E	F	G	H	I= A-B+C-D+E+F-G-H		
	Numbers of Parties	71	0	0	2	0	0	0	19	50	50	

17.3 (b) - II

S. No.	Particular	Opening Balance as on 01.04.2021	Increase in Standard Assets reshedule as transfer from Standard Asset	Decrease in Standard Assets reshedule as transfer to Standard Asset	Increase in standard Assets Reshedule as transfer From Sub Standard Asset	Disburse-ment during the year	Interest Recognised During the year	Recovery during the FY 2021 -22	Number of parties of closed Accounts	Closing balance as on 31.03.2022	No. of Parties	Remark for Reschedule with name of approval authority and its impact
		A	B	C	D	E	F	G	H	I= A+B-C+D+E+F-G-H		
2.	Standard Assets reschedule	825.32	-	-	-	-	13.36	272.05		566.63	-	NIL
		A	B	C	D	E	F	G	H	I= A+B-C+D+E+F-G-H		
	Numbers of Parties	4	0	0	0	0	0	0	1	3	3	

17.3 (b) - III

S. No.	Particular	Opening Balance as on 01.04.2021	Increase in Sub standard as transfer from Standard Asset reshedule/ Standard Assest	Decrease in Sub standard as transfer to Standard loan Reshedule	Decrease in Sub standard as transfer to Doubt full Assets	Disburse-ment during the year	Interest Recognised During the year	Recovery during the FY 2021 -22	Number of parties of closed Accounts	Closing balance as on 31.03.2022	No. of Parties	Provisions on Substandard Assets	Net Closing Balance as on 31.03.2022 (after provisions)	Remark for Reshedule with name of approval authority and its impact
		A	B	C	D	E	F	G	H	I= A+B-C-D+E+F-G		J	K=I-J	
	Sub Standard Assets	438.48	297.12	-	98.82	-	-0.13	53.86	-	582.79	-	424.15	158.64	2 nos. of Loan account has been transferred from Standard and 3 nos. of account transferred to doubtful as per ageing
		A	B	C	D	E	F	G	H	I= A+B-C-D+E+F-G-H				
	Numbers of Parties	7	2	0	3	0	0	0	0	6	6	-	-	

17.3 (b) - IV

S. No.	Particular	Opening Balance as on 01.04.2021	Increase in Doubtful assets as transfer from Sub Standard Asset	Decrease in Doubtful assets as transfer to Sub Standard Assets	Disburse-ment during the year	Interest Recog-nised During the year	Recovery during the FY 2021 -22	Written Off during the FY 2021-22	Number of parties of closed Accounts	Closing balance as on 31.03.2022	No. of Parties	Provisions on Doubtful Assets	Net Closing Balance as on 31.03.2022 (after provisions)	Remark for Reshedule with name of approval authority and its impact
		A	B	C	D	E	F	G	H	I= A+B-C-D+E-F-G		J	K=I-J	
4.	Doubtful Assets	6,574.90	98.82	-	-	0.61	111.39	-		6,562.94	-	5,414.85	1,148.09	3 nos. of Loan account has been transferred from Substanda rd as per ageing
		A	B	C	D	E	F	G	H	I= A+B-C+D+E+F-G-H				
	Numbers of Parties	38	3	0	0	0	0	0	0	41	41	-	-	

Gross Total Value as per Balance sheet (I+II+III+IV)	9,744.32	100	5,839.00	3,905.32	

17.4 (Amount in Lacs)

Particulars		As on 31.03.2022	As on 31.03.2021
Age Wise Overdue Position			
Upto one year	(A)	44.26	93.24
More than one year accumulated	(B)	6,520.91	6,318.12
	Total (A+B)	**6,565.17**	**6,411.37**

17.5 Suit Filed Accounts:

17.5.1 Suits filed by the company: 2

(Amount in Lacs)

Particulars	As on 31.03.2022		As on 31.03.2021	
	Number of accounts	Total Amount*	Number of accounts	Total Amount
Suit filed accounts	2	1,098.34	2	1,098.34

* The Suit filed account as above are classified as doubtful assets and 100% provision has been made

17.5.2 Suits filed against the company: 1

(Amount in Lacs)

Particulars	As on 31.03.2022		As on 31.03.2021	
	Number of accounts	Total Amount	Number of accounts	Total Amount
Suit filed accounts	1	Nil	0	Nil

17.6 Programme Management Unit – DBT and BMGF

Department of Biotechnology (DBT) and Bill Melinda Gates Foundation (BMGF) have signed an MOU for supporting priority areas of research. BIRAC has been entrusted the responsibility to be the "Technical Management Unit". In this regard, BIRAC established a Programme Management Unit to administer programmes, of affordable product development in the area of Health Care and Agriculture. Refer Note 17.13.3

17.7 BIRAC – Extra Mural Programme

(a) **MeitY(IIPME):** Industry innovation programme on Medical electronics has been initiated by BIRAC in collaboration with Ministry of Electronics and Information Technology, Government of India. Refer Note 17.13.4

(b) **Make in India Facilitation Cell:** BIRAC has established a programme management unit for Biotechnology Industry Facilitation – Make in India Cell to channelize investment in India. Refer Note 17.13.5

(c) **Bio-toilets in schools from North East Region:** BIRAC is undertaking a programme on Bio toilets in schools from North East Region for benchtop demonstration of anaerobic digester for biogas generation and its utilization. Refer Note 17.13.6

(d) **National BioPharma Mission (I3) :** The program named Innovate in India (I3) is an industry-academia collaborative mission of Department of Biotechnology (DBT) in collaboration with World Bank for accelerating discovery research to early development of Biopharmaceuticals and to be implemented by Biotechnology Industry Research Assistance Council (BIRAC). Refer Note 17.13.7

(e) **AcE Fund:** BIRAC is implementing the Biotechnology Innovation Fund - AcE Fund initiated by Department of Biotechnology, Govt of India for providing risk capital to Biotech start-ups for product development cycle and growth phase. Refer Notes Refer Note 17.13.8

(f) **SSC(NTBN):** BIRAC is undertaking a programme on Setting up of secretarial for scientific sub - committee (SSC-NTBN) under the national Technical Board on Nutrition (NTBN). Refer Notes Refer Note 17.13.9

(g) **IndCEPI:** BIRAC is undertaking a programme on Setting up of Epidemic preparedness through rapid vaccine development: support of Indian Vaccine development aligned with the global initiative of the Coalition for Epidemic preparedness Innovative (CEPI). Refer Notes Refer Note 17.13.10

(h) **GBI:** Global Bio India, A mega Biotech event was organised by DBT along with BIRAC, New Delhi. BIRAC implemented the event through Make in India (MII) cell at BIRAC with others partners. The event witnessed a participation of 2500+ participants from Academia, Industry, Start-ups Investors National & International fraternity. Refer Notes Refer Note 17.13.11

(i) **Mission COVID SURAKSHA:** The Indian COVID 19 Vaccine Development Mission "COVID SURAKSHA". Accelerating pre-clinical & clinical development and licensure of COVID-19 vaccine candidates that are currently in clinical stages or ready to enter clinical stage of development. Establishing clinical trial sites. Immunoassay laboratories, central labs and suitable facilities for animal studies, production facilities and other testing facilities to support COVID-19 vaccine development. Supporting development of common harmonized protocols, trainings data management systems, regulatory submissions, internal and external quality management systems and accreditations, to accelerate clinical development and licensure of COVID-19 vaccine candidates that have targets identified. Supporting capabilities for process development, cell line development and manufacturing of GMP batches for animal toxicology studies and clinical trials. Ensuring all vaccines being introduced through the Mission have preferred characteristics applicable for India. Refer Note 17.13.12

(j) **Amrit Grand Challenge JanCare program:** Grand innovation Challenge Program aimed to identify and support start-ups developing Telemedicine, AI, Digital Health, Big data solutions. This is an accordance to the 10th Biotech Innovator's Meet organised to commensurate the Azadi ka Amrit Mahotsav. Refer Note 17.13.13

17.8 Prior Period Adjustment

The prior period items are accounted in accordance with Accounting Standard - 5.

The previous year figures are reclassified and regrouped in accordance with the requirements applicable in the current financial year.

17.9 Related Party Disclosure:

The provisions of Accounting Standard-18 are not applicable as there is no transaction between a reporting enterprise and its related parties.

17.10 Provision for Tax:

No Provision for Income Tax has been made in the current reporting period since the company has been registered as a charitable entity u/s 12A of Income Tax Act, 1961 vide order No. 2974 dated 12th May, 2014.

17.11 Foreign Exchange Transactions:

During the current reporting period the following income/expenditure has been incurred.

A. Income: Grant received in foreign exchange to the extent utilised Rs. 1987.92/- Lacs (Previous Year Rs. 3263.10/- Lacs)

B. Expenditure: (Amount in Lacs)

S.No.	Particulars	For the Period ended 31.03.2022	For the Period ended 31.03.2021
(i)	Technology Transfer	23.18	24.27
(ii)	Books, Journal and Database Subscriptions	37.59	37.18
(iii)	Entrepreneurship Development	-	5.83
(iv)	Advertisement/Publicity/Publication	-	3.63
(v)	Foreign Travel and Meetings	1.45	4.01

C. CIF Value of import is Nil for the current reporting period.

17.12 Details of Fund available and Utilised

(Amount in Lacs)

S.No.	Particulars	Fund Available	Fund Utilised	Balance
1	BIRAC	2,535.01	2,376.25	158.76
2	PPP Activities	14,855.12	14,842.41	12.71
3	PMU - DBT/BMGF:			
	(i) Operational	**2,204.14**	**352.22**	**1,851.92**
	BMGF	2,211.23	296.06	1,915.17
	DBT Operational	(7.04)	55.66	(62.70)
	DBT - Non Recurring	-	-	-
	WT Operational	(0.06)	0.50	(0.56)
	(ii) Projects	**13,551.22**	**2,439.14**	**11,112.08**
	BMGF	11,345.36	1,293.69	10,051.67
	DBT	1,573.45	712.78	860.66
	USAID	147.54	-	147.54
	GCI_Innovation Challenge	50.00	35.00	15.00
	WT Projects	30.93	59.93	(29.00)
	WT SANGER Projects	403.94	337.74	66.20
	Total	**15,755.36**	**2,791.36**	**12,963.99**
4	MeitY(IIPME)	39.53	-	39.53
5	Make in India Facilitation Cell	117.36	20.75	96.60
6	Bio-toilets in schools from NER	3.81	-	3.81
7	National BioPharma Mission (I3)	25,551.26	12,716.78	12,834.48
8	AcE Fund	6,860.99	2,055.32	4,805.67
9	SSC(NTBN)	66.14	50.40	15.74
10	IndCEPI	2,042.86	1,985.67	57.19
11	GBI	140.05	87.88	52.17
12	Covid Surksha	63,062.12	28,136.18	34,925.95
13	Amrit Grand Challenge JanCare program	405.39	3.12	402.27
14	CSR	52.00		52.0

17.13 Supplementary Schedule on Scheme Balances as on 31.03.2022

17.13.1 PPP Activities Funds

(Amount in Lacs)

	Particulars		AS ON 31.03.2022	AS ON 31.03.2021
	Opening Balance		78.94	-
Add:	Funds received from DBT	14,500.00		13,715.00
Add:	Interest Income	31.15		24.87
Add:	Recoveries from unspent grant	88.53		112.36
Add:	Income From SEED/LEAP Fund	156.50	14,776.18	-
			14,855.12	13,852.22
Less:	**Amount disbursed during the year :**			
	Grants Disbursed	14,668.55		13,561.14
	Loans Disbursed	-		0.35
	Programme Expenses	148.99		199.56
	Interest Refund to DBT	24.87	14,842.41	12.23
			12.71	78.94
Add :	Surplus Redeployed towards Expenses		-	-
	Unutilised Balance Carried Forward		**12.71**	**78.94**

17.13.2 BIRAC Funds

(Amount in Lacs)

	Particulars		AS ON 31.03.2022	AS ON 31.03.2021
	Opening Balance		27.85	-
Add:	Received from DBT		2,480.00	2,800.00
Add:	Interest Income		2.71	2.25
Add:	Recoveries from unspent grant		24.45	-
			2,535.01	2,802.25
Less:	**Amount disbursed for Grants**			
	Partnership Programmes	117.27		398.71
	Technology Transfer & Acquisition	18.24		229.13
	Intellectual Property	92.30		52.00
	Entrepreneurial Development	343.62		437.25
	Capacity Building & Awareness	7.24		44.74
		-	578.67	-
			1,956.34	1,640.42
Less:	**Utilisation towards:**			
	Manpower Expenses	915.97		799.81
	Non-Recurring Expenses	136.86		89.78
	Recurring Expenses	742.50		722.99
	Interest Refunded	2.25	1,797.58	
			158.76	27.85
Add:	Surplus Redeployed towards Expenses		-	-
	Unutilised Balance Carried Forward		**158.76**	**27.85**

17.13.3 BMGF PMU

(Amount in Lacs)

	Particulars		AS ON 31.03.2022	AS ON 31.03.2021
	Opening Balance			
	Operations Fund	1,753.79		1,683.45
	Project Fund	7,042.40	8,796.19	7,397.91
Add:	Received From BMGF - Project	5,011.37		2,570.60
	Received From BMGF - Operations	401.76		388.50
	Received From DBT - Project	771.35		-
	Received From DBT - Operations	-		62.41
	Received From WT SANGER	360.24		737.08
	Received From WT Projects	46.48		
	Received From WT - Operations	-	6,591.19	7.85
Add::	Bank Interest & Unspent Grant	367.98	367.98	329.80
Less:	Interest Refunded		27.75	51.07
			15,727.61	13,126.51
Less:	**Project Disbursement**			
	GCI: GSED	52.62		78.93
	GCI: ACT	-		527.88
	GCI: IKP	84.00		198.29
	GCI: IDIA	95.98		120.56
	GCI: HPV	1,029.12		1,029.12
	GCI: AMR	54.51		136.92
	GCI: Ki Data Challenge	42.44		95.96
	GCI: Sentinels	9.84		75.00
	GCI: MSSFR	99.93		120.00
	GCI: RTTC	-		49.89
	GCI: GIPA	-		206.71
	GCI: Covid 19	315.95		207.61
	GCI: WT Sanger	337.74		330.41
	GCI: MOMI	-		700.22
	GCI: Innovation Challenge	35.00		
	GCI: Med Tech	147.73		19.76
	GCI: Sero Surveillance	106.54	2,411.40	-
Less:	**Activities Expenditure**			
	HBGDki	-		-
	KSTIP (KnIT	58.50		125.99
	Communication Support	-	58.50	17.95

Less:	Operational Expenditure			
	Manpower Expense	131.00		112.29
	Meeting Expenses	12.91		22.28
	Expenses for Space	117.98		117.98
	Administrative Expenses	19.47		17.56
	Equipment Expenses	0.83		-
	Wellcome Trust- Manpower	0.50		8.00
	Wellcome Trust- Travel	-		-
	Management Expenses	11.02	293.71	11.02
	Balance Fund			
	BMGF - Projects	10,051.67		6,047.36
	DBT - Projects	860.66		777.99
	USAID - Projects	147.54		143.66
	BMGF - Operations	1,915.17		1,760.88
	DBT - Operations	(62.70)		(7.04)
	WT SANGER	66.20		38.94
	GCI_Innovation Challenge	15.00		50.00
	WT Projects	(29.01)		(15.56)
	WT- Operation	(0.56)	12,963.98	(0.06)
			12,963.98	**8,796.19**

17.13.4 MeitY(IIPME)

(Amount in Lacs)

	Particulars	AS ON 31.03.2022	AS ON 31.03.2021
	Opening Balance	0.22	-
	Received during the period	-	-
		0.22	-
Add:	Bank Interest	-	-
	Recoveries from unspent grant	39.31	0.22
		39.53	0.22
Less :	Programme Expenditure*	-	-
	Operational Expenditure	-	-
		39.53	0.22
Add:	Fund Redeployed towards Expenses from BIRAC	-	-
	Unutilised Balance Carried Forward	39.53	0.22

* The programme expenditure includes loan disbursed amounting to Rs. NIL (PY NIL) having the total outstanding of Rs. 37.21/- Lacs including accrued interest (PY Rs. 63.39/- Lacs)

17.13.5 Make in India Facilitation Cell

(Amount in Lacs)

	Particulars	AS ON 31.03.2022	AS ON 31.03.2021
	Opening Balance	67.88	-
	Received during the period	48.00	13.04
		115.88	13.04
Add:	Bank Interest	1.47	0.28
		117.36	130.68
Less :	Operational Expenditure	20.47	60.59
	Interest Refund to DBT	0.28	2.21
	Unutilised Balance Carried Forward	**96.60**	**67.88**

17.13.6 Bio-toilets in schools from North East Region

(Amount in Lacs)

	Particulars	AS ON 31.03.2022	AS ON 31.03.2021
	Opening Balance	3.71	3.77
	Received during the period	-	-
		3.71	3.77
Add:	Bank Interest	0.10	0.10
		3.81	3.86
Less :	Programme Expenditure	-	-
	Operational Expenditure	-	0.15
	Unutilised Balance Carried Forward	**3.81**	**3.71**

17.13.7 National Biopharma Mission (Innovate in India)

(Amount in Lacs)

	Particulars	AS ON 31.03.2022	AS ON 31.03.2021
	Opening Balance	2,720.10	3,570.59
	Received during the period	22,200.00	30,000.00
		24,920.10	33,570.59
Add:	Recoveries from unspent grant	346.55	73.81
	Bank Interest	284.61	93.68
		25,551.26	33,738.08
Less :	Programme Expenditure	11,894.78	30,051.31
	Operational Expenditure	728.32	814.88
	Interest Refund to DBT	93.68	151.79
	Unutilised Balance Carried Forward	**12,834.48**	**2,720.10**

17.13.8 AcE Fund

(Amount in Lacs)

	Particulars	AS ON 31.03.2022	AS ON 31.03.2021
	Opening Balance	6,570.55	8,225.34
	Received during the period	-	-
		6,570.55	8,225.34
Add:	Bank Interest	290.45	213.02
		6,860.99	8,438.36
Less :	Ace Funding	2,053.88	1,866.96
	Operational Expenditure	1.44	0.85
	Unutilised Balance Carried Forward	**4,805.67**	**6,570.55**

17.13.9 SSC(NTBN)

(Amount in Lacs)

	Particulars	AS ON 31.03.2022	AS ON 31.03.2021
	Opening Balance	**2.80**	**53.96**
	Received during the period	63.22	-
		66.02	53.96
Add:	Bank Interest	0.12	0.90
		66.14	54.85
Less :	Operational Expenditure	49.50	49.91
	Interest Refund to DBT	0.90	2.14
	Unutilised Balance Carried Forward	**15.74**	**2.80**

17.13.10 IndCEPI

(Amount in Lacs)

	Particulars	AS ON 31.03.2022	AS ON 31.03.2021
	Opening Balance	2,014.74	2,863.81
	Received during the period	-	-
		-	-
		2,014.74	2,863.81
Add:	Bank Interest	28.12	61.20
		2,042.86	2,925.01
Less :	Programme Expenditure	1,808.86	757.52
Less :	Operational Expenditure	115.61	100.80
Less :	Interest Refund to DBT	61.20	51.95
	Unutilised Balance Carried Forward	**57.19**	**2,014.74**

17.13.11 GBI

(Amount in Lacs)

	Particulars	AS ON 31.03.2022	AS ON 31.03.2021
	Opening Balance	131.62	(559.00)
	Received from DBT	-	695.80
	Sponsorship	-	16.95
	From BIRAC	6.25	-
		137.87	153.75
Add:	Bank Interest	2.18	-
		140.05	153.75
Less :	Operational Expenditure	87.88	22.12
	Unutilised Balance Carried Forward	**52.17**	**131.62**

17.13.12 Covid Suraksha

(Amount in Lacs)

	Particulars	AS ON 31.03.2022	AS ON 31.03.2021
	Opening Balance	12,256	-
	Received from DBT	50,000	18,000
		62,256	18,000
Add:	Bank Interest	806	107
		63,062	18,107
Less :	Operational Expenditure	28,029	5,851
Less :	Interest Refunded	107	-
	Unutilised Balance Carried Forward	**34,926**	**12,256**

17.13.13 Amrit Grand Challenge JanCare program

(Amount in Lacs)

	Particulars	AS ON 31.03.2022	AS ON 31.03.2021
	Opening Balance	-	-
	Received from DBT	400.00	-
		400.00	-
Add:	Bank Interest	5.39	-
		405.39	-
Less :	Operational Expenditure	3.12	-
Less :	Interest Refunded	-	-
	Unutilised Balance Carried Forward	**402.27**	**-**

17.14 Disclosures required under Section 22 of Micro, Small and Medium Enterprise (MSME) Development Act, 2006

(Amount in Lacs)

S.No.	Particulars	AS ON 31.03.2022	AS ON 31.03.2021
(i)	Principal amount remaining unpaid to MSME suppliers as at the end of the reporting period.	15.70	-
(ii)	Interest due thereon remaining unpaid to MSME suppliers as at the end of the reporting period.	-	-
(iii)	The amount of interest paid along with the amounts of the payment made to the supplier beyond the appointed day.	-	-
(iv)	The amount of interest due and payable for the period.	-	-
(v)	The amount of interest accrued and remaining unpaid at the end of the reporting period.	-	-
(vi)	The amount of further interest due and payable even in the succeeding year, until such date when the interest dues as above are actually paid.	-	-
	Total	**15.70**	**-**

The above information regarding dues to Micro and Small Enterprises has been determined to the extent such parties have been identified on the basis of information collected with the Company.

17.15 Details of Balances with Banks

(Amount in Lacs)

Particulars	31-Mar-22	31-Mar-21
In Current Accounts		
Union Bank of India (DBT-BMGF PMU)	0.20	0.20
In Saving Accounts		
Union Bank of India (BIRAC/Make In India/Bio-Toilets/MeitY)	11,755.43	6,860.20
HDFC Bank (BIRAC)	27.80	28.03
State Bank of India (PPP Activities/AcE,NBM)	1,938.49	867.09
State Bank of India (DBT-NBM PMU)	489.47	687.36
State Bank of India (DBT-BMGF PMU)	310.30	382.74
	14,521.49	**8,825.42**
In Fixed Deposits		
- Maturity More than 12 Months	-	-
- Others	69,470.00	37,718.94
	69,470.00	**37,718.94**

Cash and Cash Equivalents include deposits maintained by the Company with banks, which can be withdrawn by the Company at any point of time without prior notice or penalty on the principal in accordance of the terms & conditions of the creation of the deposits.

17.16.1 Disclosure of Corporate Social Responsibility

a - Gross amount required to be spent by the company during the year - Rs. 10.81/- Lacs

b - Amount approved by the Board to be spent during the year - Rs. 10.81/- Lacs

c - Amount Spent during the year on: (Rs. in Lacs)

S. No	Particulars	Paid	Yet to be paid	Total
1	Swachh Bharat Kosh	10.81	-	10.81

d- The amount of shortfall at the end of the year out of the amount required to be spent by the Company during the year : **Nil**

e- The amount of shortfall at the end of the year out of the amount required to be spent by the Company during the year : **Nil**

f- The total of previous years' shortfall amounts : **Nil**

g- The reason for above shortfalls by way of a note; **NA**

h- The nature of CSR activities undertaken by the Company : CSR amount contributed to Swachh Bharat Kosh as per schedule VII of Company Act, 2013

I- the shortfall amount (i.e. unspent amount), in respect of other than ongoing projects, transferred to a Fund specified in Schedule VII to the Act, as per section 135(5) of the Act : **NA**

j- the shortfall amount (i.e. unspent amount), pursuant to any ongoing project, transferred to special account as per section 135(6) of the Act. : **NA**

17.16.2 Disclosure on receipt of CSR Contribution

BIRAC being a Section 8 company, the Board in its 40th Board Meeting held on 12th February, 2020 has approved for accepting CSR fund for furthering the mandate of BIRAC for setting up Incubation centres and innovation network in the country.

BIRAC has registered itself as an implementing agency under the Companies Act 2013 and rules made thereunder vide filling the Form CSR-1 to the Ministry of Corporate Affairs (MCA). The CSR registration number is CSR00025388.

BIRAC received CSR funds of Rs. 26.00 lacs (Twenty-Six Lakhs only) from Stryker Global Technology Center Private Limited for ongoing project. The Company has transferred the funds into unspent CSR accounts which would be utilised for ongoing project, against which utilisation certificate is pending as on 31.03.2022.

BIRAC received CSR funds of Rs. 26.00 lacs (Twenty-Six Lakhs only) from Stryker India Private Limited for ongoing project. The Company has transferred the funds into unspent CSR accounts which would be utilised for ongoing project, against which utilisation certificate is pending as on 31.03.2022.

17.17 Disclosure pursuant to Accounting Standard (AS) 15 Revised "Employee Benefits" :

17.17.1 Disclosure on Gratuity

I Assumptions as at

Particulars	Financial Year ending	
	2021-22	2020-21
Interest / Discount Rate	6.20%	5.71%
Rate of increase in compensation	3.00%	3.00%
Rate of return (expected) on plan assets	6.20%	5.71%
Employee Attrition Rate(Past Service (PS))	0PS: 0 to 42 : 15%	0PS: 0 to 42 : 15%
	-	-
Expected average remaining service	5.24	5.25

II Changes in present value of obligations

(Rs. in Lacs)

Particulars	Financial Year ending	
	As on 31.03.2022	As on 31.03.2021
Defined Benefit Obligation at the beginning	**117.38**	**90.01**
Add :- Current Service Cost	28.51	26.70
Add :- Interest Cost	6.19	5.69
Add :- Prior Service Cost – Vested benefit	-	-
Add :- Prior Service Cost – Non Vested benefit	-	-
Add :- Curtailments	-	-
Less :- Benefits Paid directly by the Company	-	-
Less :- Benefits Paid from Fund	(4.43)	(5.08)
Add/Less :- Net transfer in/(out) *(including the effect of any business combinations/divestitures)*	-	-
Add/Less :- Actuarial Loss/(Gain) on Obligation	1.89	0.06
Defined Benefit Obligation at the end	**149.54**	**117.38**

III Changes in fair value of plan assets

(Rs. in Lacs)

Particulars	Financial Year ending	
	As on 31.03.2022	As on 31.03.2021
Opening balance of the fair value of the plan assets	125.80	99.11
Add: Adjustment to Opening balance	-	-
Add: Expected Return on plan assets	7.44	6.94
Add: Contributions by Employer	-	24.59
Add: Contributions by Employer	-	-
Add: Assets Distributed on Settlements	-	-
Add: Assets Acquired on acquisition/ (Distributed on Divestiture)	-	-
Add: Exchange Difference on Foreign Plans	-	-
Add/(less): Actuarial gains/(losses)	0.85	0.24
Less: Benefits Paid	(4.43)	(5.08)
Closing balance of the plan assets	129.65	125.80

IV Fair Value of Plan Assets

(Rs. in Lacs)

Particulars	Financial Year ending	
	As on 31.03.2022	As on 31.03.2021
Opening balance of the fair value of the plan assets	125.80	99.11
Add: Adjustment to Opening balance	-	-
Add: Actual Return on plan assets	8.29	7.18
Add: Contributions by Employer	-	24.59
Add: Contributions by Employer	-	-
Add: Assets Distributed on Settlements	-	-
Add: Assets Acquired on acquisition/ (Distributed on Divestiture)	-	-
Add: Exchange Difference on Foreign Plans	-	-
Add/(less): Actuarial gains/(losses)	-	-
Less: Benefits Paid	(4.43)	(5.08)
Fair value of the plan assets at the end	129.65	125.80
Funded Status (including unrecognised past service cost)	(19.89)	8.42
Excess of Actual over estimated return on Plan Assets	0.85	0.24

V Experience History

(Rs. in Lacs)

Particulars	Financial Year ending	
	2021-22	2020-21
(Gain)/Loss on obligation due to change in Assumption	(3.23)	5.48
Experience (Gain)/ Loss on obligation	5.12	(5.42)
Actuarial Gain/(Loss) on plan assets	0.85	0.24

VI Actuarial Gain/(Loss) Recognized

(Rs. in Lacs)

Particulars	Financial Year ending	
	2021-22	2020-21
Actuarial Gain/(Loss) for the period (Obligation)	(1.89)	(0.06)
Actuarial Gain/(Loss) for the period (Plan Assets)	0.85	0.24
Total Gain/(Loss) for the period	(1.04)	0.18
Actuarial Gain/(Loss) recognized for the period	(1.04)	0.18
Unrecognized Actuarial Gain/(Loss) at end of period	-	-

VII Past Service Cost Recognised

(Rs. in Lacs)

Particulars	1-Apr 20 to 31-Mar-21	
Past Service Cost- (non vested benefits)	-	-
Past Service Cost -(vested benefits)	-	-
Average remaining future service till vesting of the benefit	-	-
Recognised Past service Cost- non vested benefits	-	-
Recognised Past service Cost- vested benefits	-	-
Unrecognised Past Service Cost- non vested benefits	-	-

VIII Amounts to be recognized in the balance sheet and statement of profit & loss account

(Rs. in Lacs)

Particulars	Financial Year ending	
	As on 31.03.2022	As on 31.03.2021
Present Value of Obligations at end of period	149.54	117.38
Fair Value of Plan Assets at end of period	129.65	125.80
Funded Status	(19.89)	8.42
Unrecognized Actuarial Gain/(Loss)	-	-
Unrecognised Past Service Cost- non vested benefits	-	-
Net Asset/(Liability) recognized in the balance sheet	**(19.89)**	**8.42**

IX Expense recognized in the statement of P & L A/C

(Rs. in Lacs)

Particulars	Financial Year ending	
	As on 31.03.2022	As on 31.03.2021
Current Service Cost	28.51	26.70
Interest Cost on Obligation	6.19	5.69
Past Service Cost	-	-
Expected return on Plan Assets	(7.44)	(6.94)
Amortization of Prior service cost	-	-
Net actuarial (Gain)/Loss to be recognised	1.04	(0.18)
Transfer In/Out	-	-
Curtailment (Gain)/Loss recognized	-	-
Settlement (Gain)/Loss recognised	-	-
Expense recognised in Profit & Loss account	**28.31**	**25.27**

X Movements in the Liability recognized in Balance Sheet

(Rs. in Lacs)

Particulars	Financial Year ending	
	As on 31.03.2022	As on 31.03.2021
Opening Net Liability	(8.42)	(9.10)
Adjustment to opening balance	-	-
Expenses as above	28.31	25.27
Expected return on Plan Assets	-	(6.94)
Transfer in Liability	-	-
Transfer in Fund	-	-
Transfer out Liability	-	-
Transfer out Fund	-	-
Benefits Paid By The Company	-	-
Contribution paid	-	(24.59)
Closing Net Liability	19.89	(8.42)

XI Schedule III of The Companies Act 2013

(Rs. in Lacs)

Particulars	Financial Year ending	
	As on 31.03.2022	As on 31.03.2021
Current Liability	23.65	17.78
Non-Current Liability	125.90	99.60

XII Projected Service Cost 31 Mar 2023 32.09

XIII Asset Information

(Rs. in Lacs)

Particulars	As on 31.03.2022	
	Total Amount	Target Allocation %
Cash and Cash Equivalents Gratuity Fund (SBI Life Insurance)	129.65	100.00%
Debt Security - Government Bond	-	-
Equity Securities - Corporate debt securities	-	-
Other Insurance contracts	-	-
Property	-	-
Total Itemized Assets	129.65	100.00%

XIV Effects of changes in assumptions

Discount Rate : The discount rate has decreased from 5.71% to 6.20% and hence there is an increase in liability leading to actuarial loss due to change in discount rate.

Salary Escalation Rate : The salary escalation rate has remain unchanged and hence there is no change in liability resulting in no actuarial gain or loss due to change in salary escalation rate.

17.17.2 Disclosure on Leave Encashment

I Assets / Liabilities

(Rs. in Lacs)

As on	31st March, 2022
Present value of obligation	41.71
Fair value of plan assets	-
Net assets / (liability) recognized in balance sheet as provision	(41.71)

II Summary of membership data

(Rs. in Lacs)

As at		31st March, 2022
a)	Number of employees	59
b)	Total Monthly Salary for leave encashment (Lakhs)	48.61
c)	Total Monthly Salary for leave availment (Lakhs)	97.21
d)	Average Past Service (Years)	4.7
e)	Average Age (Years)	38.06
f)	Average remaining working life (Years)	2.68
g)	Leave balance considered on valuation date	1118

III Actuarial Assumptions :

(Rs. in Lacs)

i)	Retirement Age (Years)	60/Contract Period
ii)	Mortality rate inclusive of Provision for disability	IALM (2012 - 14)
iii)	Ages	Withdrawal Rate (%)
	Up to 30 Years	5.00
	From 31 to 44 years	5.00
	Above 44 years	5.00
iv)	Leaves	
	Leave Availment Rate	5%
	Leave Lapse rate while in service	Nil
	Leave Lapse rate on exit	Nil
	Leave encashment Rate while in service	Nil

IV Change in benefit obligation

(Rs. in Lacs)

	Particulars	31/03/2022
a)	Present value of obligation as at the beginning of the period	--
b)	Acquisition adjustment	--
c)	Interest cost	--
d)	Past service cost	31.9
e)	Current service cost	9.81
f)	Curtailment cost/(Credit)	--
g)	Settlement cost/(Credit)	--
h)	Benefits paid	--
i)	Actuarial (gain)/loss on obligation	--
j)	Present value of obligation as at the end of period	41.71

V The amounts to be recognized in balance sheet and related analysis

(Rs. in Lacs)

	Particulars	31/03/2022
a)	Present value of obligation as at the end of the period	41.71
b)	Fair value of plan assets as at the end of the period	--
c)	Funded status / Difference	-41.71
d)	Excess of actual over estimated	--
e)	Unrecognized actuarial (gains) / losses	--
f)	Net asset / (liability)recognized in balance sheet	-41.71

VI Expense recognized in the statement of profit and loss

(Rs. in Lacs)

	Particulars	31/03/2022
a)	Current service cost	9.81
b)	Past service cost	31.9
c)	Interest cost	--
d)	Expected return on plan assets	--
e)	Curtailment cost / (Credit)	--
f)	Settlement cost / (credit)	--
g)	Net actuarial (gain) / loss recognized in the period	--
h)	Expenses recognized in the statement of profit & losses	41.71

VII Reconciliation statement of expense in the statement of profit and loss

(Rs. in Lacs)

	Particulars	31/03/2022
a)	Present value of obligation as at the end of period	41.71
b)	Present value of obligation as at the beginning of the period	--
c)	Benefits paid	--
d)	Actual return on plan assets	--
e)	Acquisition adjustment	--
f)	Expenses recognized in the statement of profit & losses	41.71

VIII Amounts for the current period

(Rs. in Lacs)

	Particulars	31/03/2022
a)	Present value of obligation as at the end of period	41.71
b)	Fair value of plan assets at the end of the period	--
c)	Surplus / (Deficit)	-41.71
d)	Experience adjustment on plan Liabilities (loss) / gain	--
e)	Experience adjustment on plan Assets (loss) / gain	--

IX Movement in the liability recognized in the balance sheet

(Rs. in Lacs)

	Particulars	31/03/2022
a)	Opening liability	--
b)	Expenses as above	41.71
c)	Benefits paid	--
d)	Actual return on plan assets	--
e)	Acquisition adjustment	--
f)	Closing liability	41.71

17.18 Other Non-Current Investment

S.No.	Particulars	Financial Year Ending	
		31-Mar-2022	31-Mar-2021
1	**Other Non-Current Investment (unquoted)**		
a)	GVFL Start-up Fund	657.21	504.93
b)	IAN Fund	1,813.30	1,448.60
c)	Stakeboat Capital Fund	262.89	273.73
d)	Bharat Innovation Fund	1,327.25	1,327.25
e)	Kitven Fund - 3	232.98	232.98
f)	Ankur Fund II	717.37	219.50
g)	Endiya Partners Trust	787.82	191.99
h)	RVCF India Growth Fund	426.47	250.00
i)	Somerset Indus Healthcare India Fund	277.56	-
		6,502.85	**4,448.99**

Note:

1. BIRAC is implementing the Biotechnology Innovation Fund - AcE Fund initiated by Department of Biotechnology, Govt of India for providing risk capital to Biotech start-ups for product development cycle and growth phase.
2. The value of the investments are stated at cost . Provision for diminution in the value of long-term investments is made only if such a decline is other than temporary.
3. BIRAC undertakes Management and operation of AcE fund in the area of Biotechnology and life sciences and holds all investments made out of the AcE Fund in a fiduciary capacity for DBT.

17.19 Contingent liability

With respect to AcE fund draw down request as per the contribution agreement is yet to be received amounting to Rs. 39.48 crores.

17.20 The previous year's figures are reclassified and regrouped in accordance with the requirements applicable in the current financial year to make items comparable.

17.21 Relationship with MCA struck off Companies

Name of the struck off Companies	Nature of Transaction with struck off companies	Balance outstanding	Relationship with struck off companies, if any, to be disclosed
Usha Biotech Limited	Other outstanding balances (nature to be specified such as Loan Portfolio, Grants Disbursed etc.)	6.01	Borrower

17.22 Ratio Analysis

S. No.	Particulars	Numerator	Denominator	Current Period	Previous Period	% Variance	Reason for Variance
1	Current Ratio (no. of times)	Total Current Assets	Total Current Liabilities	1.16	0.80	44.47%	Depicts enhanced fund position
2	Debt - Equity Ratio	Total Debt [Long term borrowings + Short term borrowings (including current maturities of long term borrowings)]	Equity	NA	NA	NA	NA
3	Debt Service Coverage Ratio (no. of times)	EBITDA	(Finance costs + Short term borrowings (including Current maturities of long term borrowings)	NA	NA	NA	NA
4	Return on Equity Ratio (%)	Net Income (PAT)	Shareholder's Equity	9.32%	6.88%	35.45%	depicts the profitability in relation to Equity
5	Inventory Turnover Ratio (no. of times)	Cost of Goods Sold	Average Inventory	NA	NA	NA	NA
6	Trade Receivables Turnover Ratio (no. of times)	Net Credit Sales	Average Accounts Receivable	NA	NA	NA	NA
7	Trade Payables Turnover Ratio (no. of times)	Net Credit Purchases	Average Accounts Payable	NA	NA	NA	NA
8	Net Capital Turnover Ratio (no. of times)	Total Sales	Shareholder's Equity	6.47	5.99	7.99%	Grant Utilisation
9	Net Profit Ratio (%)	Net Profit	Net Sales	1.44%	1.15%	25.43%	Increase in profit
10	Return on Capital Employed (%)	EBIT	Capital Employed	9.32%	6.88%	35.45%	depicts the profitability in relation to Equity
11	Return on investment (%)*	Net Profit	Cost of Investment	NA	NA	NA	NA

*BIRAC undertakes Management and operation of AcE fund in the area of Biotechnology and life sciences and holds all investments made out of the AcE Fund in a fiduciary capacity for DBT. Income if any generated it will be ploughed back to fund and hence calculation of Return on Investment is not feasible.

17.23 List of Abbreviations used in Financial Statement:

S.No.	Abbreviation	Description
1	BIRAC	Biotechnology Industry Research Assistance Council
2	AcE Fund	Accelerating Entrepreneurs Fund
3	ACT	All Children Thriving
4	AgNu	Agriculture-Nutrition
5	AMR	Antimicrobial Resistance
6	BCIL	Biotech Consortium India Limited
7	BIG	Biotechnology Ignition Grant
8	BIPP	Biotechnology Industry Partnership Programme
9	BISS	Bio Incubator Support Scheme
10	BMGF	Bill Melinda Gates Foundation
11	PACE	Promoting Academic Research Conversion to Enterprise
12	DBT	Department of Biotechnology
13	ETA	Early Translational Accelerator
14	FD	Fixed Deposit
15	GCI	Grand Challenges of India
16	HBGDKi	Healthy Birth Growth Development Knowledge Integration
17	I&M	Industry and Manufacturing
18	IDIA	Immunization Data for Innovating Action
19	IIPME	Industry Innovation Programme on Medical Electronics
20	IMPRINT	Improving Growth in Infant Trail
21	IP	Intellectual Property
22	Ki	Knowledge Integration Data Challenge
23	KSTIP(KnIT)	Knowledge Integration and Translation Platform (Knowledge Integration)
24	MeitY	Ministry of Electronics and Information Technology
25	Misc.	Miscellaneous
26	MTNL	Mahanagar Telephone Nigam Limited
27	NBM (I3)	National Biopharma Mission (Innovate in India)
28	PMC	Projects Monitoring committee
29	PMU	Programme Management Unit
30	PPP Activities	Public-Private Partnership Activities
31	RTTC	Reinvent the Toilet Challenge
32	SBI	State Bank of India
33	SBIRI	Small Business Innovation Research Initiative

S.No.	Abbreviation	Description
34	SPARSH	Social Innovation programme for Products: Affordable & Relevant to Societal Health
35	SSC-NTBN	Secretariat for Scientific sub-committee under the National Technical Board on Nutrition.
36	TA & DA	Travel Allowance & Diem Allowance
37	UIC	University Innovation Cluster
38	WT	Wellcome Trust
39	IndCEPI	Ind-Coalition for Epidemic preparedness Innovative
40	GBI	Global Bio India

Auditors Report

As per our report of even date attached
For LUNAWAT & Co.

Chartered Accountants
Firm Reg.No. 000629N

For and on behalf of Board of Directors

Sd/-
CA. Ramesh K. Bhatia
(Partner)
Membership No.080160

Sd/-
Kavita Anandani
Company Secretary

Sd/-
FCA Ms. Nidhi Shrivastava
Director Finance
DIN 09436809

Sd/-
Dr. Alka Sharma
Managing Director
DIN 07686722

Place : New Delhi
Date : 29th July' 2022

COMMENTS OF THE COMPTROLLER AND AUDITOR GENERAL OF INDIA UNDER SECTION 143(6) (b) OF THE COMPANIES ACT, 2013 ON THE FINANCIAL STATEMENTS OF BIOTECHNOLOGY INDUSTRY RESEARCH ASSISTANCE COUNCIL FOR THE YEAR ENDED 31 MARCH, 2022.

the preparation of financial statements of BIOTECHNOLOGY INDUSTRY RESEARCH ASSISTANCE COUNCIL for the year ended 31 March 2022 in accordance with the financial reporting framework prescribed under the Companies Act. 2013 (Act) is the responsibility of the management of the company. The statutory auditor/auditors appointed by the Comptroller and Auditor General of India under section 139 (5) of the Act is/are responsible for expression opinion on the financial statements under section 143of the Act based on independent audit in accordance with the standards on auditing prescribed under section 143(10) of the Act. This is stated to ave been done by them vide their Audit Report dated **29.07.2022.**

I, on behalf of the Comptroller and Auditors General of India, have conducted a supplementary audit of the financial statements of BIOTECHNOLOGY INDUSTRY RESEARCH ASSISTANCE COUNCIL for the year ended 31 March 2022 under section 143(6)(a) of the Act. This supplementary audit has been carried out independently without access to the working papers of the statutory personnel and a selective examination of some of the accounting records.

On the basis of my supplementary audit nothing significant has come to my knowledge with would give rise to any comment upon or supplement to the statutory auditors' report under section 143(6)(b) of the Act.

For and on behalf of the
Comptroller & Auditor General of India

Sd/-
Sanjay Kumar Jha
Director General of Audit
(Environment & Scientific Department)

Place : New Delhi
Date : 14.10.2022

BIOTECHNOLOGY INDUSTRY RESEARCH ASSISTANCE COUNCIL

CIN: U73100DL2012NPL233152

Regd office: 1st Floor, MTNL Building, 9, CGO Complex, Lodhi Road, New Delhi-110003

Website: www.birac.nic.in Email: birac.dbt@nic.in Tel: 011-24389600 Fax: 011-24389611

ATTENDANCE SLIP

Name of the Member/proxy (In Block Letters)	
Address of Member /Proxy:	
Folio No. :	
No of Shares Held	

I certify that I am a member /proxy for the member of the Company.

I hereby record my presence at the 10th Annual General Meeting of the company held on Thursday 24th November, 2022 at 02:00 p.m. at 1st Floor, MTNL Building, 9, CGO Complex, Lodhi Road, New Delhi-110003.

.....

Member's /Proxy's Signature

BIOTECHNOLOGY INDUSTRY RESEARCH ASSISTANCE COUNCIL

CIN: U73100DL2012NPL233152

Regd office: 1st Floor, MTNL Building, 9, CGO Complex, Lodhi Road, New Delhi-110003

Website: www.birac.nic.in Email: birac.dbt@nic.in Tel: 011-24389600 Fax: 011-24389611

FORM NO. MGT-11 (PROXY FORM)

[Pursuant to Section 105(6) of the Companies Act, 2013 and Rule 19(3) of the Companies (Management and Administration) Rules, 2014

Name of the Member(s):	
Registered Address:	
E-mail ID:	
Folio No.	

I / We, being the holder (s) of .....shares of the above named Company, hereby appoint:

1. Name:.....Address: .....

   E-mail ID:.....Signature:.....

as my/our proxy to attend and vote (on a poll) for me/us and on my/our behalf at the 10th Annual General Meeting of the Company held on Thursday 24th November, 2022 at 02:00 p.m. at 1st Floor, MTNL Building, 9, CGO Complex, Lodhi Road, New Delhi-110003 and at any adjournment thereof in respect of such resolutions as are indicated below:

Sr. No.	Resolutions	For	Against
1	To receive, consider and adopt the Audited Financial Statement of the Company as on March 31, 2022 together with the Reports of the Directors and Auditor thereon and comments of the Comptroller & Auditor General of India in terms of Section 143(6)(b) of the Companies Act, 2013		
2	To fix the remuneration of the Statutory Auditor for the financial year 2021-22, in terms of provisions of Section 139(5) read with Section 142 of the Companies Act, 2013		
3.	To appoint Dr. Subhra Ranjan Chakrabarti, (DIN No. 09435840) as Director (Operations) of the Company and pass the following resolutions as an Ordinary Resolution:		
4.	To appoint FCA Ms. Nidhi Shrivastava, (DIN No. 09436809) as Director (Finance) of the Company and pass the following resolutions as an Ordinary Resolution:		

Signed this ---------- day of ....., 2022

Affix Revenue Stamp

Signature of Shareholder (s) .....

Signature of Proxy holder(s) .....

NOTES:

1. MEMBERS ENTITLED TO ATTEND AND VOTE MAY APPOINT ONE OR MORE PROXIES TO ATTEND AND VOTE INSTEAD OF THEMSELVES. PROXIES TO BE VALID MUST BE RECEIVED AT THE REGISTERED OFFICE OF THE COMPANY NOT LESS THAN FORTY-EIGHT HOURS BEFORE THE APPOINTED TIME OF THE MEETING.
2. ONLY BONAFIDE MEMBERS OF THE COMPANY WHOSE NAMES APPEAR IN THE REGISTER OF MEMBERS IN POSSESSION OF VALID ATTENDANCE SLIPS DULY FILED AND SIGNED WILL BE PERMITTED TO ATTEND THE MEETING. THE COMPANY RESERVES ITS RIGHT TO TAKE ALL STEPS AS MAY BE DEEMED NECESSARY TO RESTRICT NON-MEMBERS FROM ATTENDING THE MEETING.

NOTES

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Biotechnology Industry Research Assistance Council

A Government of India Enterprise, Under Department of Biotechnology
Ministry of Science & Technology, Government of India

CIN No.: U73100DL2012NPL233152

1st Floor, MTNL Building, 9 CGO Complex, Lodhi Road, New Delhi-110003

E-mail: **birac.dbt@nic.in**, website: **www.birac.nic.in**

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