



बायोटेक्नोलॉजी विभाग



Biotechnology Industry Research Assistance Council

Central Public Sector Enterprise (CPSE) Under Department of Biotechnology (DBT) Ministry of Science and Technology, Government of India









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ABOUT

BIRAC



FOCUS

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

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.

CORE VALUES



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 was set up in 2012 by Department of Biotechnology under Ministry of Science and Technology, Govt of India. BIRAC's mandate is to strengthen and empower emerging Biotech enterprises. The organization is committed to promote, nurture and enable the Biotech Innovation Ecosystem for development of globally competitive affordable products to address the unmet needs of society at large. BIRAC's 11 years of strategic and systematic efforts has led to establishing of a biotech innovation ecosystem in the country. BIRAC through Public Private Partnership 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 2025. 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 Biomanufacturing hub. India's Bio-Economy for 2022 is estimated at \$93.1 billion. This accounted for nearly 3 percent share of India's GDP. From 2017, India's BioEconomy has grown with double digit CAGR even through the pandemic years. The biotech ecosystem in the country is poised to grow further. The BioEconomy target for 2030 is \$300 billion (USD). It is expected to see a significant growth in biotech products/ technologies innovation, manufacturing, 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 biomass 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. The biotech innovation ecosystem is largely driven by startups. The deep tech Biotech startups in the overall startup ecosystem of country which is the world's 3rd largest, is small. BIRAC's enabling efforts are recognized as fundamental in its growth from <50 biotech startups in 2012 to 6300+ in 2022. These numbers are expected to grow further to about 10,000 by 2025. 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 11 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.



11th Foundation Day of BIRAC, was celebrated on 20th March 2023 at National Institute of Immunology (NII), New Delhi. The theme reflects the potential of Startup-Innovations in "paving the way for Amritkaal". Foundation Day speech was given by Mr. Rizwan Koita, Philanthropist and Entrepreneur (Co-Founder of Citius Tech and Koita Foundation). The event was graced by the Prof. Ajay K. Sood, Principal Scientific Adviser to the Government of India, Dr. Rajesh S. Gokhale, Chairman, BIRAC & Secretary, DBT and other Senior Functionaries from the Ministry.





11th Foundation Day of BIRAC was held on 20th March 2023 at National Institute of Immunology (NII), New Delhi

Foundation Day speech was given by Mr. Rizwan Koita, Philanthropist and Entrepreneur (Co-Founder of Citius Tech and Koita Foundation)

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



BIRAC's Bioincubation (BioNEST) and pre-incubation (EYUVA) programmes have created & supported 75 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. In an attempt to integrate the biotech network for optimal access, awareness and utilization of the capacity building, a BIRAC Facilities Network e-Portal has been created where high end equipment available across the BioNEST bioincubators have been listed for easy access and reference by startups. (https:// www.birac.nic.in/desc_bionest_incubator_equipment.php)



Incubation Centers, Pre-incubation centers & BIRAC Regional Centers



BIRAC's BIG programme has been instrumental in nurturing a pipeline of biotech startups. So far, more than 900 innovative ideas have been supported out of 11,000 applications received from across the country. The spread of aspirants covers at least 550+ cities and 38 aspirational districts pan India. More than 50% of the applications under BIG are from Tier 2 & 3 cities. BIG special call for North Eastern Region has proven a strategic success in nurturing the local entrepreneurship. Under BIG NER special call, 35 innovative biotech startup ideas have been supported "from" and "for" implementation in the NER. With continuous support, this would promote the creation of a local pool of biotech entrepreneurs and startups in the North East Region. Early-stage schemes like E-YUVA, Social Innovation Immersion Programme (SIIP) create a pipeline of innovators for BIG scheme.



Spread of applications received under BIG

Small Business Innovation Research Initiative (SBIRI) and Biotechnology Industry Partnership Programme (BIPP), the two flagship schemes of BIRAC support biotechnological product/technology development by strengthening R&D capabilities of start-ups/companies/ LLPs. They provide 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 328 projects resulting in the validation/commercialization of 87 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, 240 projects including 65 collaborative projects have been supported under BIPP. A total of 95 products/technologies have been successfully developed and validated till date. While some of these have already been commercialized, others are at the pre-commercialization stage.





The PACE Scheme (Promoting Academic Research Conversion to Enterprise) boosts translational research within academia. 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, 156 projects have been supported under the scheme, with 10 technologies/products validated and 16 IPs filed.

Social Innovation Immersion Program (SIIP) of BIRAC has been instrumental in identifying specific needs and gaps in socially relevant areas, which can then be bridged and serviced through innovative product development and services. Under the program, 160+ fellows (either graduated or are enrolled) at 14 SPARSH Centres spread over 9 states have identified and worked on various problems of societal relevance. After completion of the Program, majority of the SPARSH fellows have been successful in raising follow-on funding or starting their own enterprise to take their innovations forward.



With progression towards the product development cycle (Pre-product stage/ Pre-revenue stage), additional funds are required by Startups 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).

BIRAC Equity schemes constitute another major vertical of support for startups and biotech companies. 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, have helped the entities to attract private investment from Angels and VCs. By FY 2022-23, 170 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 Rs. 830 Cr. There is a significant increase in the 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 Rs. 114.5 Cr. This has successfully mobilized Rs. 930 Cr investment in 77 biotech Companies. The AcE fund portfolio is being expanded by on boarding new daughter fund partners.



Fund of Funds- Biotechnology Innovation Fund- AcE (Accelerating Entrepreneurs)

BIRAC entered into a partnership with IAN to launch a unique platform called BioAngels, which aspires to become India's single largest horizontal platform for seed and early-stage investment in biotech startups/ SMEs. BioAngels operations have picked up with integrating Angels, HNIs and early stage VCs. A few investments in the biotech startups have been announced in public domain, more to follow.

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:







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. This year BIRAC also led successful organization of Startup Conclave, a subevent introduced for the first time under the India International Science Festival (IISF) 2022 held at MANIT, Bhopal from 22-24th January, 2023.

BIRAC contributed in the Startup20 group, a new engagement group added in G20 activities during India's G20 Presidency in 2023. Startup20 group will act as a global voice representing startups and all the ecosystem stakeholders across the G20 member countries and 9 additional invitee countries. BIRAC participated actively in various Startup20 summits across the country and contributed for drafting the Startup Policy Communique released at the Startup20 Shikhar Summit held in Gurugram. The Communique focuses on an inclusive ecosystem promoting innovation, economic growth and collaboration at global level.

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. Under BIRAC-PATH, around 30 patent applications have been supported for provisional, complete and PCT filing as well as National Phase filing. 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 79 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 a Biotech Innovation Showcase e-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. The portal has been upgraded and now also offer provision for an online interactive discussion forum where stakeholders can interact with each other.

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 also integrates with industry associations such as CII, FICCI, ABLE, FABA, 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 India's 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 that are published by Make In India Cell, have become referral documents for national and international database/stakeholders. CSR initiative that enables receipt of funds for BIRAC & BIRAC supported incubators is also steered by the MII cell. Technology cluster as a national initiative recommended by MII cell through BIRAC is expected to augment the capacity building under Bio-Manufacturing initiative led by DBT/BIRAC.

BIRAC also houses Grand Challenges India (GCI), a collaborative initiative of the Department of Biotechnology (DBT) and the Bill & Melinda Gates Foundation (BMGF), managed through Program Management Unit (PMU).

Adopting Grand Challenges Model, this partnership, in the last 10 years, supported thematic open calls and thrust-based specialized programs in diverse areas under maternal and child health, nutrition, sanitation, infectious disease, data science, agriculture development, and vaccines in alignment with the Government of India priorities such as the National Health Mission Atmanirbhar Bharat, Swachh Bharat Abhiyan, National Nutrition Mission, Make in India etc. GCI manages 37 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.

Grand Challenges India successfully supported India's first quadrivalent HPV vaccine, CERVAVAC, approved by the DCGI for cervical cancer prevention on July 12th, 2022, and officially launched on September 1st, 2022, by the Honorable Minister for Science & Technology (I/C).

Another program, WINGS interventional trial demonstrated significant reductions in low birth weight (24%), stunting (51%), underweight (44%), and maternal anemia (56%), leading to NITI Aayog's facilitation to pilot scale these interventions in Himachal Pradesh.

The National Biopharma Mission was approved by the Cabinet for implementation in May 2017 with a total cost US\$ 250 million (INR 1500.00 Crores) which is 50% co-funded by World Bank Ioan. The Mission is implemented by BIRAC-the public sector undertaking of Department of Biotechnology, through a dedicated Program Management Unit (PMU) established at BIRAC.



The National Biopharma Mission aims to be one of the key growth drivers for reaching a forecasted target of 150 billion Biotech Industry by 2025. This Mission is designed in a manner in which it addresses the key components of the vision outlined in the National Missions - Make in India and Start up India and also aims to take forward the commitments made by DBT in the National Biotechnology Development Strategy.



The mission is supporting 210 grantees working in different verticals-Medical devices and diagnostics, Vaccines and Biotherapeutics to plug in the necessary gaps in biopharmaceutical development pipeline.

key highlights (2022-23):

- Liraglutide biosimilar by Levim Biotech LLP successfully completed Phase III clinical trial and received SEC recommendation for Market Authorization.
- Tergene Biotech Pvt Ltd. developed Pneuteger 15 (Pneumococcal Conjugate Vaccine, 15 valent). In December 2022, CDSCO's Subject Expert Committee recommended for grant of permission to manufacture and market PCV15 upon reviewing the Phase III (3+0) results.
- OmniBRx Biotechnologies Private Limited has launched their 5L single-use bioreactors for adherent cell culture and has sold about 20 units globally in the financial year 2022-23.
- Bharat Biotech International Ltd. is conducting a seamless Phase II/III, observer-blind, multi-centre, randomized clinical trial to evaluate immunogenicity and safety of BBV87, an Inactivated Chikungunya Virus Vaccine in Healthy Subjects 12-65 Years of Age. Phase II study is ongoing.
- Indian Immunologicals Ltd. received regulatory approval to initiate Phase I clinical trial for dengue vaccine. A
 phase I single blind randomized placebo-controlled study to evaluate the safety and immunogenicity of live
 attenuated tetravalent recombinant Dengue Vaccine of HBI in healthy adults of 18 to 50 years of age has been
 initiated.
- Shared Facilities: 14 of the supported facilities under vaccines, devices and biotherapeutics are actively providing services. The facilities are providing services to global and Indian clients.
- Centre for Advanced Protein Studies, at Syngene International Limited, Bangalore received GLP certification by NGCMA.



- Healthcare technology innovation centre (HTIC) has developed a flexible video endoscope and has initiated field validation for the product.
- 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
- The existing Translational Research Consortia for Dengue and Chikungunya have established serum biobanks and virus repositories 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.
- 06 new Demographic and Health surveillance sites (DHS) have been established under the DRIVEN Network (DBT's Resource of Indian Vaccine Epidemiology Network) with a pan India representation having access to urban/ semi-urban/ rural and tribal populations.
- 05 Clinical Trial Networks for oncology, diabetology, rheumatology and ophthalmology with 36 hospitals across the country have been established.
- Under the training component, 1369 manpower were trained in year 2022-23.
- NBM grantees published 11 peer review publications in the year 2022-23.
- NBM grantees filed 09 IPs in the year 2022-23.

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) at BIRAC. Mission is supporting two vaccine candidates. Preclinical studies, manufacturing of clinical trial material and Phase I CT for COVID vaccine candidate developed on mRNA platform by Gennova Biopharmaceuticals Ltd. and Chikungunya vaccine candidate developed on inactivated virus platform by Bharat Biotech International Ltd. have been supported. The mission organized an e-Course Series "Strengthening Clinical Trial Research Capacity in neighboring Countries" in collaboration with CDSA, Faridabad. Further mission has also focused on strengthening of infrastructure to support the needs of the vaccine development through an academia-industry interface. Ind-CEPI is 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, BIRAC also rolls out theme driven programs to cover special niche areas like Synthetic biology, Digital HealthCare Innovations, Clean Technology-scale up and Demo, Gaur Gum, Antimicrobial Resistance, New Drug Development Program, Swachh Bharat, Secondary Agriculture Entrepreneurial Network, SoCH (Solutions for Community Health), Women entrepreneurship, others.

New Initiatives:

During the FY 2022-23, BIRAC took up a few new initiatives including the following:.

- Launch of Amrit Grand Challenge "जनCARE" program to identify and support 90 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
- Twelve States 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 has partnered with BIRAC this year as well to support digital health tech innovations.
- 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 7 BioNEST incubation centre network, a Regional Centre BRTC for mentorshipand special BIG calls for North East to fund entrepreneurs are key initiatives that have started yielding to promote entrepreneurship and harness local potential in the North East Region.

Way forward:

BIRAC has been able to demonstrate with evidence how to nurture a knowledge based high risk sector of biotechnology. It has developed and optimized India centric models and framework for operations that are not direct mimic of what has succeeded for the advanced ecosystems in developed countries. Therefore, BIRAC models, schemes, programs are followed and referred by other Ministries, Departments, States and agencies. With this recognition, the expectations from BIRAC have also increased to be able to prepare the ecosystem for next level growth.

India's BioEconmy growth to \$300 Bn mark by 2030 would require focus and strategic deployment of existing resources. Additional resource mobilization, integration with national and international stakeholders through Public Private Partnership models, undertaking strategic tasks with deliverables aligned for the common mandate, would require a push.

There are expectations from Startups, Entrepreneurs and innovation ecosystem from BIRAC/ DBT. These successful progression of startups towards market and revenue generation would spearhead further growth and provide R&D strength to the sector.

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.

Introduction of Startup20 as an official engagement group under G20 is a global acknowledgement for the role played by startups in providing innovative solutions for unaddressed challenges and overall economic growth. This further enhances our responsibility to sustain and scale the momentum created over the last 11 years. This accentuates our commitment to both maintaining and expanding upon the momentum we've built over the past 11 years.

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, India as a Biomanufacturing Hub, Power to Transform Lives, VigyanSeVikas, sustaining innovation and facilitating the Startup Biotech Ecosystem towards commercialization of products and technologies would be high on priority.



G2

Dr Subhra R. Chakrabarti, Director (Operations)-BIRAC attended as a Panellist for the program "Infinite Possibilities- G20 Digital Innovation Alliance (G-20 DIA) for Startups" on 7th January 2023 at Dholakia Ventures, Surat, Gujarat organized jointly by MeitY Startup Hub (MSH) and Dholakia Venture.



BIRAC Participation to the G20 events in India

BIRAC participated in the 3rd Health Working Group (HWG) meeting as part of the G20 India Presidency from 4th to 6th June 2023 held at Hyderabad. The meeting focused on the three key priorities of the G20 Health Track. The side events of the 3rd HWG highlighted research and innovation in the health sector, including pharma, vaccines, therapeutics, and diagnostics. The exhibition aimed to showcase the strength of India's capability in R&D of therapeutics, vaccines, and diagnostics.











Participation of BIRAC officials in the 3rd G20 Health Working Group Meeting (Hyderabad)

Dr Raj Shirumalla, Mission Director, National Biopharma Mission participated in **G20-CSAR side event** on **8**th **August**, **2023** on the 'Role of open access in equitable climate and health action: disease prevention, health systems resilience and financing' at ITC Maurya, New Delhi. The event was hosted by **DRIIV (Delhi S&T cluster**, an initiative of **PSA to Gol). The World Bank and Gates Foundation** were also partners to the event, along with other international agencies.





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Biotechnology Industry Research Assistance Council

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Notice

NOTICE is hereby given that the Eleventh Annual General Meeting of the Company will be held on:

Day and Date: Wednesday, 27th September, 2023 Time: 3:20 P.M

Venue: Department of Biotechnology, 2, CGO Complex, 7th Floor, 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, 2023 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 2023-24, in terms of provisions of Section 139(5) read with Section 142 of the Companies Act, 2013.

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.
- 3. 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.
- 4. 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-110003

Date: 22nd September 2023



Biotechnology Industry Research Assistance Council



CHAIRMAN'S MESSAGE



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

It is a matter of great pride as Biotechnology Industry Research Assistance Council (BIRAC) completes 11 years of its successful existence. BIRAC has fostered an ecosystem of cutting edge-research innovation and entrepreneurship in the country. I take this opportunity to thank the entire BIRAC team, our experts, grantees, and partners for their commitment towards nurturing and strengthening futuristic biotechnology research in the nation.

BIRAC has been pursuing programmes and schemes aligning with national goals such as Start-up India, Make in India, Vocal for Local Products, and Atma Nirbhar Bharat. Mission COVID Suraksha led by the Department of Biotechnology (DBT), Government of India and implemented by BIRAC, has strengthened the vision of AtmaNirbhar Bharat as well as bolstered India's status as a global center for vaccine development and manufacturing. DBT through 'Mission COVID Suraksha', has delivered four vaccines, augmented the manufacturing of Covaxin, and has created the necessary infrastructure for a smooth development of future vaccines.

BIRAC's flagship scheme Biotechnology Ignition Grant (BIG) that aims to promote biotechnology entrepreneurship across the country, recently celebrated 10 years of its completion. There are close to 900 projects that have been supported through BIG so far, with a total commitment of about INR 447.00 crores.

The First Hub program is a first of its kind platform created by BIRAC. The program has been very well received by both innovators as well as regulators. Seven meetings were conducted and a large number of queries were addressed under First Hub sessions during the FY 2022-23. Likewise, the SPARSH program has also been successful in creating a vibrant biotech startup culture in the country. Of the large number of project proposals received, nearly 10% were supported that led to a 33% success for products/prototypes/ technologies development along with generation of 5 new Intellectual Property (IP).

BIRAC continues to support projects in all major areas of the biotechnology sector including Healthcare, Agriculture, Industrial biotechnology, Bioinformatics, and Infrastructure to promote affordable innovation. Under the National Biopharma Mission (NBM), many new Demographic and Health surveillance sites (DHS) have been established under the DRIVEN Network (DBT's Resource of Indian Vaccine Epidemiology Network). Clinical Trial



Networks for oncology, diabetology, rheumatology and ophthalmology have been established across the country along with 36 hospitals.

BIRAC will continue to build deeper engagements with all our national and international partners i.e., Bills & Melinda Gates Foundation (BMGF), Wellcome Trust, Nesta, Tekes, Ministry of Electronics, and IT (Meity) and WISH Foundation. Further, 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 2022-23 forms part of this Annual Report.

I once again congratulate team BIRAC for their diligence and dedication. Let's keep breaking old barriers to reach new horizons driven by passion and innovation that will take Bharat to its Amritkaal.

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



Biotechnology Industry Research Assistance Council



MANAGING DIRECTOR MESSAGE



Dr. Jitendra Kumar Managing Director, BIRAC

It gives me immense pleasure to share my thoughts with you for the first time since taking over as the Managing Director of BIRAC. The Annual Report provides us with the opportunity to evaluate the accomplishments and experience we have accumulated during the last year. Being a part of BIRAC's family writing for this 11th Annual Report gives me immense satisfaction in showcasing BIRAC's performance.

BIRAC has completed more than a decade, and in these last 11 years, BIRAC has very successfully nurtured innovations and empowered the country in the biotech sector.

In the past few years, BIRAC has made an important contribution to the unprecedented expansion of research and innovation in India. BIRAC has initiated several schemes, networks, and platforms that have helped to bridge existing gaps in biotech research and development and facilitated the development of novel, high-quality affordable products through cutting-edge technologies. The impact that BIRAC has had on the biotech innovation landscape is significant. I am happy to see that BIRAC has made it possible for entrepreneurs to access mentors and experts for regulatory, go-to-market strategy creation, fundraising and commercialization, in addition to funding support.

The mandate of BIRAC from the very beginning has been to nurture and empower the biotech innovation ecosystem. BIRAC has provided a vibrant ecosystem to the startups, which has resulted in an excellent pipeline of products and technologies developed by innovators in several successful enterprises that have made an impact both in the domestic and global markets. Through support to 75 Bio incubators, BIRAC has nourished over 4000+ entrepreneurs, startups, and SMEs, 350 academia supported, and 7.1 lakh+ sq. ft. of incubation space in last 11 years.

Over the years, BIRAC has consistently strived to promote the nation's ecosystem for innovation and entrepreneurship. The research and innovation capabilities will need to be concentrated on becoming a hub for biomanufacturing and innovation in addition to finding solutions for accessible breakthroughs to address a variety of societal challenges.

I am very confident that BIRAC has and will continue to play a pivotal role in building the biotech innovation landscape and play a significant role in advancing technological breakthroughs for creating accessible products that can compete on a global scale.

Dr Jitendra Kumar Managing Director, BIRAC





FORMER MANAGING DIRECTOR MESSAGE



Dr. Alka Sharma Former Managing Director, BIRAC and Senior Advisor/Scientist 'H' Department of Biotechnology Government of India

Biotechnology Industry Research Assistance Council (BIRAC), an industry-academia interface agency of the Department of Biotechnology, Government of India is playing a pivotal role in creating and strengthening the biotech innovation ecosystem to undertake strategic research, promote innovation, and address nationally relevant product development needs.

During the financial year 2022-23, 5 new calls were announced and 35 projects were supported under the scheme Small Business Innovation Research Initiative (SBIRI). A total of 34 projects were supported under the Biotechnology Industry Partnership Programme (BIPP) Scheme.

During the year, the initiatives undertaken by BIRAC have resulted ito the successful completion of targeted milestones from many projects from different sectors, and the development of many early, late-stage technologies and affordable products. Further, 32 projects completed early-stage validation (TRL-3 and above), and 48 projects (23: TRL-7; 6: TRL-8; 19: TRL-9) delivered products/technologies which are at late-stage validation, pre-commercial stage, market launch/commercialization stage.

During the financial year 2022-23, BIRAC launched a central online repository of all BioNEST equipments and offerings, "BIRAC's Facilities network E-portal".

In order to facilitate international partnerships, a number of projects have been implemented. Some of them are: BIRAC and USAID wheat project; BIRAC and Queensland University of Technology (QUT), Australia project on Bio-fortification and Disease resistance in Banana.

One of the remarkable achievements was development of qHPV Vaccine for the prevention of Cervical Cancer. This is an outcome of a partnership between DBT through its Grand Challenges India, BIRAC along with the Bill and Melinda Gates Foundation (BMGF) and Serum Institute of India.

Under the National Biopharma Mission (NBM), in terms of training component, more than 1300 manpower were trained in the year 2022-23. The NBM grantees published 11 peer review publications and filed 9 IPs. BIRAC also organized the first of its kind "Biotech Startup Expo" which was inaugurated by our Hon'ble Prime Minister.



BIRAC organized a mega expo-Startup Conclave in Bhopal, Madhya Pradesh, as part of the 8th Edition of India International Science Festival (IISF). 10 years anniversary of BIG was celebrated as a part of this conclave. The Conclave witnessed exhibits of more than 225 Startups and enablers. Another highlight was the launch of India bioeconomy Report, 2022-a national referral document that has been the guiding force for a host of national policies, regulations, and directives set out to reach the ambitious target of \$150 billion Bioeconomy by 2025.

The enabling biotech innovation ecosystems created across the country by BIRAC including regulatory reforms have boosted the overall growth of the biotech sector. This has also facilitated a large number of innovators to pursue entrepreneurship and converted themselves from Job seekers to Job creators.

Dr. Alka Sharma

Former Managing Director, BIRAC and Senior Advisor/Scientist 'H' Department of Biotechnology Government of India





BOARD OF DIRECTORS

Dr. Rajesh S Gokhale	- :	Chairman
*Dr. Jitendra Kumar	:	Managing Director
**Dr. Alka Sharma	:	Managing Director
Dr. Subhra Ranjan Chakrabarti	:	Director (Operations)
FCA Ms. Nidhi Shrivastava	:	Director (Finance)

Government Nominee Director Shri Vishvajit Sahay

Government Nominee Director

Non-Official Independent Director #Dr. Penna Krishna Prasanthi :

Non-Official Independent Director

*Was appointed as Managing Director w.e.f. 9th June 2023. **Held the position of Managing Director on additional charge till 8th June 2023. #Was appointed as Non-Official Independent Director w.e.f. 27th March 2023.

CHAIRMAN



Dr. Rajesh S. Gokhale Secretary, Department of Biotechnology Ministry of Science & Technology, Govt. 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. Jitendra Kumar Managing Director, BIRAC

Dr. Kumar holds a PhD degree in Biotechnology from Institute of Microbial Technology, Chandigarh. Subsequently, he moved to University of Illinois at Chicago, where he worked on leukaemia. He also holds an MBA degree from the Fisher College of Business at Ohio State University, US.

After returning from US, he joined as a Vice-President of Life Science Incubator at IKP Knowledge Park, Hyderabad where he was involved in actively mentoring incubatee companies, creating pipeline of entrepreneurs through innovative models of team building around the technologies, working with public R&D laboratories and universities to create entrepreneurial models of commercialisation.

Later, he took charge as the Director & Head of BBC with a focus on incubating innovations in agriculture, food and nutrition, biofuel/bio-energy and pharma/healthcare. He has worked closely with Department of Biotechnology, Government of India and the Department of Electronics, IT, BT and S&T, Government of Karnataka, to create a vibrant Life Sciences Innovation cluster in Bangalore. He is also a guest faculty at University of Agricultural Sciences, Centre for Human Genetics, Manipal Institute of Regenerative Medicine (MIRM) and Indian Institute of Science in Bangalore. He is a member of various Central and State Government Committees and advises on policy matters related to startups, innovation and entrepreneurship in Life Sciences. Currently, he is a member of CII national committee on Biotechnology, Member of Association of Biotech Led Enterprises (ABLE), Member of committee for Karnataka Start-up policy and Member for Government of India supported Bangalore Innovation cluster under the aegis of Indian Institute of Science, Bangalore.

He is an Internationally acclaimed thinker and advisor on Biotech Innovations and entrepreneurship. He has been invited as a speaker at various conferences in USA, South Korea and the Netherlands to represent India and Karnataka. He has inspired thousands of youths to start and build successful Biotech ventures. He has around 20 years of experience in research and innovation management in the area of life sciences. He has around 25 peer reviewed publications and around 45 products have been launched under his mentorship.



FORMER MANAGING DIRECTOR



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

Dr. Alka Sharma is currently Senior Adviser/Scientist 'H' in the Department of Biotechnology (DBT), Ministry of Science & Technology, Government of India. She is also the former Managing Director of Biotechnology Industry Research Assistance Council (BIRAC), an industry-academia interface agency 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 Review Committee on Genetic Manipulation (RCGM) in DBT. She is the Coordinator for Management of COVID-19 related activities both in DBT and BIRAC. She has received training at the Department of Microbiology and Infectious and Diseases, NIH, USA for the management of extramural programmes. She has also received "CSIR Technology Award for Innovation" for her translational work.

Under her guidance and leadership, BIRAC hosted the first of its kind 'Biotech Startup Expo 2022'. This event was the part of 10 years celebration of BIRAC's enabling efforts towards progressing India's Biotech Sector. Further, Startup Conclave at India International Science Festival (IISF) 2023-a sub-event was introduced for the first time in IISF through BIRAC. The Startup Conclave has provided a peek into India's innovation ecosystem that has grown to >75,000 startups, >700 incubators, and >100 Unicorns.

Under her leadership, Quadrivalent Human Papilloma Virus (qHPV) vaccine, India's first indigenously developed qHPV vaccine, was launched for prevention of Cervical Cancer. Further, the first National Women Leaders Global Conference was organized by BIRAC in coordination with WomenLift Health, USA. This conference celebrated Indian women's accomplishments in overcoming unprecedented challenges over the past few years and advancing STEM innovation and healthcare with their indefatigable resilience and unwavering perseverance. Dr. Sharma has also facilitated release of India's Bioeconomy report and participation of BIRAC in many important events such as exhibitions, Centre-State Conclave, Indian Science Congress, etc., She is also the Coordinator of 'Mission COVID Suraksha- The Indian COVID-19 Vaccine Development Mission' implemented by DBT-BIRAC for development of COVID-19 vaccines. So far, 5 COVID-19 vaccines supported under Mission COVID Suraksha have received Emergency Use Authorization.





GOVERNMENT NOMINEE DIRECTOR



Shri Vishvajit Sahay Additional Secretary & Financial Adviser, Department of Science & Technology, Ministry of Science & Technology, Govt. of India 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 Director Operations at BIRAC. Prior to this, he was Mission Director of National Biopharma Mission at BIRAC. Before moving to BIRAC, he was associated 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. 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 graduated in Environmental Sciences from Ramjas College, North Campus, Delhi University & earned 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 & 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.





NON-OFFICIAL INDEPENDENT DIRECTOR



Dr. Penna Krishna Prasanthi M.D; FICP; FRSSDI; FIAMS Non-Official Independent Director

Dr. Penna Krishna Prasanthi is Senior Consultant Physician, Harshitha Hospital & Best's Diabetic Care Centre, Tirupati, Andhra Pradesh. She completed her MBBS from Sri Venkateswara Medical College, Tirupati in 1994 and M.D. General Medicine from Kurnool Medical College, Kurnool in 2000.

She is the only Lady Physician from the State of Andhra Pradesh reaching to National level in Association of Physicians of India (API), Research Society for Study of Diabetes in India (RSSDI) and Indian Medical Association(IMA) in these two decades. She has been instrumental in forming Women Doctors Wing of IMA in the State of Andhra Pradesh and presently she is the Advisory Committee Member. At Present she is Member, National API Credentials Committee and she is the Chairman of Andhra Pradesh Chapter of API. She is the Governing Council Member of Andhra Pradesh Chapter of RSSDI.

She was the Fellow of Indian College of Physicians of India, Research Society for Study of Diabetes in India, IMA Academy of Medical Specialities. She has many awards to her credit like Best Woman Diabetologist Award, IMA President Appreciation Award for Academic Excellency and Community Services, Ugadhi Puraskar Award from Delhi Telugu Academy and innumerable for her Community Services. She is the Life Member of Various Prestigious Professional Organisations like API, RSSDI, IMA, Endocrine Society of India, Indian Thyroid Society, Diabetes in Pregnancy Study Group India (DIPSI), Diabetic Foot Society of India, Nutrition Society of India.

She served in Government Service for few years and later shifted to private sector. To quench her academic thirst and research she has been active in pursuing fellowships in the field of Diabetology and actively working on Diabetic Foot Problems with Diabetic Foot Research Initiative. She is keenly involved in research activities on Nutrition in Diabetes and Infections in Diabetes along with various educational institutions.

During the Covid Pandemic she did exemplary work in Tirupati along with district administration in starting Covid Care Centres and tele medicine consultation to thousands of patients. She has been recognized with Covid Warrior Award and many more for her selfless services in COVID situation.Her main motto is empowering the citizens with preventive health care and promoting our traditional healthy lifestyles to preventive non communicable diseases in young age.



CORPORATE INFORMATION

REGISTERED OFFICE

STATUTORY AUDITORS

BANKERS

1stFloor, 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

LUNAWAT & Co. Chartered Accountants 109, Magnum House-I, Karampura Complex, New Delhi-110015 Tel: 01145581264 Email: ca@lunawat.com

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

ICICI Bank E 30, Saket, New Delhi-110017

RBI Branch RBI, No 6, Sansad Marg, New Delhi-110001

COMPANY SECRETARY

Ms. Kavita Anandani


Directors' Report



DIRECTORS' REPORT

To the Members,

1. ABOUT BIRAC

Biotechnology Industry Research Assistance Council (BIRAC) is a not-for-profit Section 8 company under Companies Act 2013 (incorporated under the Companies Act, 1956) and a Schedule B, Central Public Sector Enterprise, (CPSE) under 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 eleven 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 area, 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 11 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 1,500 applications per year. Out of the 11,000+ applications received from aspirants, more than 50% have come from non-metros & non-tier 1 cities; 38 aspirational districts have got integrated.

Innovation focused PPP initiatives of BIRAC namely, Small Business Innovation Research Initiative (SBIRI) and Biotechnology Industry Partnership Programme (BIPP) schemes of BIRAC have facilitated





innovation, risk taking by small and medium companies and bringing together the private industry, public institutions and the government under one roof to promote the research and innovation in the Indian Biotech Sector. The projects supported under the scheme have resulted in 180+ products and technologies reaching TRL 7-9.

In addition, through the Promoting Academic Research Conversion to Enterprise (PACE) Scheme, BIRAC has encouraged academia to tap their potential of translational research and partner with industries to take the products and technologies of societal/national importance towards commercialization.

Social Innovation Immersion Program (SIIP), is a unique fellowship program of BIRAC which provides opportunity for clinical and rural immersion and a mini kick start grant. Under the program, 14 SPARSH Centers spread over 9 states have been established that have helped to identify 700+ problems of the communities and development of more than 80 prototypes. About 70 new Start-Ups have been created by the fellows to take their innovations forward.

There are 6,300+ Biotech Start-Ups in the country as of Dec 2022. BIRAC's BioNEST incubation centre network has been accessed by 1,800+ incubatees. Considering this subset alone, more than 1,400 IPs have been filed and 800+ 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, 1,800+ 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 Start-Up 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, Start-Up India, Make In India, Ayushman Bharat, Aatmanirbhar Bharat.

Platforms: Bringing together the biotech community stakeholders

BIRAC Spearheads 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 Start-Up Expo 2022 are two such marquee events hosted by BIRAC that have successfully created internationally recognized platforms. Inspired by the vibrancy of Startup ecosystem, a dedicated Start-Up Conclave event was introduced for the first time in the India International Science Festival (IISF 2022). The conclave was organized by BIRAC at MANIT, Bhopal in January 2022.

We have created National level annual platforms such as Innovators Meet, Foundation Day for Start-Ups 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 Start-Ups and companies that is accessible in public domain.

3. AUDIT COMMITTEE

During the year 2022-23, BIRAC did not have an Audit Committee. As mandated by DPE Corporate Governance Guidelines the Audit Committee should have minimum three Directors with two thirds of them being Independent Directors and Chairman being an Independent Director. The term of the Independent Directors ended on 15 March 2020 and only one Non-official Independent Director was appointed by the Board on 27th March, 2023. Three of the four sanctioned positions still remain vacant from 15.03.2020. BIRAC is not in a position to form an Audit Committee as per DPE Guidelines. The role of Audit Committee is being discharged by the Board of Directors.

4. FINANCIAL STATEMENTS

The financial statements are 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 Companies Act, the Annual Return as on March 31, 2023 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 5 (Five) 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.

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 2022-23. During the year 2022-23, 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 2022-23 was Rs. 4,21,24,041/-, out of which the procurement from MSEs was Rs. 3,36,27,931/- amounting to 79.83% 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 have 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 Statement of Income and Expenditure of the company for that period;
- the directors have taken proper and sufficient care for the maintenance of adequate accounting records in accordance with the provisions of this Act for safeguarding the assets of the Company and for preventing and detecting fraud and other irregularities;
- the directors have 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 2022-23). 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. (a) 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.
- · ICICI Bank, E 30, Saket, New Delhi-110017
- RBI, No. 6, Sansad Marg, New Delhi-110001
- (b) Treasury Single Account- As per DoE, Ministry of Finance, OM No 1/(18)/PFMS/FCD/2021 dated 9th March, 2022 regarding flow of funds under Central Sector Schemes, BIRAC has opened Zero Balance Saving Account (ZBSA) with ICICI Bank as a subsidiary account of a Central Nodal Agency (CNA) NIPGR, and disbursement to Grantees are processed out of the allocated drawing limits in ZBSA account. Further, as per DBT communication, Treasury Single Account (TSA) has been opened with RBI for Birac Core grant and payment are made through TSA account.

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. Dr. Jitendra Kumar is the Managing Director of BIRAC w.e.f June 9, 2023. The tenure of Dr. Alka Sharma, as Managing Director (additional charge), BIRAC ended June 8, 2023. Further, Shri Vishvajit Sahay, Additional Secretary & Financial Advisor, DBT was continued as Government Nominee Director on the Board of BIRAC w.e.f. December 24, 2020. Dr. Subhra Ranjan Chakrabarti was appointed as Director-Operations 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 Dr. Penna Krishna Prasanthi was appointed as Non-Official Independent Director w.e.f March 27, 2023 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:

		(Rs. In Lakhs)
Grant received in foreign exchange to the extent utilized		2308.70
Foreign Exchange outflow		
Α.	Technology Transfer	26.94
В.	Books, Journal and Database Subscriptions	-
C.	Entrepreneurship Development	-
D.	Advertisement/Publicity/Publication	-
E.	Foreign Travel and Meetings	3.47
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. 7 and 8 of notes forming part of the Balance Sheet as on March 31, 2023.

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 ALONG WITH 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 March 31, 2023. Total amount outstanding from Abhay Cotex Private Limited is Rs. 6,94,28,147/- and Hydrolina Biotech Private Limited is Rs. 11,47,89,944/-.

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 Ioan 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. January 22, 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.

Further Amendment in Rule 3 of Companies (Corporate Social Responsibility Policy) Rules, 2014 (applicable w.e.f September 20, 2022) mentioned that if a company having any amount in its Unspent Corporate Social Responsibility Account as per sub-section (6) of section 135 it shall constitute a CSR Committee and comply with the provisions contained in sub-sections (2) to (6) of the said section.

Hence, as per the above-mentioned provisions, BIRAC does not have any upsent Corporate Social Responsibility amount. As per Board directions BIRAC has formed CSR Internal Committee.

Hence, the Board in its 54th Board Meeting held on November 24, 2022 has approved the budgetary allocation of Rs. 15,78,158/- being 2% of the net surplus/profit made during three immediately preceding financial years for CSR activities During financial year 2022-23, the Board of Directors authorised the Managing Director to examine the proposals as Chairperson of the CSR Internal Committee. Further, the CSR Internal Committee members deliberated and approved that the CSR Fund for the Financial Year 2022-23 of Rs 15,78,158/- (Rupees Fifteen Lakh Seventy-Eight Thousand One Hundred Fifty-eight 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 received by BIRAC.

BIRAC has registered itself as an implementing agency under the Companies Act 2013 and rules made there under 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 February 12, 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 March 31, 2023, BIRAC has received the CSR funds of Rs. 80 Lakhs only from Stryker Global Technology Center Private Limited for ongoing project and Rs. 19.79 Lakhs only from Stryker India 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 March 31, 2023.

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. Jitendra Kumar (Managing Director) DIN: 07017109 -/Sd FCA Ms. Nidhi Shrivastava (Director-Finance) DIN: 09436809

Date : 27th September, 2023 Place : New Delhi





Management Discussion & Analysis









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 11 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 65 Bioincubators catering to more than 1500+ biotech Startups and entrepreneurs.

- 1. In addition to the ongoing support to the 60 BioNEST incubators in the year 2022-23, following 5 new bioincubators were added during FY 22-23:
 - BioNEST at Central Food Technological Research Institute (CFTRI), Mysore
 - BioNEST at Dr. Moopen's Medical College, Wayanad Kerala
 - BioNEST at Center for Healthcare Entrepreneurship (CfHE), IIT Hyderabad
 - BioNEST at Indian Institute of Integrative Medicine (IIIM), Jammu
 - BioNEST Phase 2 at Foundation for Innovation and Technology Transfer (FITT), IIT Delhi
- 2. In the year 2022-23, following 4 incubators were inaugurated and dedicated to the Biotech startups:
 - BioNEST at NIPER Hyderabad- 5000 Sq.ft Bio-incubation centre has been setup with the aim to support biopharmaceutical-based entrepreneurs, start-ups and MSMEs.
 - BioNEST at DPSRU Innovation and Incubation Foundation (DIIF) harnesses perfect blend of an innovation ecosystem in pharmaceuticals and other healthcare domains. It provides a dedicated research ecosystem, network of mentors and investors and an unmatched opportunity for the budding entrepreneurs to translate their ideas into successful business ventures.
 - BioNEST at University of Agricultural Sciences (UAS), Bangalore is an agri focused incubation centre to support startups and entrepreneurs in diverse areas of agriculture like crop improvement, conservation agriculture, crop management, crop protection value addition and agriculture implements.
 - BioNEST at CSIR IIIM Jammu:. This is the first of its kind incubator in the region with the objective to ignite entrepreneurship mindset and to nurture start-up culture among youth, local farmers and entrepreneurs of Jammu & Kashmir.



Inauguration of BioNEST facilities at IIIM Jammu & University of Agricultural Sciences, Bangalore



3. BioNEST centres also represented the strength of BIRAC's BioNEST Incubator network at the Biotech Startup Expo, organized from 9-10 June, 2022 at Pragati Maidan, New Delhi.



Hon'ble Prime Minister Shri Narendra Modi ji at the BioNEST Exhibition during the Biotech Startup Expo at Pragati Maidan New Delhi

4. 10th Anniversary of BioNEST was celebrated as part of the Startup Conclave organized during the India International Science Festival organized from 21-24 January, 2023 at MANIT, Bhopal. More than 60 Incubators and Enablers exhibited their offerings of shared infrastructure and enabling services as part of the Startup Conclave at IISF 2022. A compilation of 60+ BioNEST incubators profiles was launched as "BioNEST Compendium" by Hon'ble Minister Dr. Jitendra Singh.



Launch of Startup and BioNEST Compendium by the Honb'le Minister Shri Jitendra Singh ji at the India International Science Festival 2022





A panel discussion on Nesting Grounds for Nascent Ideas – Incubation Centres was also organized by the incubators and enablers representatives.

5. Launch of the BIRAC's Facilities Network E-Portal: On the occasion of 11th Foundation Day of BIRAC, a central online repository of all BioNEST equipment and offerings named as *BIRAC's Facilities network E-portal* was launched in the presence of Prof. Ajay Kumar Sood, Principal Scientific Advisor (PSA) to Government of India. The portal provides readily accessible information about the equipment present in all the 65 BioNEST Incubation Centres across the country.



Launch of BIRAC's facilities Network E-Portal at the BIRAC's 11th Foundation Day



Network of BioNEST Incubation centers across the country and its Impact

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 pre-incubation space, 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 E-YUVA Centres (EYCs), housed within the University/ Institution setup, which act as anchors and extend requisite support and mentoring to students. Mentoring & guidance support is provided through a designated Knowledge Partner-BIRAC's Bio-NEST Incubator, associated with each EYC.



Categories of Fellows:

1. E-yuva Fellows

- A team of 3-5 UG students (pursuing graduation), guided by a mentor
- Fellowship and mentoring support for 12 months
- 2. Innovation Fellows
 - Students who have completed post-graduation/PhD
 - Selected fellows work full-time from the EYC
 - Fellowship and mentoring support for 18 months

During the FY 2022-23, selection process for the first call of applications for fellows (announced on 26th Jan 2022) was completed and a total of 223 fellows including (48 E-YUVA teams comprising 197 UG students and 26 Innovation fellows) have been selected for support under E-YUVA.

Highlights of the year 2022-23:

- E-YUVA Centers exhibited their strengths during the Startup Conclave at 8th Edition of the India International Science Festival (IISF) held in Bhopal from 21-24 January 2023
- Centres conducted the inaugural ceremony of the E-YUVA lab facilities, Fellow's onboarding and agreement signing ceremony





KCW





Glimpse of Launch of E-YUVA Programme

• Various workshops and training programs were organized by E-YUVA Centres to create awareness and inspire young minds towards Biotech entrepreneurship





Biotechnology Industry Research Assistance Council



Workshops & Training Programs



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



Early Translation Accelerator (ETA)

BIRAC is supporting Early Translation Accelerators (ETAs) to focus on catalysing 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 in line with the BIRAC's mission of facilitating the translation of innovative ideas into biotech products and to attract industry to take these validated technologies further in terms of development and is expected to collaborate with academic investigators, engage industry and to leverage international translation ecosystems.

Till date, four ETAs have been established. ETAs at C-CAMP and Yenepoya Foundation for Technology Incubation, established for health care, IIT-Madras Bio incubator for Industrial Biotechnology and BETIC –IIT Bombay for devices & Diagnostics respectively.

ETA at C-CAMP completed 3 projects in its first phase of support and filled 2 patents. They are prepared for ETA's second phase. The industries have embraced all of the technologies created by C-CAMP. Thus, they achieved the goal of the ETA, which was to convert innovative concepts into biotech products and entice the market to adopt these proven 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.

Clinical validations are ongoing for the projects supported at ETA-Yenepoya and ETA-BETIC.



Accelerated Translational Grant for Commercialization (ATGC)

Department of Biotechnology (DBT) in collaboration with Biotechnology Industry Research Assistance Council (BIRAC) launched this scheme in 2019-20 with an aim to accelerate translational research leads beyond earlystage 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-ofconcept 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)

Academic Lead Translation (ALT)

The objective of Academic Lead Translation (ALT) scheme is to promote validation of demonstrated Proof-ofconcept (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.

Academic Industry Translational Research (AITR)

The objective of Academic Industry Translational Research (AITR) scheme is to promote validation of Proof-ofconcept (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.



Social Innovation programme for Products Affordable & Relevant to Societal Health (SPARSH)

Social Innovation programme for Products Affordable & Relevant to Societal Health (SPARSH) is the social innovation programme of BIRAC aimed at promoting development of innovative solutions to society' pressing 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/technologies have been developed/commercialized 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.



Social Innovation Immersion Program (SIIP)

Social Innovation Immersion Program (SIIP), a component of SPARSH, is a Fellowship program to identify specific needs and gaps in socially relevant areas, which can then be bridged and serviced through innovative product development and services.

This immersion program is a unique Social Innovation platform that not only provides opportunity for clinical and rural immersion but also monthly fellowship and mini kick start grant to young Social Innovators for developing a prototype/technology. The program is implemented through SPARSH partners under the guidance and mentoring of a knowledge partner. Under the program, 14 SPARSH Centres spread over 9 states have been established which currently house a group of 65 Social Innovators working on various problems in six thematic areas of social relevance viz.



100+ social innovators in above mentioned thematic areas have already graduated, and several novel and interesting ideas to tackle related problems were generated. Some of these ideas were further refined and taken forward for product development. Most of the Innovators who were mentored under the program have been successful in raising follow-on funding or starting their own enterprise.



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 the country. Funding grant of up to Rs. 50 lakhs for a period of 18 months is provided for translation of innovative ideas to proof-of-concept.

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 in Tier 2, Tier 3 cities and aspirational districts, 11 additional BioNEST Incubators have been engaged as BIRAC Associate Partners. Names of 11 Associate Partners are as follows:





- Bangalore Bioinnovation Centre (BBC), Bangalore
- HTIC, Chennai
- PSG-STEP, Coimbatore
- IKP Eden, Bangalore
- Panjab University, Punjab

- Venture Studio, Ahmedabad University, Gujarat
- IIT Madras Research Park, Chennai
- ASPIRE-BioNEST, University of Hyderabad
- RiiDL, Somaiya Vidyavihar, Mumbai
- BSC BioNEST Bio-Incubator, RCB, Faridabad, NCR

• VIT-BioNEST, Vellore

During the financial year 2022-23, two new calls, BIG 21 and BIG 22 were launched on 1st July 2022 and 1st January 2023 respectively. Out of 680 proposals received under BIG 21 call, 51 proposals were selected for BIG support. Under the 22nd Call, 988 proposals were received and are under the screening process.

In addition to the 2 national calls, a special call with a focus on North East Region of India (BIG-NER) was also announced by Hon'ble Minister to promote biotech entrepreneurship in North East Region of India. Out of 185 applications received under BIG NER, 25 startups and entrepreneurs were identified for support with grant-in-aid of Rs. 50 Lakhs each.



BIG NER Call launch by Minister

10 years anniversary of BIG was celebrated as a part of the Startup Conclave organized during the 8th Edition of India International Science Festival (IISF) held in Bhopal from 21-24 January 2023.

BIG scheme's successful execution over the last 11 years has been able to promote and amplify the culture of biotech entrepreneurship across the country. There are close to 900 projects that have been supported through BIG so far, out of 11,000+ applications received. About Rs. 447 Crores have been committed by BIRAC under BIG. BIG scheme has facilitated new startup creation, development of 125+ innovative products & technologies, filing of 500+ IPs, supported nearly 250 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 Rs. 1000 Crores as follow-on funds through private investors.



IISF 2022: Talk on "Next BIG thing"







Representative Products developed with BIG support

Intensifying the Impact of Industrial Innovation (i4)

The i4 programme supports biotechnological product/technology development by strengthening R&D capabilities of start-ups/companies/LLPs and operated through 2 schemes:



During 2022-23, two regular calls and one challenge call for proposals were announced under i4 (SBIRI and BIPP). In order to align the BIRAC efforts to the Government initiatives, the challenge call announced on 15th October, 2022 had focussed on priority research areas such as HPV related diseases, TB, AI based diagnostics, Neglected and rare diseases, Medtech interventions to address challenges of healthcare system, Post-harvest value addition of millets, Synthetic biology, Satellite imaging, IoT, Drones ("Kisan drones") and Machine Learning for crop monitoring, technologies contributing to boost production of oilseeds and pulses, Lumpy skin disease, Foot and Mouth Disease (FMD), and Brucellosis and others.





Small Business Innovation Research Initiative (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, 328 projects including 77 collaborative projects have been supported. The total beneficiaries supported are 419 which include 334 companies and 85 academic institutions. A total of 87 products/technologies have been developed/commercialized till date under this scheme.

During 2022-23, in all 35 projects were supported under the scheme. These projects, under various thematic areas were mentored and monitored by Project Monitoring Committee (PMC) through online evaluations, site visits or presentations before Technical Evaluation Committee.

Three new calls (49th, 50th and 51st) for the proposals were announced during the year under which 260 proposals were received. Out of these, 10 proposals (including 1 transferred from the BIPP scheme) have been recommended for financial support and 51 proposals (including 1 lateral entry) are currently under consideration.





Biotechnology Industry Partnership Programme (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, 240 projects including 67 collaborative projects have been supported under the scheme. A total of 95 products/technologies have been developed till date. While some of these have already been commercialized, others are at the pre-commercialization stage.

During 2022-23, a total of 34 projects, including 8 new ones were supported. 11 projects got completed during this period. 11 products/technologies reached TRL 7-9 bringing them closer to commercialization. Regular monitoring and mentoring of the projects was undertaken to ensure successful outcomes.

Three new calls (56th, 57th and 58th) for proposals were announced during the year under which 105 proposals were received, out of which 8 proposals (including 4 transferred from SBIRI Scheme) have been recommended for support and 22 proposals are under consideration.





Promoting Academic Research Conversion to Enterprise (PACE)

Promoting Academic Research Conversion to Enterprise (PACE) supports academia to develop products/ technologies 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-ofconcept (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 of the scheme, 29 calls have been launched and 156 projects have been supported. So far, 10 technologies/products have achieved TRL 7 and above and 16 IPs have been filed. More than 75% projects funded under AIR have achieved TRL 3.

During 2022-23, 56 ongoing projects (including 10 new projects) involving 71 academic institutions, 14 companies and 29 collaborations were supported. During the year, three calls for proposals were announced. While, the 28th call was a Challenge Call which targeted specific research areas, the 27th and 29th calls were regular calls for proposals targeting the major thematic research areas supported by BIRAC.

Under 27th and 28th call, 7 proposals have been recommended for support and 11 proposals are under review. Proposals received under 29th call are under evaluation. The ongoing projects under the scheme were mentored and regularly monitored through online interactions/site visits and presentation to the Technical Expert Committee to ensure successful outcomes.





Equity Funding Schemes

SEED Fund

Sustainable Entrepreneurship and Enterprise Development (SEED) Fund is the first equity exposure to startups with new and meritorious ideas, innovations and technologies. SEED support of upto Rs. 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 which, as SEED Fund partners, manage the equity.



During the year 2022-23, 30+ startups were supported under SEED Fund. So far, seven exits with a total upside of Rs. 1.55 Cr has been 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 Rs. 100 lakhs/Startup that has reached pre-commercialization stage in order to reduce its gestation period. The scheme is implemented through selected BioNEST Incubators which, as LEAP Fund partners, manage the equity.



During the year 2022-23, 10+ startups were supported under LEAP Fund. So far, 3 startups exited with a total upside of Rs. 3.80 Cr

Fund of Funds-Biotechnology Innovation Fund AcE (Accelerating Entrepreneurs)

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 Rs. 7 Cr per startup. The AcE Fund has been able to infuse private equity commitment into the Biotech ecosystem using AcE fund as a catalyst.





During the FY 22-23, 3rd National call for applications for inducting more daughter funds was announced. Agreement signing is under process with 4 newly identified daughter funds.

Biotechnology Innovation Fund-AcE has been able to attract several Venture Funds willing to invest in Biotech Startups. It has reflected a willingness of private equity to into the high risk area of Biotech. This is a very encouraging change that this Fund of Funds scheme has been able to trigger.

 AcE 2.0 proposal with a fresh fund corpus of Rs. 500 Cr is under discussion. With 25 additional AcE Partners, BIRAC can aim to mobilize 2x fund commitment from VCs thereby mobilizing another Rs. 1000+ Cr into the Biotech ecosystem. Thus, a larger pool of additional Biotech startups can be supported



AcE Fund Partners

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 product technologies, which are at or above TRL-7 stage, developed by Indian Start-ups through funding programs of BIRAC or through support from other sources. Five projects are ongoing and few more projects have been shortlisted for funding support in 2021-22.

BIRAC is promoting product/technology development in different fields of biotechnology through various funding schemes such as BIG, BIPP, SBIRI, PACE, IIPME and SPARSH. On successful project completion, the technologies developed with BIRAC support attain certain level of maturity, which is measured on a TRL (Technology Readiness Level) scale of 1 to 9. When the technology/product has been successfully validated (TRL 7 and above) and is moving towards commercialization, then besides technical and funding support, the start-ups also require guidance and support on various other issues such as IP, technology transfer, regulatory, business plan, market conditions, networking, etc. PCP fund addresses a few of these critical requirements through target funding.

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 become a Product Development Partner of such technologies by providing required support including financial grant, mentoring, connecting with Investors, regulatory facilitation, market access, etc.



Besides BIRAC supported start-ups, Indian Biotech start-ups with products/technologies of National importance, developed through support from other sources, and which are at TRL-7 or above are also eligible. PCP fund application if submitted online throughout the year is evaluated once every quarter.

A BIRAC internal PCU Committee identifies those projects that have attained TRL 7 or higher TRL and have the potential to get commercialized. Projects short-listed by the BIRAC internal Committee are placed for the consideration of SCPC committee which identifies the specific needs of the project and accordingly recommends and decide the funding support and deliverables.

Seven start-ups funded under PCP Fund and six projects are ongoing and one project has been successfully completed.

List of the supported startups and their technology/project are as follows:

1. Aarna Biomedical Products Pvt. Ltd.

(Sampoorti: A mobile and concise suitcase comprising of prosthesis of different sizes, pocketed bras of different sizes with prosthesis covers).

2. Medtra Innovative Technologies Pvt. Ltd.

(Vein tracking/finder device with augmented reality using NIR).

3. InnAccel Technologies Pvt. Ltd.

(VAPCare: An intelligent secretion and oral hygiene management system to prevent a deadly infection called ventilator associated pneumonia, which is responsible for more than 250,000 deaths every year in India alone).

4. BonAyu Lifesciences Pvt. Ltd. (Jubeln Lifesciences Pvt. Ltd.)

(Oral thin film platform for the delivery of Nutraceuticals, Cosmetics & Personal Care industries as a better alternate to the conventional tablets, capsules, liquids and gels.)

5. Fibroheal Woundcare Pvt. Ltd.

(Silk protein derived surgical wound dressings and other wound management solutions).

6. Innaumation Medical Devices Pvt. Ltd.

(AUM Tracheo-Esophageal Voice Prosthesis for Laryngectomy Patients)

7. Aspartika Biotech Pvt. Ltd.

(Production & Commercialization of Omega 3 Fatty Acids based products and nutraceuticals using Supercritical fluid extraction technology)

As mentioned above one project i.e. project from Aspartika Biotech has been successfully completed. Company will start benefit sharing from the Financial Year 22-23

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.



Biotechnology Industry Research Assistance Council





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

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



LAUNCH EVENT

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

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





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

bigangels Powered by IAN



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



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 Rs. 350 Cr.

Highlights of BioAngels during FY 22-23:

- BioAngels website launched and operationalized.
- 2 Startups raised funding through BioAngels:
 - Voiceoc Innovations Private Limited raised ~Rs. 4 Cr.
 - Serigen Mediproducts raised ~Rs. 5.8 Cr.
- A series of webinars were organised in partnership with GFI, FITT, IITK, ABLE and Startup India
- BioAngels signed a MoU with FABA.
- BioAngels "Angel Investment masterclasses" having 8 sessions was organized

Intellectual Property & Technology Management

IP & Technology Management group at BIRAC carries out IP evaluation for grant proposals that it receives under different 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.

BIRAC-PATH Scheme- A Program to facilitate the protection of Intellectual Property and Technology Transfer & Commercialization

BIRAC started "BIRAC-PATH" program to provide support for protecting the intellectual property generated in the supported project. Support under the program is not only limited to the Patent drafting & filing, it also provides facilitation for Patent searches and supporting the Institutions on framing the IP Policy document. Further, the program provides support to start-ups, academia and SMEs on Technology evaluation, marketing and drafting of license agreement.

Under BIRAC-PATH, around 30 Patent applications have been supported for Provisional, Complete filing in India, PCT filing as well as National Phase filing. In FY-2022-2023, 3 patent applications were supported for National Phase filing and Complete filing.



Sensitization & Capacity Building Program on IP & Technology Management

Three (3) awareness sessions were conducted in FY-2022-2023 to create the awareness on Patent searches, filing process, documents required for patent filing and technology transfer process. These 3 in-person workshops were conducted in Pondicherry University, BITS, Pilani and University of Delhi, South Campus. In addition to this, 3 such virtual sessions were also conducted with Savli Technology & Business Incubator, Punjab State Council for Science & Technology and Dr. B L Institute of Biotechnology.

IP & Technology Management Law Clinic Connect- An advisory and mentoring program for start-ups, scientists, entrepreneurs, researchers on IP & Technology Commercialization-Three (3) such mentoring sessions were conducted during FY-2022-23.









Regulatory Facilitation

BIRAC Regulatory Cell

One of the important variables affecting the future expansion of the Indian biotechnology industry is the regulatory environment. Adhering to the government's ease-of-doing-business policy, 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".

Through the Regulatory Advisory Committees, BIRAC has facilitated identifying probable regulatory issues for startups as well as established industries issues in the area of Biosimilars, Vaccines, Agriculture, Secondary Agriculture, Industrial Biotechnology, Medical Devices, and Diagnostics. Regulatory Advisory Committee has members from all the above-mentioned areas and it helps in identifying regulatory requirements for the proposals shortlisted for Apex consideration in the SBIRI, BIPP, PACE, SPARSH, and NBM programs of BIRAC.

For the year 22-23, three meetings were held in the month of May, September, and February with a total of 59 projects discussed and advised for their regulatory milestones. Another milestone was the approval of broad guidelines and terms of reference for identifying regulatory challenges and possible regulatory requirements for agriculture theme areas for BIRAC supported projects.

FIRST HUB - Facilitation of Innovation and Regulations for Start-ups and Innovators

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 were organized and 790+ queries were addressed. During last financial year seven meetings were conducted wherein around 50 queries were discussed.









Regulatory guidance through FIRST Hub & RIFC

FIRST Hub (Facilitation of Innovation and Regulations for Start-ups and Innovators) is an initiative to address the queries of Startups, Entrepreneurs, Researchers, Academicians, Incubation Centres, SMEs etc. 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.

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



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

BIRAC has supported a technology transfer program of developing bio-fortified and disease resistant transgenic bananas by Indian research institutions using gene constructs from Queensland University of Technology (QUT), Australia.

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.

In the 2nd phase of the project, the transgenic plants generated in the lab were transferred to the fields for further testing in 2022-23. Promising transgenic banana events having high PVA content and iron (higher than the control) in ripe-fruit-pulp were identified. These plants will now be subjected to Event Selection trials. For BBTV resistance, molecular, agronomic and yield data is being generated.







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

Gene construct: NABI-DXS

BIRAC and USAID supported wheat project

On account of increase in population, deteriorating soil quality, continuously and unsustainably sinking water table coupled with the proportion of the population below the poverty line, food security in the Indo-Gangetic plains has become a major challenge.

To address some of these challenges, BIRAC has supported a project entitled "Development of heat tolerant, high yielding and climate resilient wheat cultivars by utilizing genomics, molecular and physiological information and resources". Under this, heat-tolerant varieties are being developed by building upon the available resources and breeding materials



by utilizing information from model systems and currently available modern breeding, genetic, genomic, physiological, and biochemical tools.

In the process, genes/QTLs controlling heat tolerance are being identified, mapped and tagged; improved insight into physiological, genetic, biochemical, and molecular bases of the trait obtained, and a system being put in place to utilize the new information in cultivar development.

BIRAC-IKP Grand Challenges in Agri-technology Translation for Boosting Farmers' Income



BIRAC in partnership with IKP Knowledge Park has conducted 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.

Under the program, innovative technologies, practices, products, services and/or integrated solutions that have been piloted at a small scale in India will be identified, funded, monitored for field testing over a period of 30 months through a 2-stage process in this program. During 2021-22, 10 start-ups were selected for Stage I award of the Agri-Grand Challenge (AgGC) to test and demonstrate their technologies for application in the farmer's field.





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 call is being regularly conducted. The projects have resulted in development of PoC. Patents have been filed for few technologies. Strategies for supporting the developed outcomes is under process.

A Discussion meeting was conducted on 'Synthetic biology in India-Way Forward'. The meeting was Chaired by Secretary DBT and Chairperson BIRAC, Dr Rajesh S Gokhale and was attended by representatives from DBT, BIRAC and researchers from academic institutes. The meeting aimed at understanding the synthetic biology status in India and ways by which synthetic biology can help India in achieving the goal of affordable product development.





Innovation Clean Technology - Scale up

Under the 100 days 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. A few potential technologies, which had achieved TRL 7, supported by DBT/BIRAC were shortlisted for consideration. Out of these, a total of 4 technologies are being implemented in association with the Municipality/ULB of Goa, Bangalore and Greater Mumbai.

One project has been completed. A 2 ton per day plant using organic fraction of municipal solid waste for conversion to biogas has been installed at Haji Ali in Mumbai. The biogas generated is being converted to electricity and is being used at electric charging station. The remaining three are being monitored for data generation.

The second call for proposals was announced in December 2022 and proposal evaluation 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. The DBT-BIRAC clean tech Demo Park will show case the technologies which can be used for cleaning the drain. Clean energy Incubator, New Delhi will be the local implementation

partner. The technologies for implantation have been shortlisted. The proposal for setting up the park has been submitted by the incubator and is under evaluation. A meeting with DDA was held up to decide the roles and responsibilities of DBT, BIRAC and DDA. The activity is ongoing.

Niche area meeting on 'Approaches for E-waste Management'

Electronic waste is becoming the fastest-growing waste material. Innovative technologies in the management of e-waste issues may provide efficient, economical, and easy-to-implement solutions and therefore play an important role in recovering and re-using essential metals from secondary sources. Hence, BIRAC organized a Niche area meeting with Industry-Academia interaction on "Approaches for E-waste Management" on 14th October 2022 which is also International E-waste Day. The meeting was conducted at CSIR Science Centre, Lodhi Gardens, and was attended by representatives from government bodies, industry, and academic institutes such as IITs, TERI, CSIR-IIP, and Jaypee Institute. The meeting was conducted in a hybrid mode to understand the challenges of the sector and possible solutions.



Discussion session between BIRAC officials and representatives from government bodies, industry, and academic institutes



Dr. Subhra R. Chakrabarti (Director Operations-BIRAC), Dr. PKS Sarma (Head Technical-BIRAC), and BIRAC officials with representatives from government bodies, industry, and academic institutes.




Webinar on, 'Fermentation: Interplay of Microbes, Immunity, and Nutrition'

Atwo-day webinar series on, 'Fermentation: Interplay of Microbes, Immunity, and Nutrition', was organized during 3rd-4th February 2023, as part of the Industry/Academia mentoring of BIRAC in collaboration with the Dept. of RDAP, North-Eastern Hill University (NEHU), Tura Campus (Meghalaya). The webinar series featured speakers from academia and industries from various parts of India. The webinar was also streamed live through YouTube. More than 2000 participants (startups, entrepreneurs, MSMEs, faculties/scientists, PhD/Post-docs) attended the 2-day webinar. Biotechnology Industry Research Assistance Council (BIRAC) also presented its role in fostering public-private partnerships for innovative product/technology development through its various schemes.



Webinar session held during different modules between BIRAC officials and representatives from startups, entrepreneurs, MSMEs, faculties/scientists, PhD/Post-docs.

Initiative on Smart Proteins

A Discussion Meeting was conducted on 28th July 2022 to prepare a policy guidance paper on 'Proteins & SMART Proteins'. The meeting was chaired by Dr. V. Prakash (Ex-Director, CFTRI, Mysore) in the presence of Dr. Rajesh S. Gokhale (Secretary-DBT, Chairman-BIRAC), Dr. Alka Sharma (Senior Advisor-DBT, MD-BIRAC) and was attended by representatives from DBT, BIRAC, and delegates from academic institutes. The meeting aimed to draft the policy paper on smart proteins on how India can become a leader in smart proteins including the constraints, the technology gap areas, the policy requirements, and the techno-economic viability. Under the smart proteins initiative after a series of brainstorming sessions, a draft for a national policy paper was developed in December 2022.



Dr. V. Prakash (Committee Chairman and Ex-Director, CFTRI, Mysore), Dr. PKS Sarma (Head Technical-BIRAC), and BIRAC and DBT officials with representatives from government bodies, and academic institutes.



Program on Guar Gum

The Guar Industry has evolved from being used for domestic and ruminant feed purpose 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. Leading players operating in the global guar gum market include Jai Bharat Gum, Vikas WSP, Hindustan Gums, Shree Ram Gum, Cargill Inc., Lucid Group, Ashland Inc., Supreme Gums Pvt. Ltd, India Glycols Ltd, Rama industries and Lamberti.

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

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



Areas supported under Guar Gum

Technology and product development under Guar Gum in FY 2022-2023:

Indigenous Wall Putty (Shriram Institute for Industrial Research, Delhi)



The project focuses on development of technology for synthesis of a novel derivative of guar gum methyl hydroxyalkyl guar gum, which can be explored for its use in building material mixtures such as wall putty formulation. The development of this technology will

help in substituting this material in place of imported methyl hydroxyalkyl cellulose being used presently for this application.



Guar Split before derivatization and after derivatization with ethylene oxide and methyl chloride





BIRAC Regional Centres

BIRAC Regional Centers serve as extended arms of BIRAC, designed to expand entrepreneurial ecosystem coverage across the country. Each regional center is also given a specific mandate so as to address certain gaps of the ecosystem collectively with all regional centres. Setting up of BIRAC Regional Centres is also a committed target for the biotech sector under the Startup India Action Plan announced by the Hon'ble Prime Minister in 2016.

The Four BIRAC Regional Centres are as follows:

- 1. BIRAC Regional Innovation Centre (BRIC) at BioNEST-IKP, Hyderabad
- 2. BIRAC Regional Entrepreneurship Centre (BREC) at BioNEST-C-CAMP, Bangalore
- 3. BIRAC Regional Bioinnovation Centre (BRBC) at BioNEST-Venture Centre, Pune
- 4. BIRAC Regional Techno-Entrepreneurship Centre for East & North East (BRTC-E&NE) at BioNEST-KIIT, Bhubaneswar

BIRAC Regional Centre	A BIRAC - IKP Initiative 2013-2021	A BIRAC - C-CAMP Initiative 2017-2023	A BIRAC - Venture Center Initiative 2018-2022	A BIRAC - KIIT-TBI Initiative 2019-2023
Nurture Entrepreneurial ecosystem in the different geographies through Evangelization & Awareness activities	✓	✓	~	✓ With a specific focus on East & North East Regions of the Country
Regional Innovation Ecosystem Mapping	✓ (pan India in 3 phases)	-	-	North East and East
Regulatory Facilitation & Mentoring	-	-	✓ (for Medical Devices and Diagnostics pan- India)	-
Incubator Manager Training	-	✓ (from 2020 onwards)	 ✓ (initiated and expanded to 2 other centres) 	✓ (from 2019 onwards)
Investor Connect	-	 ✓ (primary task, later expanded to other centres) 	-	✓



Thematic Technical and Business trainings & Workshops	✓	\checkmark	\checkmark	✓
Bootcamps, Hackathons	-	 ✓ (initiated and expanded to other 2 centres) 	\checkmark	✓
National Level Entrepreneurship Challenge	-	√	-	-

Impact created by the BIRAC Regional Centres so far:

- 1. Systematic Innovation mapping conducted region wise across 22 clusters covering the country. The study was carried out in 3 phases to understand local knowledge generation capacity and enabling factors to identify the gaps that hinder biotech entrepreneurship and progression of commercialization of innovations.
- 2. 25,000+ participants benefitted by Entrepreneurship development training programs & workshops
- 3. National Biotech Entrepreneurship Challenge (NBEC) has emerged as a flagship platform that has attracted over 15000 Registrations from 35 states across the country. The program mobilized over Rs. 35 Cr. as Cash Awards & Investments for startups and students.
- 4. A Regulatory guidance centre that is accessible to Startups called "Regulatory Information Facilitation Centre (RIFC)" has been set up.
 - a. 400+ startups facilitated for Regulatory Support
 - b. 12 ISO Certifications, 18 Licences/approvals facilitated
 - c. Reference Regulatory resource Database for Medical Devices and Diagnostics created
- 5. Incubator Manager Training program a pioneering initiative
 - a. 150+ Incubation Centre new Managers trained
- 6. 1000+ One-on-one business meeting sessions between Startups & Investors
- 7. Promoting awareness and extending support through training, mentorship, and partnerships in the North Eastern Region for Startups, Entrepreneurs, and Research Institutions
 - a. 500+ Rural Women Entrepreneurs and SHGs across East and Northeast provided with the skillset to use traditional knowledge with modern biotechnology interventions through skill development training programs
 - b. New collaborations and MoUs made with more than 15 institutes in NER









Glimpses of activities conducted by BIRAC Regional Centres

A new Regional Centre **"BIRAC Regional Field Validation Centre (BRFC)**" to facilitate Field Validation support to Startup products/technologies is currently under consideration through harnessing the strength of 7 hospital based BioNEST Bioincubators.



3i Portal

3i Portal has been providing a user-friendly and convenient solution for effective management of various funding schemes of BIRAC. New features are added to the portal on regular basis in order to enhance the ease of use for all types of users. 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 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) and development of mobile application.

In addition, it is also envisaged to develop a networking portal as a platform to connect the biotech community (at national level as the first step and subsequently at global level). The networking portal shall provide information about products and services offered by various companies, key areas of active research being undertaken by companies/academic institutes/entrepreneurs, technologies available for licensing/sale etc.

A technology portal was launched on the 6th Foundation Day of BIRAC which provides information about the technologies and products emerged out of BIRAC funding which are launched in the market or ready to enter the market. There are around 190 technologies/products on the portal for technology seekers to connect with the innovators.

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.

This portal has been enhanced with some new features such as:

- Spotlight: To post achievements and get recognition at the national & international level
- Get connected with other Startups and entrepreneurs of your domain
- Networking with relevant investors/experts with one-to-one connect
- Discussion Board to share and learn from peers
- Post Jobs to find the right talent & built a team, seek interns
- Highlights: Stay updated with the latest announcements, and opportunities in the field



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 Project Management Unit (PMU) at BIRAC, and is collaboratively funded by the Department of Biotechnology (DBT), Bill & Melinda Gates Foundation (BMGF), and the Wellcome Trust, which is a program-based partner. The MOU was renewed in 2017 for five years till 2022.

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 works across these themes in Maternal and Child Health, Infectious diseases, Agriculture and nutrition, and MedTech development and entrepreneurship support.

The partners, DBT and the Gates Foundation renewed the Memorandum of Understanding (MOU) on 7th June 2022 in New Delhi. They pledged a combined \$ 50 million investment to fund research and development for affordable and practical solutions. The cabinet has approved the renewal of the MOU.



qHPV Clinical Development

India has come up with its first indigenously-developed vaccine against cervical cancer. The development of



quadrivalent (6,11,16 and 18) Human Papillomavirus vaccine (qHPV) 'CERVAVAC' is an outcome of a partnership between the Serum Institute of India (SII), DBT through its Grand Challenges India, BIRAC along with the Bill and Melinda Gates Foundation (BMGF).

Serum Institute of India Pvt. Ltd. has received marketing authorization approval from the Drug Controller General of India (DCGI) for CERVAVAC on 12th July 2022, and the vaccine is available in Indian market.

Union Minister of State (Independent Charge) Science & Technology; Minister of State (Independent Charge) Earth Sciences; MoS PMO, Personnel, Public Grievances,

Pensions, Atomic Energy and Space, Dr Jitendra Singh launched India's first indigenously developed vaccine, "CERVAVAC" for the prevention of cervical cancer on 1st September 2022.

Women Leaders in Global Health (WLGH)

Grand Challenges India in collaboration with WomenLift Health organized "Women Leading Change in Health and Science in India" conference on 6th December 2022 in New Delhi. The conference honored and celebrated Indian women's accomplishments in overcoming unprecedented challenges over the past few years and advancing STEM innovation and healthcare with their indefatigable resilience and unwavering perseverance.





The event was graced by Dr. Jitendra Singh, Hon'ble Minister of State (IC), Ministry of Science and Technology; Ministry of Earth Sciences; Minister of State, PMO; Department of Personnel, Public Grievances & Pensions; Department of Atomic Energy and Department of Space, Government of India, Dr. Bharti Pravin Pawar, Hon'ble Minister of State for Health and Family and Ms. Melinda French Gates, Co-chair and Trustee Bill and Melinda Gates Foundation.

Mobile Diagnostic Labs

The partnership supported the establishment of four mobile labs to generate proof-of-concept for such facilities. These mobile laboratories provided diagnostic support services to organizations during biological emergencies and ensured the safe handling and preservation of samples from disease outbreaks and surveillance. India's first mobile, I-lab is deployed and managed by the bio-assay laboratory of THSTI.



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



mobilization to remote regions of Kerala for COVID and other emerging pathogen testing.

The PARAKH model, was of the Defence Food Research Laboratory, Defence Research and Development Organization (DFRL-DRDO). The fabrication of two mobile labs was undertaken by DFRL-DRDO's industrial partner, Microflow India Devices Private Limited, Chennai.

These two mobile labs were subsequently deployed at IITM, Chennai, and IIT Guwahati, respectively. These labs are accelerating the timely efforts of the DBT & BIRAC in tackling the COVID-19 pandemic in the Covernment of India as a solf sufficient model in healthcare

collective and cooperative efforts with the Government of India as a self-sufficient model in healthcare technologies leading towards 'Atma-Nirbhar Bharat'.

All Children Thriving (ACT)

"All Children Thriving" (ACT) was launched as an open call under GCI initiative with the intent to create and measure integrated solutions for healthy birth and development. One of the supported programs has led to the establishment of bio-banks/biorepositories at Translational Health Science and Technology Institute, Faridabad. The platform has collected and processed biological samples from ~9000 participants [(~10,50,000 diverse biospecimens and ~5,50,000 USG images) that have led to several sub-studies for quality checks of biospecimens.

sub-studies for quality checks of biospecimens. The Women and Infants Integrated Growth Study (WINGS), was another full grant, designed as an individually randomized factorial design trial. The study enrolled 13,500 married women aged 18-30 years residing in the low-income-to lower-middle-income



Proportion reduction in LBW, SGA, and stunting by pre-conception and pregnancy interventions

neighborhoods of Delhi, with no or one child and with fertility intentions. The findings indicate that a package of interventions in multiple domains when delivered concurrently had a significant impact on the outcomes.

Additionally, these interventions also improved several maternal outcomes-increased gestational weight gain, reduced risk of anemia, micronutrient deficiency, reproductive tract infections, and pregnancy-induced hypertension. The study findings have been published (BMJ 2022; 379: e072046), and may have future policy implications. In light of the trial's promising results, the government of Himachal Pradesh has expressed interest in pilot scaling up of the WINGS interventions in the state.



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

The findings of this randomized controlled trial have demonstrated that nutritional supplementation given to mothers during lactation does improve child growth in the first 6 and 12 months of life but also improves maternal health. Further, it was also observed that nutritional supplements for infants between 6-12 months of age boost their linear growth and other anthropometric indices. The IMPRINT trial has resulted in two publications in the American Journal of Clinical Nutrition (https://academic.oup.com/ajcn/advance article/doi/10.1093/ajcn/ nqab304/6391404 and https://academic.oup.com/ajcn/article/113/4/884/6132002).

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

Considering that universal measures to quantify early child development are lacking, the Global Scale for Early Development (GSED) was developed for neurodevelopment assessment in young children.

The study provided an opportunity to understand the responsiveness of GSED tools and validate them against standardized psychometric tools in 1500 children, particularly from low-middle-income settings. It has been implicated that these tools do not require psychologists and can be administered at home. An additional advantage that emanates from the study is the possible increased awareness regarding early child development in the caregivers residing in the study area(s).

Garbh-Ini Research Projects

GarbhIni Cohort - an inter-institutional research program in India supported by DBT has led to several sub-studies including Multi-Omics for Mothers and Infants (MOMI) Consortium, which is pooling data from high-quality cohort studies and biorepositories in Asia and Africa. The consortium is addressing global health questions with harmonized clinical variables, and capacity-building for omics analysis. Through the platform, GarbhIni is contributing to the development of a standard sample inventory tracker by sharing the clinical/phenotypic data in a harmonized format.

Another sub-study nested in GarbhIni, is evaluating N-linked glycosylation dynamics in longitudinal samples from Gestational diabetes mellitus (GDM) patients and controls, aiming to develop innovative diagnostic and surveillance approaches for GDM, to optimize diagnosis and reduce neonatal morbidity.

The cohort is also a part of the Selenium Study Consortium, under MOMI, and is conducting a study to assess the connections between maternal nutrient concentrations during early pregnancy, their genetic predictors, and pregnancy outcomes in a subset of 2000 women.

GCI is also supporting the GarbhIni India Pregnancy Risk Stratification Platform Alignment (GIPA) led by CMC Vellore, supported by Foundation - to align and validate findings from GarbhIni platform in a subset of the India PRS Platform.

The chosen sites are Makunda Christian Leprosy and General Hospital (MCLGH) in Bazaricherra, Silchar District, Assam, and Community Health Centre (CHC) in Hodal, Palwal District, Haryana. Periodic surveillance is being conducted in these catchment areas to gather population-based information on risk factors leading to adverse pregnancy outcomes, the maternal mortality ratio, and morbidity/mortality in newborns and children. Total 1800 women has been recruited.

Grand Challenges Exploration

Grand Challenges Exploration (GCE)-India is one of the unique initiatives under Grand Challenges India initiative that is aligned with the Government's "Start-Up India" initiative with the aim to encourage entrepreneurship, basically seeking to validate ideas from talented and motivated individuals that lend themselves to be incubated in start-ups across India.



In the last five years, a total of 36 projects have been supported under the call with the intends to develop new medical technology devices, drug delivery systems, diagnostics, and technology-enabled service models that can potentially be made available to people from all socio-economic strata. The program has resulted in ~30 publications and numerous patents. The learning and outcomes of the program will have a greater impact in the long run.

Sentinels Initiative

The "Sentinels Experiment" supported seven innovation practitioners who explored, piloted, and tested various concepts aimed at addressing a wide range of health issues.

The pilot grant projects have yielded promising results, paving the way for further research in identifying actionable biological pathways and configurability analysis. The program has brought seven publications. Two patents were granted and One applied for in India, UK and US, for the work, which was partly supported by the Sentinels award.

The two Sentinels have received follow on funding to strengthen the evidence for their approach and their dissemination.

These exceptional scientists, through this program, leveraged grant resources and contributed to supporting exciting cutting-edge research, making significant strides in advancing scientific knowledge and improving healthcare outcomes.

The MedTech Challenge

The Med-Tech Challenge: Market Acceleration Training & Award program was initiated with an intent to meet the needs of Indian innovators and entrepreneurs working in the areas of developing medical technologies for public health who have a validated proof-of-concept for their technology and are in the process of taking their product to market. Under this program, DBT-Gol, BMGF, & Wellcome have funded 4 compelling and unfinished medical technologies and tools through a competitive grant process and a portfolio approach.

Diagnostics for Neglected Tropical Disease (NTD) – Lymphatic Filariasis (LF)

Aligned with Global and Government of India's accelerated plan to eliminate Lymphatic Filariasis (LF), Grand Challenges India (GCI) launched an open call on mandate entitled "Diagnostics for Neglected Tropical Disease (NTD)-Lymphatic Filariasis (LF)" with the funding support of the Department of Biotechnology (DBT) and the Bill and Melinda Gates Foundation (BMGF). The program was intended to try to support diagnostics development in alignment with the WHO Diagnostic Technical Advisory Group-developed Target Product Profiles and is intended for field use in the National LF Elimination Programme, primarily in India and globally.

Of 43 proposals received under this call, the Technical Advisory Group recommended 7 proposals for funding support under the program. The recommended proposals are being processed further for the execution of grant agreements and ensuring financial support.

Indigenous HPV Diagnostics Program

HPV vaccination is the most effective primary preventive approach against the disease however, secondary measures, i.e., routine screening and treatment of precancerous lesions can prevent most cervical cancer cases.

Considering the same, GCI is supporting a program that is intended for the development of cost-effective *indigenous HPV diagnostics* not only for India but also for other low- and middle-income countries (LMICs). The main objective is the accelerated development of a test that would provide the best balance of diagnostic accuracy and cost-efficacy for utilization in primary care settings and is deployable in national programs using a single-visit approach.

Biotechnology Industry Research Assistance Council



Nutrition-Sensitive Agriculture

The MSSRF's Nutrition-Sensitive Agriculture program was carried out by the M. S. Swaminathan Research Foundation in collaboration with four State Agriculture Universities and Krishi Vigyan Kendras (KVKs) in four aspirational districts, focused on achieving food-based nutritional security for malnourished rural households by creating Nutri-gardens and enhancing nutrition literacy among 2000 smallholder farmers.

A total of 80 villages, 20 at respective KVK Thiruvallur, Kanpur Dehat, Palghar, and Jeypore, were engaged in the program and adopted the approach in order to boost dietary diversity and encourage healthy eating, and received seed/sapling kits comprising 25 nutri-rich germplasms. As of now, the project activities have been successfully completed at the respective sites. The program completed its tenure in March 2023.

The establishment of nutri-gardens contributed to improved food intake and nutrition awareness in the participants. Experimental villages showed increased consumption of dark green leafy vegetables, Vitamin A-rich vegetables, and essential nutrients like protein, zinc, folate, thiamine, and Vitamin C. Additionally, under-five children in experimental



villages consumed more nutritious fruits and vegetables based on 24-hour recall data, collected by NIN-ICMR.

Training on diverse diet and nutri-rich local crops led to over 68% of households benefiting, resulting in higher diet diversity scores in the experimental group compared to the control group.

Knowledge Integration (ki) Data Challenge

The Data Science Challenge represents the sixth call under GCI, aimed at encouraging innovative data-driven approaches to address critical scientific questions related to maternal and child health and development outcomes. The initiative was aligned with the Grand Challenges calls from Brazil and later with Africa, fostering South-South collaborative efforts in addressing pressing health challenges.

The research groups supported through this initiative comprise a diverse mix of public health researchers and data scientists.

One group from SJRI developed and hosted the ICDS supplementary nutrition optimization tool (www.datatools@sjri.res.in). The ICDS tool developed under this project has thereafter been funded by WHO to develop optimized Hot Cooked Meals for preschool children under the ICDS program in each and every state of India.

Another group THSTI in collaboration with IITM, has developed a three **Gestational Age (GA) estimation models**; Garbhini-GA1-a non-linear formula for first-trimester GA estimation with low error range (Published in BMC Pregnancy and Childbirth-https://pubmed.ncbi.nlm.nih.gov/33931016/), Garbhini-GA2: Polynomial regression model for second and third-trimester GA estimation, outperforming existing models and, GAUGE (Garbhini Ultrasound image-based Gestational age Estimator) for predicting GA.

Non-Hormonal Contraceptive Discovery Program (NHC-DP)

GCI is supporting Strand Life Sciences, to conduct an extensive screening of 1000 women with idiopathic infertility, aiming to identify genetic targets for female contraception.

This biphasic study aims to develop a data set that will serve as a valuable resource for further assessment of the potential of these genetic variants in identifying potential target candidate for contraceptive drug. The feasibility study has finalized study documents including Clinical Study Protocol, including recruitment of 10 subjects and collection and biobanking of blood samples and performed whole exome sequencing for all 10 subjects and generated QC metrics.



Antimicrobial Resistance (AMR)

Given the increasing importance of tackling AMR in developing geographies, GCI launched an AMR program that was primarily aimed at encouraging innovation in tackling AMR under three specific categories namely solutions for better use of surveillance data to achieve actionable results, innovations in products and technologies to break infection cycles in healthcare settings, and removing antibiotics from effluents.

Ten projects supported under the program have been completed has resulted in diverse solutions that are being further explored to address the AMR in India.

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, Grand Challenges India has facilitated the establishment of the Global Health Research Unit at Kempegowda Institute of Medical Sciences (KIMS), Bangalore through the support of Wellcome Sanger Institute to provide intelligent global surveillance of bacterial pathogens using whole genome sequencing (WGS).

The study has led to the identification and warning systems of novel pathogen variants that may be particularly virulent or transmissible (Reference: CID supplement, https://academic.oup.com/cid/issue/73/Supplement_4). Outputs of GHRU have been cited in key policy documents by the WHO as examples of best practice and have led to commissioned documents for the WHO, influencing policy and guidance for member states around the use of WGS. Based on the promising results of GHRU Phase-I study, team has proposed Phase-II of GHRU project to enhance surveillance for monitoring interventions (e.g., vaccines).

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 "Establish a monitoring system for COVID-19 through environmental surveillance in sewered and unsewered areas of Hyderabad".
- 2) BITS Pilani-waste water-based epidemiology and screening for COVID-19 study aim to connect the analytical data from determining SARS-CoV-2 in multiple sites. The study reports SARS-CoV-2 detection in wastewater by molecular diagnostic method, which is crucial for wastewater-based epidemiology and surveillance of SARS-CoV-2 in local communities.

Scientific Sub-Committee of National Technical Board on Nutrition (SSC-NTBN)

A Scientific Sub-Committee of National Technical Board on Nutrition (SSC-NTBN) was constituted by NITI Aayog in 2018 to make technical recommendations to the National Technical Board on Nutrition (NTBN) on policy relevant issues referred to SSC-NTBN from time to time and to coordinate the collation, synthesis of existing scientific and operational research along with identifying research gaps for setting up of potential research agenda. The program completed its tenure in January 2023.

During the tenure, 5 Secretariat meetings and 2 Working Group Meetings (Research Activities and Policy Implementation) were held to examine and make technical recommendations on the guidelines, proposals and counselling notes sent by Ministry of Women and Child Development, NITI Aayog, Govt of M.P. and NIN, Hyderabad. Summary of the outcomes are as follows:

> Policy related outcomes:

 Recommendations to finalize the National Guidelines such as Operational guidelines for infant and young child feeding practices (IYCF) and Operational Guidelines on prevention of malnutrition and communitybased management of severe acute malnutrition (c-SAM). Technical recommendations on specific





sections of the National Guidelines such as Nutritional Guidelines on Low-birth-weight infants, Counselling Note for IYCF and Appetite Assessment Test" for identifying SAM children were forwarded.

- > Identification of research priority areas:
 - More than 30 research priority areas in Public Health and Nutrition were circulated to MoHFW, ICMR, DST, DBT, Ministry of Agriculture, ICAR, Ministry of Food Processing Industries and FSSAI

जनCARE Innovation Challenge

"जनCARE" Innovation Challenge-Reimagining the Healthcare Delivery in Low Resource Settings: BIRAC, NASSCOM and NASSCOM Foundation launched the Innovation Challenge- "जनCARE" in collaboration with GCI, as a nationwide "Discover-Design-Scale" program, envisioned to identify Innovative health-tech solutions by Start-ups for strengthening the Healthcare Delivery in India. The platform aimed at supporting 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. 15 Healthtech solutions at TRL 7 were provided an opportunity for field validation in Low Resource settings at selected PHCs, CHCs, Sub-Centers, etc., in rural and semi-urban locations.



Success story of जनCARE" Innovation Challenge





National Biopharma Mission (NBM)



The National Biopharma Mission (NBM), is an Industry-academia Collaborative Mission for Accelerating Discovery Research to Early Development for Biopharmaceuticals – An "Innovate in India for Inclusiveness (I3)" project.

The National Biopharma Mission of Department of Biotechnology, Government of India, was approved by the Union Cabinet with a total budget outlay of Rs. 1,500 Cr, of which 50% is co-funded by The World Bank. The program is being implemented by Biotechnology Industry Research Assistance Council (BIRAC) Program Management Unit and is aligned with the national mission of "Make-in India' and "AatmaNirbhar Bharat".

The mandate of National Biopharma Mission is to enable and nurture an ecosystem to advance India's technological and product development capabilities in biopharmaceuticals, 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 Component

NBM is focused on two components to realize its objectives:

- 1: **Ecosystem Development:** To create an enabling environment by strengthening and enhancing existing infrastructure, building effective collaborative partnerships/consortiums for development of cutting-edge technologies, enhancing clinical expertise, and accelerating translational research. The program sub components include the following:
 - 1.1 **Shared facilities:** Establishing/strengthening shared research/ manufacturing facilities that are accessible, equipped with state-of-the-art infrastructure and employing relevant talent that can provide services at affordable cost.
 - 1.2 **Scientific Research:** Building a consortium of partners, a network of research entities, for development of innovative technologies and platforms currently not available in the country.
 - 1.3 **Clinical Trial Networks:** Clinical trial units linked to a network of clinical experts and sites for conducting standardized, regulated, as well as reliable clinical trials.
 - 1.4 **Skill development or Training:** Development of skilled manpower equipped with next generation inter-disciplinary competencies.
 - 1.5 **Technology Transfer Offices:** To enhance Technology Transfer capabilities across different verticals.
- 2: **Development of Specific Products:** The products supported are aligned with the objective of bringing affordable healthcare products for high disease burden/ need in the country. **The program subcomponent includes Vaccines, Biotherapeutics, Medical devices and diagnostics.**





Program Components and Subcomponents



NBM components and subcomponents





National Biopharma Mission Summary



NBM summary of grantee distribution across industry & academia including public and private entities



NBM component wise major outcomes.





At the beginning of the mission, project development objectives and targets were identified. Cumulative targets defined for year 5 and the achievements are mentioned below:

S. No.	Project Development Objectives	5 year Targets for NBM (till Jun 2023)	Current Achievements
1	Number of products addressing public health priorities advanced at least one step on the product development pathway	45	0
2	Number of companies using shared facilities supported by the project	260	50
3	Number of technologies licensed for manufacturing or commercialization (Number)	19	0
4	Number of clinical trial sites that are GCP compliant	46	5
5	Number of people trained	6937	1335
6	Percent of people trained who are women (%)	46	50
7	Number of TTOs established	7	5
8	no. of RTTPs	29	10
9	Number of new IP registrations or product prototypes (Number)	64	13
11	Number of product development agreements in place	197	9
12	Number of international publications	49	8
13	Proportion of grievances responded to and/or resolved within the stipulated service standards for response times	100	90

Project Development Objectives, Targets and current status

Key Highlights of Year 2022-23

- Liraglutide biosimilar by Levim Biotech LLP has successfully completed Phase III clinical trial and received SEC recommendation for Market Authorization.
- Tergene Biotech Pvt Ltd. has developed Pneuteger 15 (Pneumococcal Conjugate Vaccine, 15 valent). In December 2022, CDSCO's Subject Expert Committee recommended for grant of permission to manufacture and market PCV15 upon reviewing the Phase III (3+0) results.
- OmniBRx Biotechnologies Private Limited has launched their 5L single-use bioreactors for adherent cell culture and has sold 20 units globally in the financial year 2022-23.
- Bharat Biotech International Ltd. is conducting a seamless Phase II/III, observer-blind, multi-centre, randomized clinical trial to evaluate immunogenicity and safety of BBV87, an Inactivated Chikungunya Virus Vaccine in healthy subjects, 12-65 years of age. Phase II study is ongoing.
- Indian Immunologicals Ltd. has received regulatory approval to initiate Phase I clinical trial for dengue vaccine. A phase I single blind randomized placebo controlled study to evaluate the safety and immunogenicity of live attenuated tetravalent recombinant Dengue Vaccine of HBI in healthy adults of 18 to 50 years of age has been initiated.
- Shared Facilities: 14 of the supported facilities under vaccines, devices and biotherapeutics are actively providing services. The facilities are providing services to global and Indian clients.
- Centre for Advanced Protein Studies, at Syngene International Limited, Bangalore received GLP certification by NGCMA.



- Healthcare technology innovation centre (HTIC) has developed a flexible video endoscope and has initiated field validation for the product.
- 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
- The existing Translational Research Consortia for Dengue and Chikungunya have established serum biobanks and virus repositories with sequenced and characterized isolates of Dengue and Chikungunya. The consortia have established assays that are ready for transfer to industry/ academia and disease models as fee-for-service.
- Six new Demographic and Health surveillance sites (DHS) have been established under the DRIVEN Network (DBT's Resource of Indian Vaccine Epidemiology Network) 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 e-data management platform. Another 05 DHS sites are performing COVID, Dengue and Chikungunya seroepidemiology study in 25000 population cohorts distributed across India. Additionally, activities are underway towards initiating acute febrile illness surveillance across 10 sites in India.
- Five Clinical Trial Networks for oncology, diabetology, rheumatology and ophthalmology 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 for 21 diseases
 within these areas. Multicentric disease registries have been established with over >20000 patient data for
 each disease indication. Collated registry reports based on data from all sites is being prepared. The
 networks have started conducting sponsor driven clinical trials and investigator-initiated studies within each
 network.
- Under the training component, 1369 manpower were trained in year 2022-23.
- NBM grantees published 11 peer review publications in the year 2022-23.
- NBM grantees filed 09 IPs in the year 2022-23.

Under the various verticals, there have been several successful projects which came to fruition in the year 2022-23.





NBM Success Stories

Ecosystem Strengthening/Scientific Research/ Translational Research Consortia

Focuses on ensuring the translational ecosystem to stimulate, standardize and provide support for advancing development and evaluation of vaccines and monoclonal antibodies.

Dengue TRC-"Success Story"

Need: Availability of Indigenous Resources to accelerate Transnational Research in Dengue

- Dengue virus repository of ~75 Indian clinical isolates, sequenced, characterized and deposited to NCBI
- □ >100 dengue-specific human monoclonal antibodies (mAbs) characterized.
- □ High-throughput flow cytometry-based neutralization assays Optimized and validated



AG129 mouse model (optimized for DENV1, 2 and 4) established and vlidated – Available as fee for service model



- 3 collaborative proejects, 2 MoUs signed for antiviral drug and MRNA vaccie efficacy studies in Animal model established
- Outreach activities planned with Industry



In this consortium □ Patents filed : 03 □ Research articles published : 5

Dengue TRC: Consortia of 03 clinical partners (AIIMS Delhi, CMC Vellore and Manipal Academy of Higher Education), 04 laboratories (ICGEB, THSTI, NII and IIT Delhi) with CDSA as coordinator

Chikungunya TRC-"Success Story"

Need	Stimulation of discovery, and/or early translational research to enable	Impact		
		 Lock of collabration to nurture early to translational stage discovery of vaccine candidate. 		
	Creations of collaboration by cross-fertilization of ideas among clinicians, biologists, protein chemists, bioinformations, big data analytics, structural biologists and other domain experts decicated towards Novel Chikungunya Vaccine	Better understanding of the viral pathogenesis and their associated host response.		
			Access to animal models to academic researchers and	
Progress		 13 Collaborations were established for animal model usage service in Chikunguyna TRC C57BL/6 mouse models established in chinkungunya TRC. Established Viral biorepository for CHIKV isolates from various clinical cohorts Established mAb isolation capabilities 	 industry partners Access to clinical samples through well characterized state-of-art viral biorepository. 	
NBM Support	?	Supported the establishment of collaborations that combine complementary and synergistic research strengths from multidisciplinary Institutions for establishment of Translational Research Consortium for Chikungunya Vaccine		

Chikungunya TRC: Consortia of 03 clinical partners (Topiwala National Medical College, AIIMS Delhi, PGIMER), 02 laboratories (ICGEB, ILS Bhuvaneshwar) with Manipal Academy of Higher Education as coordinator and TRC lead



Ecosystem Strengthening/Scientific Research

'CellBRx Bioreactor' system-"Success Story"

Gaps and Need	T.⊕.ï	 Bioreactors is currently unavailable in the country Heavy dependence of industry on international manufacturers 		impact		
		 Leading to high temporal and monetary cost of Process development. 	8	CellBRx® System delivers 90% cost savings, 10X scalability, and		
	•	Naval single-use bioreactor technology platform for production of Vaccines, Biologics and Stem cell therapies and reduction of overall cost and time of process development		6X efficiency.		
				Fully compatible with the existing infrastructure of the Indian biopharmaceutical industry.		
Progress		Completely automated, first-of-its-kind, single use of CellBRx bioreactor successfully developed, validated and commercialized	>	Currently being leveraged for vaccine development by: Serum Institute of India, Reliance life Sciences and Biological E.		
NBM	*	Continuous funding support from Proof-of- Concept (POC) to industrial validation led to	*	Can be used for the production of vaccines, viral vectors, and other recombinant biologics.		
Support		accelerated Product development.		cell lines can be grown in the bioreactor system.		

Novel single-use bioreactor technology platform developed by OmniBRx Biotechnologies Pvt. Ltd.

Ecosystem Strengthening/Clinical Trial Networks

DBT's Resource of Indian Vaccine Epidemiology Network (DRIVEN)



Outcome

- 11 GCP compliant sites
- Population data including health parameters, household characteristics and other environment factors mapped
- Urban, Semi urban, Rural and Tribal population
- Access to more than 900,000 healthy polulation
- E-Data Management: Paperless data collection methodology - SOMAARTH
- Quality Management Systems
- COVID, Dengue & Chinkungunya seroepidemiology completed
- Acute Febrile Illness study across 10 sites in India including North East.

Clinical Trial Network of community based Demographic Development & Environmental Surveillance Sites (DDESS) established in India: DRIVEN Network. The network also consists of central laboratories and biorepository for clinical samples.







Clinical Trial Network of hospital-based sites for five areas: Oncology, Ophthalmology, Rheumatology and Diabetology.

Ecosystem Strengthening/Regional Technology Transfer Offices (RTTOs)

NBM supports establishment of RTTOs to enhance academia-industry inter-linkages, strengthen bio-cluster ecosystem and to provide increased opportunities for academia to translate knowledge







Impact and Outcomes in Financial Year-2022-2023









Training & Capacity Building with National and International Mentors in FY-2022-2023



Product Development/Vaccines

Vaccines



15 valent Pneumococcal Polysaccharide-CRM197 Protein Conjugate Vaccine: Proof of concept to Preclinical development was supported under the BIPP scheme of BIRAC. Clinical Development is supported under the National Biopharma Mission, BIRAC, DBT. Post review of Phase III (3+0) clinical study, DCGI has granted market authorization for the vaccine.



Pneuteger 15: 15 valent Pneumococcal Polysaccharide-CRM197 Protein Conjugate Vaccine developed by Tergene Biotech Pvt Ltd.



Product Development/Biotherapeutics

Biotherapeutics

Biosimilar Liraglutide for Type-2 Diabetes-"Success Story"



Levim Biotech Ltd has developed the biosimilar of Liraglutide injection after going through detailed physicochemical analytical characterization, preclinical studies, Phase-1 pharmacokinetics and Phase-3 efficacy & safety studies.



Liraglutide developed by Levim Biotech Ltd





Product Development/Medical Devices and Diagnostics Medical Devices and Diagnostics

MRI scanner by Voxelgrids Innovations Pvt. Ltd.-"Success Story"



First indigenously developed Magnetic Resonance Imaging (MRI) Scanner developed by Voxelgrids Innovations Pvt Ltd. This is an cost-effective, affordable, ultra-fast, high-field (1.5 Tesla) scanner.



Magnetic Resonance Imaging (MRI) Scanner developed by Voxelgrids Innovations Pvt Ltd



New Requests for Proposals

1. Request for Proposal: The Indo-US Clinical Research Ethics Fellowship was announced on 01st July 2022.

The Indo-US Clinical Research Ethics Fellowship Program is jointly conceptualized by Department of Bioethics, National Institutes of Health (NIH) and Department of Biotechnology, Gol. The program has been designed to create leaders in the field of bioethics with the aim to create capacity in the area of clinical research ethics

RFP was published on 01st July 2022 and remained opened till October 2022. 07 applications were received and evaluated by the Evaluation Committee for Indo-US Clinical Research Ethics Fellowship Program. After 2 rounds of evaluation by the Committee, none of the applications were found suitable for the fellowship. The Committee recommended to republish the call with few revisions in eligibility criteria in revised RFP.

2. Two requests for proposals (RFPs) on Antimicrobial Resistance were announced on 10th March 2023.

RFP1- Call for supporting development of diagnostics to detect Antimicrobial Resistant pathogens.

RFP2-Development of candidate therapeutics, or any other novel approaches, and counter measures to combatAMR.

iConnect Event

iConnect Event June 2022: DBT-BIRAC's Panel discussion-Indigenous Vaccine Development for Covid-19 pandemic

Department of Biotechnology (DBT) along with Council of Scientific and Industrial Research (CSIR), Department of Science and Technology (DST), and Ministry of Earth Science (MoES) organized i-Connect (industry connect events) to celebrate Azadi Ka Amrut Mahotsav (AKAM). "Industry Connect 2022": Industry and Academia Synergy. The event was focused on the importance of innovation & technology for the progress of the country and for the greater industry-academia partnerships. During the Industry Connect 2022, NBM, BIRAC held 'DBT-BIRAC's Panel discussion-Indigenous Vaccine Development for Covid-19 pandemic' on 21st June 2022. The panel discussion will be a platform for scientists and researchers in the field to discuss Strategies and Novel approaches to enable the development of a pan-coronavirus vaccine. Representatives from CDSCO, Academia, Industry and Global organizations like BMGF, WHO-SEARO participated.











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, 1st Biotech Startup Expo, 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
 - ▹ FIRSTHub
 - > Regulatory Information Facilitation Cell



Outreach Activities/initiatives

I Organization of Mega Biotech Event-Global Bio-India 2019 & Global Bio-India 2021 | Showcasing of Innovation Technologies at National & International Levels | Global Ecosystem Conect-Bio-connect Offices | BIRAC's success stories, Fortnight features etc. | Lab to Market Publications | Regular Assessment of BIRAC's Impact | CSR Funds Initiative | Biotech Showcase Portal | Biotech Angel Network

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 (T-Propellors and M-Zones) etc.





Major activities of Make in India Cell during 2022-23:

• 1st Biotech Startup Expo 2022

To showcase the strength of Biotech Startup Ecosystem, first ever, a mega national event called Biotech Startup Expo 2022 was organized by BIRAC and DBT from 9-10th 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 witnessed a footfall of 5000+ biotech stakeholders. The theme for the event was "Biotech Start-up Innovations: Towards AtmaNirbhar Bharat".

Hon'ble Minister Dr Jitendra Singh released two publications: 75 Biotech products developed during the 75 years of independence and Compendium of 75 Women Biotech Entrepreneurs. He also talked about how India has moved from women-specific to women-led projects.



Startup Expo Inauguration by Hon'ble Prime Minister

• Startup Conclave @IISF 2022

BIRAC organized a mega expo- Startup Conclave in Bhopal, Madhya Pradesh, as part of the 8th Edition of India International Science Festival (IISF), organized by Ministry of Science and Technology and the Ministry of Earth Science of Government of India in association with Vijnana Bharati from 21–24th January 2023. The Conclave was inaugurated by Dr. Jitendra Singh, Hon'ble Minister of State, Ministry of Science and Technology and Ministry of Earth Sciences (Independent Charge) & Minister of State for PMO, Personnel, Public Grievances and Pensions, Department of Atomic Energy and Department of Space; Shri Om Prakash Sakhlecha, Hon'ble Minister of S & T, Madhya Pradesh; Prof. Ajay Kumar Sood, Principal Scientific Adviser to the Government of India and Dr. Rajesh S. Gokhale, Secretary DBT & Chairman BIRAC.

The Conclave witnessed exhibits of more than 225 startups and enablers including incubators, Government agencies such as Startup India, Department of Science & Technology (DST), Ministry of Education Innovation Cell (MIC) and others.

11 innovative products were launched by the Hon'ble Ministers Dr. Jitendra Singh and Shri Om Prakash Sakhlecha, during the IISF-2022.

Important Publications such as Startup Compendium and BioNEST Compendium were also released by the Dignitaries including Hon'ble Ministers, PSA to Gol and Secretary, DBT.



Highlights of the event

- Startup Compendium and Bioincubation Centres Compendium were released by the Hon'ble Ministers, PSA to Gol and Secretary, DBT.
- 11 innovative products by startups were launched by the Hon'ble Ministers Dr. Jitendra Singh and Shri Om Prakash Sakhlecha.
- 14 BIRAC supported startups shared their inspirational entrepreneurial journey during Startup showcase session



Glimpse of IISF





• Launch of IBER 2022

This India Bioeconomy Report (IBER) is a national referral document that has been the guiding force for a host of national policies, regulations, and directives set out to reach ambitious target of \$150 billion BioEconomy by 2025. The IBER 2022 was launched by Dr Jitendra Singh Hon'ble Minister Union Minister of State (Independent Charge) Science & Technology; Minister of State (Independent Charge) Earth Sciences; MoS PMO, Personnel, Public Grievances, Pensions, Atomic Energy and Space, in the presence of Secretary, DBT.

The Indian BioEconomy for 2021 is estimated at \$80.12 billion. The BioEconomy registered 14% growth over 2020. Indian BioEconomy is continued to nearly account for 2.6 percent share of India's GDP in 2021. India's BioEconomy continued to perform well during the pandemic years as the BioPharma segment responded to the vaccine and testing needs in India.



AcE Fund Expansion

The significance of Fund of Funds-AcE initiative has been appreciated. It has successfully been able to nucleate Venture Funds mobilization into biotech startup ecosystem. A small corpus of Rs. 114.5 Cr deployed through 10 daughter funds has seen more than INR 900 Cr private funds investment into Biotech Startups and SMEs. Encouraged by this initiative, expansion and continuation of AcE fund is being considered. AcE Fund 2.0 with Rs. 500 Cr corpus allocation has been proposed to meet the requirements of growing biotech start up ecosystem with onboarding of additional daughter funds.





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 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, Niti Aayog, Public and Private Stakeholders, enablers. for synergistic implementation of Startup India Initiative and regularly reports to the Department of Promotion of Industry and Internal Trade (DPIIT) and DBT.



BIRAC Nurturing & Strengthening Biotech Innovation and Enterprises

Corporate Social Responsibility (CSR) Funds

BIRAC can receive and deploy Corporate Social Responsibility (CSR) Funds for the promotion and growth of Biotech Innovation Ecosystem. BIRAC received CSR contribution from Stryker Corporation in FY 2021-22 and again in FY 2022-23 to support digital health innovations under the BIRAC Amrit Grand Challenge-"जनCARE" 'Reimagining the Healthcare Delivery -Touching a billion lives' programme during FY 22-23.

Additional CSR opportunities to support biotech startups/innovations in are also being pursued.



Impacting Social Innovation Through CSR



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 startups and providing a continuous platform to interface with investors.

BIRAC and TiE have jointly institutionalized "BIRAC-TIE WINER (Women in Entrepreneurial Research) Fellowship"-a dedicated award to recognize successful women entrepreneurs in the Biotech sector. Under this national award programme, 15 women entrepreneurs working on innovative ideas with societal impact are awarded Rs. 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 Rs. 25 lakhs each to 3 final winners. So far, 60 awardees have been felicitated through 4 successful editions of WINER Award.

During FY 2022-23, winners of 4th edition of BIRAC TiE WINER Fellowship were felicitated on BIRAC's 11th Foundation Day in the presence of Prof. Ajay Kumar Sood, Principal Scientific Advisor to Govt. of India.

In 2022-23, BIRAC also hosted a leadership session on "*India's Biotech Ecosystem: Exemplar Deep-tech Solutions in Lifesciences*" during TiE Delhi's annual flagship event, TiEcon 2022.



TiE WInERs







TieCon

BIRAC-FISE (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. This unique program has successfully got concluded in FY 2022-23. A publication i2M (idea to Market) by Vivify media has also come out covering these assistive technologies.



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





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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.

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 15 start-ups are from 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 Rs. 5 lakh award and the complementary innovations Rs. 2 lakh award each. Field validation studies for 12 awardees have been completed across 11 states successfully.



Speakers addressing the audience at the Launch of जनCARE Innovation Challenge



Launch of जनCARE Innovation Challenge at MyGov portal



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Amrit Grand Challenge-जनCARE-Reimagining the Healthcare Delivery -Touching a billion lives

DBT/BIRAC, MeitY, and NASSCOM, in collaboration with Grand Challenges India (GCI) and several other partners, launched the Grand Innovation challenge program "Amrit Grand Challenge-जनCARE" (AGCJ) on 26th Jan 2022. IKP Knowledge Park BioNEST partner has been identified as the Implementation Partner.

The program envisioned to identify Digital Healthtech Innovations in Telemedicine, Digital Health, mHealth with Big Data, AI ML, blockchain and other technologies from Start-ups/Individuals/Companies for strengthening the Healthcare ecosystem in India, importantly in tier-2, 3 cities and rural settings. The challenge also focuses on affordability, accessibility and quality of services making the innovations more accessible in the primary healthcare sector, emphasizing the program's motto "Reimagining Healthcare Delivery-Touching a Billion Lives."

90 solutions were identified under the following categories:

- 1. Stage-1 (Early-Ideation and Testing stage): 75 awardees were selected to receive Rs. 10 Lakhs each. CSR funds were utilized to facilitate some of these awardees.
- 2. Stage-2 (Pre-commercialization-Late-Pivotal validation studies and field testing): 13 awardees were selected to receive Rs. 20 Lakhs each
- 3. Stage-3 (Advanced-Multi-centric Product Deployment stage): 2 awardees were selected to receive Rs. 50 Lakhs each

Funding partners for the program include BIRAC/DBT, GCI, India Health Fund, iHub Anubhuti Foundation-IIIT-D, Stryker, SIIC-IIT Kanpur, and AIC-CCMB. Awardees would also be provided an opportunity for connection with state and central government programs, field validation of their products, and contact relationship with corporates, investors and sector specific subject mentors.



Amrit Grand Challenge-जनCARE Partners




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 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.

Top 2 final winners of the program were selected after the user acceptance field trials of the products developed. These winners received Rs. 50 lakhs for commercializing their products and further mentorship support from Social Alpha.



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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 finalist was awarded with a grant prize of Rs. 10 Lakhs each for product development, designing & fabrication, selection of top 2 winners were selected on the basis of user acceptance trials.

DBT- BIRAC Mission Program on Anti-Microbial Resistance

The Department of Biotechnology, Government of India has announced this Joint call with the Biotechnology Industry Research Assistance Council (BIRAC) on antimicrobial resistance (AMR). This joint mission program 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 be soon evaluated for completion in 2023.

International Partnership

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 by automation of bacterial DNA extraction process and real-time voltametric readout during the isothermal amplification process. The projects have been evaluated for their completion work recently. Usense developed by Module Innovations has developed an 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.





Success Stories

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

Awards and Recognitions (FY 2022-23)

	Devices and Diagnostics				
•	Awarded Best Product and Hottest Startup award at the annual innovation summit of HYSEA at Hyderabad in 2020.	monitra health			
•	Results of the upBeat v/s Holter Study accepted at the Eurpoean Heart Rhythm Association (2022) held in Copanhagen, Denmark.				
•	Placed amongst the top 3 finalists of Anjani Mashelkar Inclusive Innovation Award 2020 and won the same in year 2022.	SAL CIT			
•	Semifinalists in MIT Solve's 2022 Global Challenge.				
•	Salcit Technologies Private Limited Received the Top Innovator award at the Innovation Arena in the PHIC (Public Health Innovations Conclave) 2021 at HITEX Exhibition Center.				
•	Selected by BIRAC for the product launch by honourable Prime Minister Narendra Modi as part of the "75 Products during 75th Year of Independence" inaugural event.				
•	Finalist at the 11thAegis Graham Bell Award 2020 in the Category of 'COMBAT COVID-19 WITH ARTIFICIAL INTELLIGENCE'.				
Recipient of "Most Disruptive Technology of the Year Award" and "Dentrepreneur Award" from Indian Dental Association-2023.		Solutions Pvt. Ltd.			
First Indian company to receive commercial regulatory approval from Govt of India regulatory authorities for manufacture and sale of Magnetic Resonance Imaging scanner.		Voxelgrids Innovations Private Limited			





Lab Iconics LIMS has been awarded Best Innovative Technology for the year 2022 by "The Indian Society for Analytical Scientists" and Iaunched by Hon'ble Science & Technology Minister Dr. Jitendra Singh, during the events Biotech Start-up Expo 2022 and India International Science Festival inaugurated by Hon'ble Prime Minister Shri. Narendra Modi.	LAB ICONICS Lab Iconics Technologies LLP				
Savemom – successful adoption by the public body: Announced as the winner in the Maharashtra State Innovation Society Startup Week 2022 by Shri Devendra Fadnavis, Deputy Chief Minister, Maharashtra, and was also facilitated with INR 15 Lakhs to implement the project Savemom in Maharashtra.	Savemom Private Limited				
Biosir	nilars				
Successful grant of US patent for process innovation and European patent nearing allowance.	Leveraging Impactful Minds				
Vaccines					
 IDMA-APTAR Innovation of the Year Award- April 2022. Best Innovation award at IMAPAC, May 2022. Best Industrial Partnership-Zydus Lifesciences & PharmaJet for Needle Free Injection Technology, at IMAPAC, May 2022. All clinical trials were published in peer-reviewed international journals. CORBEVAX received EUA in India and is in the final approval stage for 	Zydus Lifesciences Pvt. Ltd. Dedicated To Life Biological E. Limited Celebrating Life Ewery Day.				
 100 million Doses were supplied to the Government of India for the vaccination campaign. 					
Energy and Environment (incl	uding secondary Agriculture)				
 KBCols Sciences closed its pre-series Around led by NABVENTURES and co-participated by Chiratae Ventures, Axilor Ventures, AWE Funds and Mr. Rahul Rathi. 	KBcols Sciences Private Limited				
 KBCols Sciences was one of the winners of the prestigious Global Change Awards 2023 					





conducted by H&M Foundation in Sweden (June 2023).

- KBCols Sciences won the Facility for Low Carbon Technology Development (FLCTD) Innovation Challenge 2022 conducted by UNIDO.
- KBCols Sciences was one of the winners of the National Startup Award 2022 conducted by Startup India & DIPP.
- Dr. Vaishali Kulkarni was awarded Asia's Top 10 Sustainability Superwomen Leaders award by CSR Singapore for her contribution and outstanding leadership.

Agriculture

ZENTRON

Zentron Labs Pvt. Ltd.

For the year 2022, Startup-India recognized Zentron Labs for its innovations in post-harvest technology and selected it as the best startup in the category – post-harvest.

Outcome of all BIRAC activities

Affordable Products and Technologies developed through Investment schemes

BIRAC has an inherent system of grading the projects into 7 theme areas for project monitoring and promoting innovation in that sector. The Healthcare sector has been categorized into 4 thematic areas namely, Drugs (including drug delivery), Biotherapeutics including Biosimilars and Regenerative Medicine, Vaccines, Devices and Diagnostics. The other theme areas for which BIRAC provides funding are Agriculture (including Aqua culture and Veterinary Sciences), Clean Energy & Environment (covering Secondary Agriculture) and Bioinformatics (including Artificial intelligence, Big Data Analysis, IoT's & software development).

BIRAC emphasizes that projects supported through its various funding schemes on conclusion yield the targeted outcome in the form of products, technology, IPR, etc. Towards this end, BIRAC screens proposals under various schemes for their Technological Readiness Level (TRL) on a scale of TRL 1 to TRL 9 and filters in those having the potential to reach higher TRLs through BIRAC support. Potential regulatory hurdles in the projects are already identified during the evaluation phase. Supported projects are regularly mentored and rigorously monitored. BIRAC assess the TRL progression of project through progress evaluation by Project Monitoring Committee (PMC) experts, either online or onsite, presentation of progress by project coordinators to the Technical Expert Committee (TEC) and online evaluation of milestone completion reports by the subject matter experts associated with a particular project.

There is always an effort on part of BIRAC to enable/assist the beneficiaries so that the product/process under development could be commercialized at the earliest. To this end, BIRAC has initiated a Product Commercialization Program Fund (PCP Fund) to address the challenges faced by innovators towards commercial launching of their product and market expansion. BIRAC also facilitates regulatory assistance through FIRST-HUB to accelerate the approval processes.

The initiatives undertaken by BIRAC have resulted in the successful completion of targeted milestones of many projects from different sectors, and the development of many early/late-stage technologies and affordable products. During the year 2022-23, 32 projects completed Early-stage validation (TRL-3 and above), and 48 projects (23: TRL-7; 6: TRL-8; 19: TRL-9) delivered products/technologies which are at late-stage validation, pre-commercial stage, market launched or commercialized.





Kibo XS offers a scanning and reading device for Trestle Labs Pvt. Ltd. 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 cost is INR 84,000/- and more than 500 devices have been sold so far across 22 states in India. Annie - A device which enables a user to self-learn Thinkerbell Thinkerbell Labs Pvt. Ltd. Labs Braille in a fun and gamified manner. It is a patentpending connecting device; allowing special educators to focus on multiple students at the same time, easy tracking of student's progress (analytics) and downloading of new content by seamlessly integrating with the ecosystem. • Developing countries- A smart class is planned to be established consisting of Annie devices, necessary infrastructure, relevant content (with localization), and dashboards for sighted stakeholders for a strength of 20 students. Cost of a smart class: INR 9 Lakh · Developed Countries- Onetime cost model with an annual recurring cost for unlimited access to content and the entire analytics suite. Cost: \$940 + \$150 (INR 65,000 one time + 10,000 /year recurring). More than 105 device sessions have been sold so far. **Tactopus Learning Solutions** • Tactopus Learning Solutions Pvt. Ltd. works on atactopus Pvt. Ltd. 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:

Products/Technologies ready to be launched/commercialized in 2022-23

Devices and Diagnostics









- 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 1,000 units have been sold so far.

XL Cinema is a mobile application (audio content delivery platform) which enables a visually impaired person to listen to audio description of a movie (content) in private using smartphone synchronised to the video playing in theatre or at home. This application also enables user to listen alternate audio track of a movie in the language of choice privately through headphone connected to the smartphone. For Visually Impaired it's free of cost.

ArmAble is an Interactive game-based, arms training rehabilitative device. The product is aimed towards assisting Physiotherapists in the neurorehabilitation of stroke victims and motor rehabilitation of victims with an upper motor deficit due to conditions such as Cerebral Palsy, Multiple Sclerosis, Traumatic Brain Injury, Fracture, Frozen shoulder, etc. The product costs around INR 5,00,000/- + Taxes. More than 12 units have been sold.

Ibex is an electric wheelchair designed for Indian Road conditions and can be customised for every patient. The product costs around INR 99,000/-Wheelchair. 13 Pieces have been sold so far.

INNOVISION Inceptor Technologies Pvt. Ltd. **Braille Me** INNOVISION Brajma Intelligent Systems Pvt. Ltd. BeAble Health Pvt. Ltd. indent Indent Designs Pvt. Ltd.





Stamurai is a speech therapy app for Stammering. The app has instructional videos to teach speech therapy exercises and tools to help to practice those exercises. The app also acts like a self-help group with P2P practice and support.

The product costs around \$40/year in developing countries and \$100/year in developed countries. 3000 units have been sold so far.

Flexmo - All Terrain, Self-Standing Crutches (Axillary and Elbow) which can be used on wet and uneven surfaces such as wet tiles, mud and snow without slipping.

The product costs around INR 4,499/-. 800 units have been sold so far.

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.

- Sensivision's REVIVE is the world's first device to offer Whole Body Cooling treatment along with Brain monitoring on the same device for Newborns impacted with this Birth Asphyxia complication called Hypoxic Ischemic Encephalopathy (HIE).
- REVIVE has completed all testing and regulatory certifications including Manufacturing License from CDSCO. Device has also completed 100 baby Clinical evaluation.

FLEXMO Flexmotiv Technologies Pvt. Ltd.

Stamurai Demosthenes Technologies Pvt. Ltd.

STAMURAI



Sohum Innovation labs sohum **India Private Limited**



SENSIVISION Health Technologies



Sensivision Health Technologies Pvt. Ltd





Biotechnology Industry Research Assistance Council



- upBeat® is redefining 24×7 continuous heart monitoring. Monitra's upBeat® has the most advanced adhesive band-aid like patches which makes remote monitoring easy for patients with unexplained palpitations & transient loss of consciousness.
- · No wires, slim profile, discreet, worn up to 3 days, can bathe as well.
- Logs symptoms, receives data from biosensor & relays to upBeat® data lake.
- · Holds vast amount of raw data in its native format, used for analysis.
- Analyzes data, personalizes alerts & reports, allows online access.

Aindra is an Artificial Intelligence driven company focused on creating Point-of-Care diagnostic solutions for fatal illnesses. The first of such products leveraging this computational pathology platform is CervASTRA, a point of care screening system for Cervical Cancer, that is quick, affordable and accessible to the low-income countries as well.





Energy and Environment (including secondary Agriculture)

Baijnath

Baijnath Pharmaceuticals has developed various products using catechin powder and have started commercialization of the same. So far, commercialization of catechin products has been initiated, (capsule-based formulations, pre-mixed syrup & cream).

Baijnath Pharmaceuticals Pvt. Ltd.







KBCols Sciences, a biotech studio fuelled by innovation, is at the forefront of producing sustainable natural colors from renewable biomass. Microbes which are omnipresent in nature are sourced by KBcols through their technology to get natural colors of choice. The final product (bio-colors free from microbes) is a universal drop in solution to dye majority kinds of fibres. KBCols is presently piloting the technology with leading apparel and luxury brands in Europe, US and South East Asia (Including India).

KBcols Sciences Private Limited



Veterinary Sciences and Aquaculture







Drugs NOVALEAD PHARMA Galnobax (to be rebranded in India as DiulcusTM) Novalead Pharma Pvt Ltd. is a topical gel product for the treatment of diabetic foot ulcers. Galnobax works with pleiotropic Diulcus mechanism and is a novel treatment option for healing diabetic foot ulcers. The product is licensed to Ipca Laboratories Limited for commercialization in India and is expected to be available in the Diulcus market in 2023. **Vaccines** COVID SURAKSHA provided funding to Biological E BE **Biological E Limited** which enabled development of fully indigenous **Biological E. Limited** COVID19 vaccine based on adjuvanted protein-sub unit platform during the pandemic. Phase I, II and multiple Phase III trials were conducted in India leading to Emergency Use Authorization between Dec'21 to June'22 for different age-groups and indications. Approximately 90 Million Doses of CORBEVAX have been administered in Pan-India vaccination campaign, mainly to 12-14 yr children. Tergene Biotech Pvt. Ltd. and · 15 valent Pneumococcal Polysaccharide -TERGENE Aurobindo Pharma Limited CRM197 Protein Conjugate Vaccine. Broader serotype coverage with inclusion of Serotypes 2 Pneuteger 15 and 12F making it robust for Indian Population. · Received market authorization approval from DCGI. Commercial manufacturing facility is ready to roll out production with a capacity of 30 Million doses. **Agriculture** There is an acute shortage of skilled labour to grade ZENTRON Zentron Labs Pvt. Ltd. fruits during harvest season. Traders prefer to pay a low price to a harvest lot that has multiple grades that are mixed. Co-incidentally, in markets uniformity in size and such properties is an indicator of quality. Our high-speed systems help FPO's and farmers earn more, and keep customers satisfied - hence they enjoy a greater say during negotiations.





Other Exemplary Products developed/under development through BIRAC Support that has completed late-stage validation

Biosimilars

- Liraglutide, first approved in 2010, has been among the first successful "GLP-1 RA" drugs to supersede use of insulin and other drugs for the treatment of Type-2 Diabetes. Liraglutide has also shown additional benefits of weight loss in cases of obesity & long-term cardiovascular protective benefits apart from glycemic control.
- Levim has developed the biosimilar of Liraglutide injection after going through detailed physicochemical analytical characterization, preclinical studies, Phase-1 pharmacokinetics and Phase-3 efficacy & safety studies.
- Primary endpoints successfully met in Phase-3 clinical trial with HbA1c reduction of 1.09% in 24weeks of treatment. Reduction in body weight (-1.97 kg), and glycemic levels (fasting glucose -16 mg/dL and postprandial: -29 mg/dL) were also seen. Non-inferiority to innovator liraglutide demonstrated.

Aflibercept is a vascular endothelial growth factor inhibitor. It is indicated for the treatment of neovascular (wet) age-related macular degeneration, macular oedema following retinal vein occlusion, diabetic macular oedema, and diabetic retinopathy in patients with diabetic macular oedema. Phase III trials have been initiated. Levim Biotech



Devices and Diagnostics

Lab Iconics LIMS (Laboratory Information Management System), Electronic Lab Notebook (ELN) and Automated Data Backup System (ADBS) are designed to improve lab productivity and efficiency, enhancing effectiveness of biotechnology and pharmaceutical laboratory operations, maintaining a digital trail of samples, experiments, lab workflow and instruments and secure the data throughout the lifecycle.

 The dental implants developed under the brand name "Refirm", by Intessence Solutions Pvt. Ltd. are made to provide twin benefits of "Easy placement" and "Good stability". Apart from this the Implant system incorporates proven







advances in the field such as "Conical connection", "Platform switch", "Crestal Microthreads", "Abrasive blasted and etched surface". The prosthetic connections are provided on a single platform making it convenient for dentists to choose from a variety of prosthetic options. • The product range includes implants, cover screw, healing abutment, abutment screw, abutments, multi-units, castable abutments, impression coping and analogs, coping screws. Surgical kit and instruments comprising of pilot drills, taper form drills, countersink drills, engine and hand drivers, fixture direction pin, torque wrench, depth gages, paralleling pins, drill extender, stoppers. HaemurEx a clinical chemistry analyser for a low Arogyam Medisoft Solution Pvt Ltd resource set up for examination of 35 parameters of blood and urine. The device is connected to a remote health monitoring platform "Arogyam Health", interfaced with digital stethoscope and digital ECG. The product was field validated at four primary health centres in Changlang district of Arunachal Pradesh (Bordumsa, Miao, Yatdam and Diyun) where 1750+ patients got served by the system. • PathFlow Dx: The platform enables cancer pathologists with a seamless pathology workflow Inventigen Technologies Pvt. Ltd. platform combined with automated analytics tools for specific biomarkers. The analytical tools analyse images of cancer biopsy slides and assist the cancer pathologist in their reporting process, and hence reducing the reporting process time by 30-40% and improving the accuracy by 12-15% around tumor grading, and cell quantifications. The innovation was field validated at in CHCs, PHC's and district hospital of Andhra Pradesh. The system is available at INR 18,00,000 (Rupees Eighteen Lakhs) for yearly subscription per user. System and method for mobile healthcare kiosk to UVÎTEL Yuvitel Technologies Private Limited bridge out the health service barriers for patients in the rural areas by bringing the diagnosis and treatment to the doorstep by the top specialist doctors in the country, thus removing the cost of travel, stay and improving the efficiency.



EPICare: Comprehensive Remote Patient Management Platform. Focussing Step down NICU. The product was field validated at IOG Hospital, Chennai.

Bioscan Research introduces 'Cerebo,' an innovative, non-invasive device utilizing near infrared spectroscopy to swiftly detect brain hemorrhages within a minute. With patented probe systems and an automated algorithm, Cerebo ensures precise detection of small intracranial bleeds without manual intervention, making it userfriendly even with minimal operator training. Its compact design, IoT integration, and remote monitoring capabilities redefine point-of-care detection for intracranial bleeding among traumatic brain injury patients.

BISSCAN **Bioscan Research** RESEARCH FERED

Helyxon Healthcare Solutions Pvt Ltd

Vaccines

- Zydus Lifesciences Limited has developed the world's first human plasmid DNA Vaccine for COVID-19. This truly indigenous vaccine demonstrated the innovation and "Make in India" driven approach of Zydus.
- ZyCoV-D vaccine has numerous unique advantages including better safety, stimulation of both humoral and cellar immune responses, superior stability profile and ease of developing vaccine against evolving variants. Additionally, the vaccine is administered with a needle-free injector device called Pharmajet Tropis, which eliminates needle stick injuries, and is very helpful in patients with trypanophobia and contributes significantly to the reduction of sharp waste management.













Energy and Environment (including secondary Agriculture)

Technology for manufacturing biodegradable and eco-friendly single-use cutleries like straws, lids, take-away container boxes, cups and spoons made from locally available agricultural waste. Prototypes developed for Washing process, holes making/roughening process, improvised rolling machines, glue application machine and sterilization with Ozone. These prototypes are being tested in the production environment for the past few months.

Openwater has set up 10KL water treatment plant at IISc Bangalore. Another 25KL plant has been put up in collaboration with Mavallipura Grama Panchayath. The units are in operation for more than 200 days. They are able to recover >90% water and the output water is as per CPCB norms. For treatment of 1 KL wastewater, the system uses only 1 unit of electricity. The sludge being obtained can be used as fertilizer or vermicompost. The company is now in a process of handing over the technology to the municipality.

Solar Powered Smart Cooking System. The Product can be operated from direct solar energy without consumption of electric supply from the grid. The product costs around INR 15,000 to 25,000. 3 units have been sold so far.

Solar Steamer. The innovation is a direct generation of steam in a solar line concentrator with unique receiver and plumbing arrangement. The innovation uses a single axis polar tracking and has gravity separation for steam and water. The cost of the product is Rs. 3.5 lakh for a 20 sqm unit.Yet to be launched in market.

Mzon Smart LPG Stove. A thermal efficient LPG stove to prevent heat loss.. The Technology helps in reducing the gas consumption rate efficiency of conventional LPG stoveand minimizes the rise in temperature of the kitchen room. The product costs around 1400INR to 1600 INR. Yet to be launched in market.





Chandak Innovations LLP





Mzon Craft Corporation Pvt. Ltd







Energy-Efficient and Environment-Friendly Biogas cookstove with Porous Radiant Burner and Porous Free Flame Burner (PFFB) suitable for all kinds of biogas digesters. The developed Energy-efficient and Environment-friendly Biogas cookstoves provide a fuel-saving of ~25% in submerged combustion mode (PRB) and ~15% (PFFB) in free flame mode.



Analysis of BIRAC Support

Healthcare

1.1 Drugs (Including Drug delivery)

BIRAC supports innovative projects under 7 thematic areas with biotechnology components and Drugs including Drug delivery is one among them. Drug development is one of the challenging fields with low success rates, and is resource resource-intensive & time-consuming process therefore BIRAC continuously trying to fulfil the gaps to increase the investments in the development of new drugs for diseases and unmet needs that have little, or no treatment options for patients. This area includes supporting Drug discovery projects that involve small molecule drug discovery, New chemical entities, and repurposing of drugs and drug screening models whereas Drug delivery involves new methods/technologies to increase the bioavailability or change the route of administration.

BIRAC supports this area in regular programs right from the generation of proof of principle in BIG, establishing proof of concept and early validation in SBIRI and late-stage validation such as scale-up studies and clinical trial projects in BIPP. The proposals received and supported under this area are mostly to generate Proof of concept and very less proposals for clinical trial studies. Drug discovery companies are reluctant to contribute with their own funds for high-risk products which will take time and may fail at a later stage. Therefore, the role of BIRAC becomes important here as by supporting them in a public-private partnership mode provides them some support to carry on with the innovative projects. Most of the projects received in this area are trying to find the drugs for cardiovascular diseases, infectious diseases, diabetes, and kidney-related complications which have a high burden globally. BIRAC identifies the areas of unmet need and puts special efforts to support the projects in complete grant mode for special areas that need complete support. AMR, new drug development for specific disorders, and preclinical model development are some of those areas BIRAC has ventured into in the past few years.

BIRAC has identified rare diseases as an important vertical and looks forward for the projects under this area in various challenge calls. This area needs much more support from the government in the form of grant programs as risks are high and end users are less therefore support will be provided to encourage the companies to venture into this area in the coming time. To date, BIRAC has supported projects for developing drugs for Duchenne muscular dystrophy (DMD), Nieman pick disorder, and retinitis pigmentosa under rare disease areas. Drug screening models have high importance when looking at models that minimize the usage of animal studies and can be effectively used to evaluate the drug effects for a particular stage of disease. In this direction repurposed drugs as well as drug screening In-vitro and In-vivo models were critical measures to fight the pandemic and efforts have been made under "Atmanirbhar Bharat- Strategies for testing the existing safe drugs against COVID-19 and projects have been supported to generate organoid, 2D interface models for SARS-CoV 2 and also for various important pathologies i.e. NASH.



Among the drug discovery projects support is being provided from preclinical to clinical stage Phase I for a topical ointment for Vitiligo and project is ready to enter Phase II studies. Some of the important late-stage validation/ clinical trial projects are, the drug products undergone for Clinical trial projects have supported research for diseases such as Community-Acquired Bacterial Pneumonia CABP in Adults, Duchenne muscular dystrophy, Breast Cancer, solid tumors. Diabetic foot ulcer and inflammatory pain and TB.

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. Among few successful projects in drug delivery repurposing of small molecules in the form of a topical formulation Galanobax has been developed and supported right from the preclinical stage and clinical trials and now the gel has got marketing approval in India from CDSCO. A few platform technologies have successfully been commercialized by BIRAC support (silk fibroin-based wound healing products, strip-based drug delivery an alternative to tablets and capsules for low dose API - nutraceuticals/pharmaceuticals with POC of Vitamin D) are being supported under the Product Commercialization Program for scaleup by BIRAC.

BIRAC has supported nearly 257 proposals to date in Drugs including drug delivery (BIPP-42, SBIRI77, BIG-104, PACE-34) theme area. To date, out of the total investment of 287 crores under various Grant programs i.e., PACE, BIG, SBIRI, BIPP, and DBT-BIRAC joint calls (AMR Mission) BIRAC has contributed to 186 crores. Nearly 42 IP have been generated till date among the projects supported in this area. Drug development is a challenging area where not much success has been observed during the last few years. Further, it takes enormous funds. Along with the funding for the drug discovery projects, handholding for the development of important molecules is important for taking the molecules forward.



PPP Investment portfolio for BIPP and SBIRI in the sector to date













1.1.1. Preclinical Model Development for Drug Discovery

BIRAC is constantly putting its effort to fulfil the gaps in the area of drug discovery where one of the important identified gaps is failure of treatment therapies from preclinical to humans due to deficiency of robust preclinical models. In order to fulfil this gap a new focused call has been announced in March 2023. This call on "Establishment of preclinical models for drug Discovery" will focus on developing robust models which could offer innovative insights into pathophysiology of unmet prioritized diseases relevant in the Indian context. India. The successful models can then be made available as a platform to researchers and industries to test their molecules for In-vitro and In-vivo efficacy studies. The platform will enable the Indian researchers to utilize the platform to fulfil this translational gap between the preclinical and clinical studies.

The call was closed on 4th May 2023 and is undergoing the first stage of evaluation.

1.2 Biosimilars and Regenerative Medicine

Biosimilars have provided more cost-effective alternatives to manage serious health conditions that were earlier managed with costly biologics. There is a very large emerging opportunity for growth and Biosimilars will continue to be a leading-edge growth driver which is an important segment for India. Biotherapeutics market is projected to reach \$479.7 billion by 2024 at a compound annual growth rate (CAGR) of 10.9%. The biosimilar market is expected to reach \$42.30 billion by 2026 at a CAGR of 22%. Biotherapeutics are considerably more expensive than pharmaceuticals (typically 10-15X). Though the Indian industry has launched about 127 Biosimilars, the access to the drugs at an affordable price to ensure that a maximum number of people are provided with the best available care is still a challenge.

Regenerative medicine therapies including Cell & gene therapies hold great promise for treating rare diseases such as Retinitis pigmentosa, β -thalassemia, rare neurodegenerative disorders, etc. with high unmet medical needs. By 2027, the regenerative medicine market is forecast to be worth over \$22 billion. This will be led by cell therapies (\$10.8 billion), followed by gene-modified cell therapies (\$6.5 billion)

BIRAC has supported a total of 140 projects in Biotherapeutics (BIPP-28, SBIRI-37, BIG-29, PACE-12, NBM-33, and 1 in SPARSH); Among which the majority of them are through Industries and Startups participation; Academia's participation under this specific theme is way behind. The Biosimilars e.g. Insulin Glargine, Liraglutide, Lispro, Aflibercept, Herceptin, Ranibizumab, Ramucirumab, Ustekinumab etc. are supported for various developmental stages under NBM The candidates which have now reached clinical trial stage include Liraglutide and Insulin Glargine for Type 2 Diabetes and Type 1 and 2 Diabetes respectively, Aflibercept for wet AMD, and Ustekinumab for Psoriasis. Nearly 16 IPs were generated from the proposals that were supported. A total of 9 shared facilities have been funded under NBM with a total fund commitment of Rs 310.26 crores which have catered to 45 different clients till date. In order to further boost the biosimilar projects this year, NBM announced a follow-up funding call to support biotherapeutics and facilities associated with grantees who have achieved a certain successful stage in their earlier supported projects.

The gene and cell therapy are at a nascent stage and BIRAC has been putting in efforts and continuously announcing calls for proposals. These efforts have helped to a larger extent. Clinical trials are being supported for CD19 CAR-T Cell therapy starting from the construction of Plasmid & vector development, GMP manufacturing facility for clinical trial material generation, and human clinical trials. To solve the bottleneck of equipped clinical trial sites in the country, National Biopharma Mission (NBM) has helped in the establishment of clinical trial networks (CTN) and strengthened clinical trial capacity in the country.

Few successful outcomes under this theme include:

- Affigenix Biosolutions Pvt. Ltd.- Trypsin resistant PAN reactive trypsin antibodies & development of ready to use engineered cell lines for in vitro Insulin receptor phosphorylation bioassay to monitor Insulin drug potency
- Bhamis Research Laboratory Pvt. Ltd.- Purified Trastuzumab, directly from cell culture media using crystallization technology
- Oncosimis Biotech Pvt Ltd.- Establishment of AcceT technology for higher yield production of biologic drugs in CHO cells
- Plabeltech Pvt. Ltd.- Protein Labeling Technologies







Projects supported in biologics are maximum followed by drug discovery and Drug delivery till date

Maximum Proposals supported for PoC generation (till date)



Disease-wise projection of funded projects till date

10

20

30

40

50

60

0

1.3 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,

Others (Neuro/CVD/Auto-immune etc.)

- Scale-up facilities
- Policy driven decisions
- Government prioritization
- Investment and multi-sectoral partnerships.

Global trend in the vaccine development indicated that industries are developing vaccines mostly for the viral diseases followed by bacterial, cancer and protozoan diseases. BIRAC followed the same trend and supported 47 projects (excluding vaccines for Covid-19) for vaccine development through its various schemes.





Indication of vaccine projects supported by BIRAC to date

Out of the 47 supported vaccine projects, three Vaccines and 3 technologies commercialized. Seven products are ready for commercialization and many are in Pipeline. Further in rapid response to Covid-19 problem, BIRAC launched focused programs for vaccine development right from the early days of the Covid-19 pandemic through Covid Consortium and supported 14 projects for vaccine development and their related activities. Out of 14 projects supported under the covid consortium, 08 were for the development of vaccines using different platforms and 6 were for the assays and different activities required for the development of Covid vaccine. Further to bring affordable and accessible COVID-19 Vaccine, at the earliest, DBT launched a National Mission i.e., Mission Covid Suraksha with BIRAC as an Implementing agency. The goal of the Mission is to accelerate the development of at least 5-6 COVID-19 vaccine candidates and ensure that some of these are brought closer to licensure and introduction in the market for consideration of regulatory authorities and for introduction in public health systems. With the help of MCS support 4 vaccines with different platform technologies got EUA from CDSCO.

1.4 Devices and Diagnostics

By the end of 2023, the global market for medical devices is anticipated to reach \$600 billion. Global Data predicts that the Indian medical device industry would expand at a compound annual growth rate (CAGR) of 7.9% through 2030. It also reveals that India, a country that depends significantly on imports, was one of the top three markets in the Asia-Pacific in 2021–2022 (Source: Global data).

The government is promoting the MedTech sector through a number of key programmes. The Medical Devices Policy, 2023 is a recent development that will support the medical device manufacturing sector and create an environment that enables the production of devices in India. Additionally, this would entice foreign investment via PPP and private channels. Additionally, the Production Linked Incentive (PLI) Scheme was established to incentivize the manufacturers. A scheme to facilitate the funding of projects for shared facilities in medical device parks was also announced in 2020. These industrial parks are anticipated to grow into major centers for the production of medical equipment, complete with testing, training, and research capabilities. Additionally, the National Pharmaceutical Pricing Authority (NPPA) has increased its pricing surveillance of crucial medical devices and planning to take actions to limit retail price margins.

BIRAC has already invested more than INR 650 Crore in the country's MedTech sector, leading to the commercialization of 120+ items and 202+ IP/Patents. In addition to providing financial help, BIRAC is bolstering India's infrastructure by connecting a network of more than 75 BioNEST incubators. In addition, the National Biopharma Mission is establishing prototyping/tinkering labs, non-clinical testing labs, ISO 13485 compliance facilities, diagnostic assembly lines, EMI/EMC, and electrical safety testing centers. These facilities are available to start-ups and innovators funded by BIRAC at reduced costs.





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According to the BIRAC's medtech sector's portfolio, the neurology indication has attracted the most investments. SaMDs and virtual reality-based systems are becoming popular, and reflects the transition of Indian healthcare system towards digitisation. Wearable technology, genomic medicine, and medical robotics will see significant breakthroughs in the near future. We have seen a lot of traction from start-ups in these fields at BIRAC. The analysis also highlighted that many projects are completed as compared to the ongoing projects reflecting the ecosystem maturity.

Some of the recommendations to promote the sector include, development of innovative solutions targeting specific needs of remote parts of India. High Industry Investments in PPP mode (Public private partnership) to translate research to economic benefits. Global harmonization of regulatory standards and implementation of quality standards to promote access to world class devices.

Agriculture (including Veterinary and Aquaculture)

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 the global agriculture sector. India is largely termed as an Agrarian economy and agriculture is one of the most significant sectors of the country with a vital role to play in its growth. It is a market-driven industry that engages a large ratio of the population of the country. In recent years Agri ecosystem has evolved from its established role to a modern industry with the addition of evolving businesses, revenue models, and start-ups in the agriculture sector. The start-ups are bringing innovations to the farming ecosystem; creating channels that allow farmers to choose markets and sell their produce at better prices.

In sync with the global trends and national objectives, BIRAC has been supporting projects in agriculture that are technology-led in research areas like Marker Assisted Selection, Transgenics and genome editing, Biocontrol, Tissue culture, Diagnostics Nanobiotechnology, UV/Drones, (AI/Machine Learning/IoT/Sensors/robotics/remote sensing and others like (Smart Warehouses, Cold Storages, Silk Worm related, Mechatronics, Post-Harvest,



Tea Related, grain storage). Some of the key technologies supported under the area are: GMO Identification Kit, Mating disruption products, Mustard variety Double low having low Erucic acid and Low Glucosinolate content, Seaweed for the development of a biological product, Commercial orchid breeding and production of clones of elite hybrids, Decision Support System (DSS) for providing information over farms in real-time and Software and hardware for preventive protection against pests.



Veterinary Sciences and Aquaculture

India is the largest animal husbandry in the world with the largest livestock population to support the livelihoods of more than 2/3rd of the rural population. Sustainable animal production and health are important as healthy animals are closely related to healthy people and a healthy environment. To meet the growing demand for animal products and exploit the sector maximally, concerted efforts are needed. Major Challenges with Livestock development are the burden of animal diseases, Fertility issues with imported breeding stock, accommodating a large number of nonproductive animals at the cost of productive animals, and Scarcity of quality feed and fodder.

BIRAC continues its support to enhance livestock production and productivity through biotechnology-based interventions to encourage more proposals related to animal reproduction; and increase per-animal productivity, animal nutrition, and animal health. BIRAC has been supporting applied research in frontier areas of livestock and animal biotechnology from its inception.

The major emphasis of the programs is on livestock production & productivity and improving animal health through different biotechnological interventions. This shall ensure quantitative and qualitative improvement in livestock production systems and capacity building of all stakeholders.

Vaccines and treatment for Parvovirus infections in canines, vaccines for Paratuberculosis, and vaccines for MAREK diseases of poultry are some of the important products from this sector. With the help of BIRAC support diagnostics for various diseases of veterinary have been developed and are already commercialized.







Research Areas Supported by BIRAC Under Veterinary Sciences Till date

Aquaculture and Marine biotechnology are important sectors in India with a coastline of 7,517 km and widespread freshwater resources, it employs millions of people and contributes to the food security of the country. India is the second largest producer of fish in the world. Global Fish food consumption is a major source of protein and other nutrients. The growing population demands the immediate expansion of the fisheries sector in a sustainable manner. The fisheries sector is currently facing a number of challenges such as overexploitation of available resources, germplasm degradation, climate change, and diseases. Therefore, it is important to find solutions for these challenges.

BIRAC identified Aquaculture and Marine Biotechnology as thrust areas to support R&D towards the development of useful products and processes from fresh water and marine resources. Recently challenge call on the National Mission for Protein Supplements focussing on Aquaculture Development through an Integrated approach and Aquaponics through Biotechnology interventions was also announced.

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

Energy and Environment (including secondary Agriculture)

Clean energy and environment area at BIRAC involves using biotechnological means to develop cost-effective and sustainable processes for energy and industrial chemicals. The area also includes Secondary Agriculture sector which focuses on adding value to primary agriculture produce by increasing the value of the agricultural 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 the stakeholders in the value chain in the form of single vision strategy. 08 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 post-harvest value addition of millets.

Till date, 310 projects have been supported in this theme area with major segments of specialty chemicals, biofuels, industrial enzymes, waste to value, nutraceuticals, etc. 200 companies/start-ups, 60 entrepreneurs and 52 academic institutes and have resulted in 54 technologies/products/PoC and 64 IPs. The projects that have been supported till date involves the use of biotechnological platforms and can be categorized in several sub-areas such as bioenergy, speciality chemicals, industrial enzymes, industrial processes, bioremediation, secondary agriculture, infrastructure support and many other fine chemicals as shown below.



Area wise project distribution





Technologies that could reach late-stage validation:

- Evlogia Eco Care Private Limited: Technology for manufacturing biodegradable and eco-friendly single-use cutleries like straws, lids, take away container boxes, cups and spoons made from agricultural waste available locally in abundant.
- Shriram Institute for Industrial Research, Delhi: Technology development for synthesis of methyl hydroxyalkyl guar for use in building material mixtures.
- **Openwater.In Private Limited:** Fully Automated, Continuous Flow, High Throughput Water Treatment Plant.
- RKSP Tech Private Limited: Solar Powered Smart Cooking System with a Quasi-Resonant Converter.
- Chandak Innovations LLP: Solar Steamer for Small Community Cooking and Autoclaving.
- Mzon Craft Corporation Pvt. Ltd.: MZON smart gas stove.
- **QBO Technologies Pvt. Ltd. Morbi, Gujarat:** Design, Development and Testing of Energy Efficient and Environment Friendly Biogas cook-stove with Porous Radiant Burner.

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

The 2nd JanCare Challenge call was announced on 26th January 2022. Innovations are aligned with National Health Digital Mission and Ayushman Bharat.

- 90 Innovations are selected at various stages
 - Early stage: 75
 - Late stage: 13
 - Advanced stage: 2







BIRAC has supported following technologies under this thematic area:

- A prediction model for determining probability of harbouring ESBL producing enterobacteriaceae in UTI a project has been supported.
- AarogyaAlÂ-Rapid Tuberculosis Drug Sensitivity Test
- AlveoFit-Integrated, indigenous, IoT enabled, affordable Respiratory Healthcare digital platform
- Spandan-The smallest and smartest ECG machine
- CervAstra-a Computational Pathology based, affordable system for detection of Cervical Cancer.
- Cancer diagnostics Tele-reporting network enabled by Digital microscope and AI analytics platform
- AI/ML based Platform for Neonatal Sepsis Prediction
- Affordable, Wearable and wireless intrapartum fetal heart rate, uterine contraction and maternal heart rate monitoring device
- Auticare: XR-AI based Assistive Technology Learning Platform for Autism Spectrum Disorder and other neurodevelopmental disorder
- HaemurEx and Arogyam Telehealth-a Remote Health Monitoring System, Enabling Affordable and Accessible Healthcare for all
- System and method for mobile healthcare kiosk to bridge out the health service barriers, Prepare data Statics for upcoming pandemic
- SAVEMOM-Point of care device
- DRIPO-Wireless Infusion Controller over IOT mesh network (Evelabs Technologies Pvt Ltd). Dripo is a Smart Infusion Monitor, Wireless electronic monitor to measure and display the flow rate in gravity infusions and share the data wirelessly.
- I-Doctor: An intelligent diagnosis and drug dispensing platform (Persistent Systems Pvt. Ltd in collaboration with Maharashtra Institute of Medical Education and Research, Talegaon, Pune). I-Doctor is an intelligent platform for diagnosing clinical condition and decide on prescription accordingly and also dispensing drugs using drug dispensing platform.

More than 60% of funds are disbursed through the BIPP for the bioinformatics sector. >40% of projects have successfully reached PoC stage. The 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.







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More than 60% funds have been disbursed through the BIPP for the bioinformatics sector till date. >40% of projects have successfully reached PoC stage. The rest of them are at early and late-stage validation technologies. Few of the projects from the Bioinformatics area involved Industry-academia collaborations though many are pursued by industry alone.









Covid Vaccines

A. COVID 19-Therapeutics

Background:

The occurrence of COVID-19 elevated intense attention not only within India but internationally however still we do not have fully approved (by US-FDA or CDSCO) medication for treating people infected with the novel coronavirus SARS-CoV-2. People infected with this new coronavirus have reported a wide range of symptoms – ranging from mild to severe illness - often appearing 2-14 days after exposure to the SARS-CoV-2 virus. As the disease counts was rising and still reporting in India, it is of utmost importance to develop therapeutics that could be helpful in treating the patients infected with Corona virus. Effective strategies for prophylaxis and holistic management are of paramount importance in curtailing the progress of the disease and reducing burden on hospitals.

Considering the above-mentioned importance DBT/BIRAC announced a call dedicated for Covid Therapeutics.

Objectives

The scope of the call was to address at least one of the following objectives:

- Development of therapeutics to address a rapid response towards the current COVID-19 outbreak: relevant "clinical ready"-assets including approved therapies or compounds in development, which could be repurposed for use in treating patients with the coronavirus.
- Development of therapeutics to address the current and/or future coronavirus outbreaks: identification of new
 potential assets and approaches that could be utilised including preventive strategies and combination
 approaches and could also address potential resistance. This may also include optimization of promising
 treatments used in rapid response.

A total of 45 Lols were received in response to the call out of which following 4 proposals were approved for funding support.

1. Clinical evaluation, manufacture and commercialization of a phytopharmaceutical drug product for the treatment of SARS-CoV-2 virus infection.





- 2. Repurposing Anakinra for Treatment of Moderate to Severe Cases of COVID-19.
- 3. Development of nasal spray of repurposed metformin, an ACE-2 receptor antagonist, anti-inflammatory and cytokine inhibitor for treatment of COVID19.
- 4. SARS-COv2 anti-viral activity Testing platform to support the preclinical development of new chemical entities and natural products from Academia, start-ups and pharma companies.

B.COVID-19 Research Consortium

To address the COVID-19 global health care crisis, DBT-BIRAC identified the Start-ups, Academic institutions and Companies that had potential solutions to address the challenges and worked with them to scale up their COVID-19 healthcare prevention and treatment solutions. For this, two calls for proposals were announced to support Diagnostics, Vaccines, Novel Therapeutics, Repurposing of Drugs or any other intervention for control of



Some of the products developed are:

S.No.	Title	Company	Details of the product developed
1	Smart system for contactless mass screening of COVID-19 for moving subjects by every smart mobile use	Dr Amit Singh	The system consists of IR based thermopile sensor and ambient temperature sensor for ambient temperature compensation. The device can be used in a different environment having a temperature range from 10 to 50°C and humidity variation from 10 to 60 percent of RH.
2	Contactless Digital Sanitation Assurance Entry Exit System	Nuverse Health Solutions Private Limited	It is a system that can quantify the levels of hand sanitation and accordingly alert users. The system uses gas sensors to measure when hand sanitizer is applied on the hand. A temporal signature of the gas emission patterns converted to spectrogram 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 color coding.





3	Automatic Reprocessing System ARS to reprocess medical devices like ventilator circuits and expiration parts, catheters, balloons and other various medical devices to meet the demands in healthcare and at the same time ensure patient-staff safety.	Incredible Devices Pvt. Ltd.	ARS (Advanced Reprocessing System) safely reprocesses essential medical devices like ventilator expiratory parts used on COVID Patients to ensure doctor & patient safety. It is a computer aided fully automatic machine which cleans the essential medical devices with accuracy and precision.
4	SpiroPRO - Home Monitoring built to monitor daily lung health conditions of high risk patients for actively verifying fever, other respiratory symptoms and lung capacity which can lead to iincrease in susceptibility towards COVID 19 virus.	BRIOTA Technologies Private Limited	SpiroPRO is a home monitoring kit built 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.
5	A portable protective device to arrest the spread of infection in healthcare and home-care settings.	Biomoneta Research Pvt. Ltd.	The company has product where ZeBox enabled air-decontamination devices were commercially launched in June 2021.
6	Evaluation of nano copper vs copper surfaces on the survival of several respiratory viruses including Covid-19.	Reinste Nanoventure Pvt. Ltd.	Warrior Coatings are Nanotechnology based product which is 99.9% effective on vide range of pathogenic Microorganisms including Virus. The product is No toxic to humans and has 99.9% killing rate of pathogenic microbes.
7	Development of human iPSC- derived lung airway and alveolar epithelial cells for modelling COVID-19 infection and its application in antiviral screening andvaccine development.	Eyestem Research Pvt. Ltd.	Developed human iPSC-derived lung airway and alveolar epithelial cells for modelling COVID-19 infection and its application in antiviral screening and vaccine development. These cells can be grown on air liquid interface can be infected with SARS-CoV-2 indicating entry and replication of virus. The cells are ready for use for researchers for testing the potential drugs against COVID.
8	Portable Wireless Infusion monitor and Controller for Gravity Drips.	Evelabs Technologies Pvt. Ltd.	Its a Portable Wireless Infusion monitor and Controller for Gravity Drips.





Technology upgradation

The technical group along with experts takes the responsibility of continuously monitoring and mentoring the supported projects to meet their objectives. The technical group assigns nodal officers for each thematic area (to have an overall understanding of projects from that theme) and technical officers for each project (to closely monitor the progress of the project). Further, they take responsibility for achieving the goals of their respective projects. This close monitoring and mentoring have resulted in the development of several processes, technologies, commercialization of products/technologies (TRL-8 & 9), technology maturation of projects to Technology Readiness Level-7 (TRL-7), and filing of IPRs. The table below provides information on the products/technologies at validation, pre-commercialization, and commercialization stage and IP filed through BIRAC funding during 2022-2023.

S.No	Category	Number
1	Products commercialized	19
2	Process/technologies at Pre-commercialization stage	06
3	Number of projects at TRL-7 stage	23
4	IP filed	38

Significant Events from Technical Department (FY 2022-23)

- A discussion meeting was conducted on 6th July 2022 on 'Synthetic biology in India-Way Forward'. The
 meeting was Chaired by Secretary DBT and Chairperson BIRAC, Dr Rajesh S Gokhale, and was attended by
 representatives from DBT, BIRAC and researchers from academic institutes. The meeting aimed at
 understanding the synthetic biology status in India and ways by which synthetic biology can help India in
 achieving the goal of affordable product development.
- Indo-Swedish Joint Call for Proposals within Circular Economy was launched on May 2022 to support research and innovation projects that are highly relevant for, and support a, transition towards a circular economy.

The call is a collaboration between:

- ✔ Department of Science and Technology (DST), Government of India
- ✓ Department of Biotechnology (DBT), Government of India
- ✓ Ministry of Earth Sciences (MoES), Government of India
- ✓ Biotechnology Industry Research Assistance Council (BIRAC)
- ✔ Formas, the Swedish government research council for sustainable development.
- ✓ Vinnova, Sweden's Innovation Agency.
- ✔ Forte, the Swedish Research Council for Health, Working Life and Welfare.
- ✓ Swedish Research Council.
- ✓ Swedish Energy Agency.
- A Discussion Meeting was conducted on 28th July 2022 to prepare a policy guidance paper on 'Proteins & SMART Proteins'. The meeting was chaired by Dr. V. Prakash (Ex-Director, CFTRI, Mysore) in the presence of Dr. Rajesh S. Gokhale (Secretary-DBT, Chairman-BIRAC), Dr. Alka Sharma (Senior Advisor-DBT, MD-BIRAC) and was attended by representatives from DBT, BIRAC, and delegates from academic institutes. The meeting aimed to draft the policy paper on smart proteins on how India can become a leader in smart proteins including the constraints, the technology gap areas, the policy requirements, and the techno-economic viability. Under the smart proteins initiative after a series of brainstorming sessions, a draft for a national policy paper was developed in December 2022.



- BIRAC organized a Niche area meeting with Industry-Academia interaction on "Approaches for E-waste Management" on 14th October 2022 which is also International E-waste Day. The meeting was conducted at CSIR Science Centre, Lodhi Gardens, and was attended by representatives from government bodies, industry, and academic institutes such as IITs, TERI, CSIR-IIP, and Jaypee Institute. The meeting was conducted in a hybrid mode to understand the challenges of the sector and possible solutions.
- A call for proposal was announced under, 'Integrated approach to address/support COVID-19 vaccineinduced immunity, related processes, and facilities'. The call was announced on 13.10.2022. The Scope of the call is the development of treatments by accelerating pre-clinical & clinical development and development of processes/facilities for COVID-associated conditions such as pulmonary fibrosis, cystic fibrosis, acute respiratory distress syndrome, pro-thrombotic state, and diffuse tissue injury, etc. A total of 56 proposals have been received.
- A call for proposal was announced under 'Innovation Clean Technologies Scale Up'. The call aims to support technologies for scale-up and demonstration (in actual environment) for conversion of waste (solid, liquid, gas) to biogas/energy/electricity/valuables. The call ended on 15.12.2022 and a total of 56 proposals were received.
- A two-day webinar series on, 'Fermentation: Interplay of Microbes, Immunity, and Nutrition', was organized during 3rd-4th February 2023, as part of the Industry/Academia mentoring of BIRAC in collaboration with the Dept. of RDAP, North-Eastern Hill University (NEHU), Tura Campus (Meghalaya). The webinar series featured speakers from academia and industries from various parts of India. The webinar was also streamed live through YouTube. More than 2000 participants (startups, entrepreneurs, MSMEs, faculties/scientists, PhD/Post-docs) attended the 2-day webinar. Biotechnology Industry Research Assistance Council (BIRAC) also presented its role in fostering public-private partnerships for innovative product/technology development through its various schemes.
- A call for proposal was announced under, 'Establishing preclinical models for Drug discovery'. The call was announced on 20.03.2023. The Scope of the call is to generate robust preclinical models and their validation in the following areas: Metabolic Disorders, Infectious Diseases, Autoimmune disorders, Genetic and rare diseases, neurodegenerative diseases, and oncology.
- BIRAC is supporting research and development towards affordable product development and the following have resulted through BIRAC funding during 2022-23:
 - Products commercialized (TRL-9): 19; Process/technologies at the Pre-commercialization stage (TRL-8): 06; Number of projects that have completed late-stage validation (TRL-7): 23.
- Connected 122 technology seekers to startups of BIRAC-supported technologies through BIRAC technology portal.
- BIRAC had partnered with CBT-IIT-Delhi as a part of mentoring support for enhancing the research and innovation capabilities of the Indian biotech industry, particularly start-ups and SMEs. CBT-IIT Delhi conducted a training workshop/course series during 12th-15th December 2022, on different modules for industry, academia, and regulatory agencies to facilitate the creation of an ecosystem that delivers affordable biotech therapeutics to India and to the world. There was a total of 12 modules running in this course like QbD, PAT, Chromatography, DoE, MVDA, MAM, Mass Spec and AI/ML etc.



Inauguration of the training workshop/course series at CBT-IIT Delhi


Workshop sessions held during different modules

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. Legal Cell Reviews and advise management on legal implications of internal policies and procedures and also prompt processing of Legal Notices issued or received by BIRAC with respect of Statutory Compliance Violances etc.

Human Resources & Administration

In an organization, Human Resources and Administration is the department in charge of all employees and employee-related operations. The HR & A Division in BIRAC is a key function focused on maximising the potential of the Human resources of the organisation to attain organizational goals in an effective and efficient manner. 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. In line of that, the primary responsibility of HR & Administration Dept. is to manage, assist & deal with all employee related matters including such functions beginning from manpower planning to budgeting, policy administration, recruitment, benefits administration, contract management, new employee orientation, training and development, personnel records retention, salary administration, tenders & procurements, compliances, wage management, inventory, manpower planning, logistics etc.

The dedicated and resilient workforce of BIRAC continued to perform their duties despite frequent challenges. cordial relations were maintained across the Company. The Company provides comprehensive welfare facilities to its employees to take care of their health, efficiency, economic betterment, etc., and to enable them to give their best at the workplace. The Company supports participative culture in the management of the enterprise and has adopted a consultative approach with collectives, establishing a harmonious relationship for industrial peace, thereby leading to higher productivity.





The total strength of employees as on March 31st, 2023 was 72 [Seventy-two] including BIRAC Executives & Non-Executives and Project Management Units (PMUs) of which 43 [Forty-Three] were women employees.

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. 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.

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 2022-23, more than 400 man-days training has been imparted to BIRAC Employees including domain specific 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.

Swachhata Pakhwada

BIRAC observed Swachhata Pakhwada from 1st May to 15th May 2022. Swachhata pledge was administered by Director - Operations. 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.

Safeguarding the health of employees is BIRAC's top priority, therefore, sanitization of the entire office premises is being carried out on weekly basis. Also, routine cleaning and disinfection of office premises especially high-touch surfaces are being carried out in timely manner in BIRAC.

To promote and propagate the Swachh Bharat Abhiyan, the Slogan writing and Poem writing competitions were also organized online.

All employees participated with great enthusiasm in this event.



Biotechnology Industry Research Assistance Council









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	स्वच्छता पर्वावाड़ा (Swacchta Pakhwada) *	
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(Administrative Officer)	Blogan writing - Beaufrit Bharat (30 Worda)	
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	Poem Writing - Importance of classificane (150 Words)	N. SP. WORK WAY
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K Meeting Room	© Salad. All option received.	Vervion 1.7

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International Yoga Day

International Yoga Day is observed every year on June 21st to raise awareness about this ancient practice and to celebrate the physical and spiritual prowess that yoga has brought to the world. Yoga is a physical, mental and spiritual practice. It plays an important role in relaxing the mind and body and boosting people's immune system.

Biotechnology Industry Research Assistance Council (BIRAC) celebrated 8th edition of the International Day of Yoga on the theme "Yoga for Humanity" on 21st June 2022.

Yoga Day Programme was organised at Lodhi Garden, New Delhi. Officials from BIRAC and DBT gathered early in the morning and practiced guided yoga with enthusiasm alongwith Secretary DBT & Chairman BIRAC and Managing Director BIRAC. Yoga instructor, who alongwith guiding through the series of yogasans enriched the emoloyees with the value and benefits of this ancient and modern practice.



INTERNATIONAL YOGA DAY 2022 | अंतर्राष्ट्रीय योग दिवस 2022



'Har Ghar Tiranga' Campaign

Government of India has approved the programme of 'Har Ghar Tiranga' under the aegis of the Azadi Ka Amrit Mahotsav (AKAM). The central theme of the programme was to inspire every Indian to hoist the National Flag at their home and invoke the feeling of patriotism in the hearts of the citizen and promote awareness about our National Flag.

Biotechnology Industry Research Assistance Council (BIRAC) in its extended efforts to celebrate "Azadi Ka Amrit Mahotsav" also initiated "Har Ghar Tiranga" Campaign with an aim to invoke the feeling of patriotism in the hearts of the citizen and promote awareness about our national flag.

To mark this momentous occasion, National Flags were made available to BIRAC officials and were encouraged to hoist/display the Indian National Flag from 13th to 15th August 2022. Also, they were requested to pin in the Flag and upload Selfie with Flag on the "Har Ghar Tiranga" Website.

BIRAC also disseminated information related to "Har Ghar Tiranga" Campaign on BIRAC website and Social Media Platforms in order to generate enthusiasm and elicit peoples' involvement on mass scale.

To promote and propagate the "Har Ghar Tiranga" Campaign, Slogan writing, Essay writing and Poster making competitions were also organized. All employees participated with great enthusiasm in this event.



Biotechnology Industry Research Assistance Council



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Hindi Pakhwada

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

This year Biotechnology Industry Research Assistance Council observed Hindi Pakhwada from 14th September 2022 to 29th September 2022.

To promote and propagate the use of our national language, the following competitions/activities were organized during the Hindi Pakhwada:



- 1. Essay Writing Individual Competition
- 2. Administrative Terminology and Phrases Translation Competition
- 3. Official Language Hindi General Knowledge Quiz Competition
- 4. Hindi Workshop, by Consultant-Hindi.



Workshop on Prevention of Sexual Harassment at the workplace [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 at Workplace has been organised on 07th October 2022.

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.







Vigilance Awareness Week

BIRAC observed Vigilance Awareness Week from 31st October to 6th November, 2022. On account of Vigilance Awareness Week 2022, "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 every year to spread the message of gender equality and to work together in making a better society where there is no gender bias. The theme for this year's Women's day was "DigitALL: Innovation and technology for gender equality". To celebrate the event and to make the day fun filled for the women employees at BIRAC, few games were organized in BIRAC Office. The activities were executed successfully and all officials participated in the event with great enthusiasm.

Dr. Rajesh Gokhale (Secretary DBT & Chairman BIRAC) and Dr. Alka Sharma (Sr. Advisor DBT & MD BIRAC) addressed employees on the occasion of Women's Day. The session had a brief presentation on "women Achievers" followed by cultural program which consisted of Comedy/Mimicry/Group Song/Instrumental. Quiz was also organised during the session. 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, workshops were also organised 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 6 (Six) Directors viz. an Executive Chairman, an Executive Managing Director, Two Functional Directors, a Government Nominee Director and a Non-Official Independent Director.

Five Board meetings of the Company were held on the following dates: 26th May 2022, 29th July 2022, 24th November 2022, 20th December 2022, 27th March 2023.

Name of the Director	Category	Directorships in other	Member/ C Committe comp	hairman of es in other panies	Board Meetings Attended	Attendance at last AGM	
		companies	Member	Chairman	(Nos.)		
Dr. Rajesh S. Gokhale	Chairman (Executive)	Nil	Nil	Nil	5	Yes	
Dr. Alka Sharma	Managing Director (Executive)	3	3	Nil	5	Yes	
Dr. Subhra Ranjan Chakrabarti	Director (Operations)	Nil	Nil	Nil	5	Yes	
FCA Ms. Nidhi Shrivastava	Director (Finance)	Nil	Nil	Nil	5	Yes	
Shri Vishvajit Sahay	Government Nominee Director	1	Nil	Nil	5	Yes	
*Dr. Penna Krishna Prasanthi	Non-Official Independent Director	Nil	Nil	Nil	1	Not Applicable	

The details of the Directors and the Board meetings attended are as follows till 31st March, 2023:

*Dr. Penna Krishna Prasanthi was appointed as Non-Official Independent Director w.e.f. 27th, March 2023.

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 2022-23, BIRAC did not have an Audit Committee. As mandated by DPE Corporate Governance Guidelines the Audit Committee should have minimum three Directors with two thirds of them being Independent Directors and Chairman being an Independent Director. The term of the Independent Directors ended on 15th March 2020 and only one Non-official Independent Director was appointed by Board on 27th March, 2023. Three of the four sanctioned positions still remain vacant from 15.03.2020. BIRAC is not in a position to form an Audit Committee as per DPE Guidelines. The role of Audit Committee is being discharged by the Board of Directors.

4. **REMUNERATION COMMITTEE**

During the year 2022-23, BIRAC did not have a Remuneration Committee. As mandated by DPE Corporate Governance Guidelines the Remuneration Committee should have minimum three Directors all of them should be part-time Directors (Nominee Directors or Independent Directors). One Non-Official Director has been appointed in March 2023. Three positions still vacant from 15.03.2020. BIRAC is not in a position to form a Remuneration Committee as per DPE Guidelines.

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.

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
	President of India	9000	90,00,000	90
Shareholding of Promoter	Dr. Rajesh S. Gokhale (held on behalf of the President of India)	900	9,00,000	9
category	Dr. Alka Sharma (held on behalf of the President of India)	100	1,00,000	1
	GRAND TOTAL	10000	1,00,00,000	100

6. SHAREHOLDER INFORMATION AS ON 31st MARCH 2023

7. GENERAL BODY MEETINGS

The details of general body meetings are as follows:

Period ended on	Venue	Date	Time
31.03.2021	Department of Biotechnology, 2, CGO Complex, 7 th Floor, Lodhi Road, New Delhi-110003	30.11.2021	04.30 p.m.
31.03.2022	1 st Floor, MTNL Building, 9, CGO Complex, Lodhi road, Delhi-110003	24.11.2022	02:00 p.m.
31.03.2023	Department of Biotechnology, 2, CGO Complex, 7 th Floor, Lodhi Road, New Delhi-110003	27.09.2023	03.20 p.m.





8. Training of Board Members

BIRAC gives opportunity to all its Board members (Functional, Government Nominee and Independent) in line with requirement of DPE Guidelines and mandate of company to attend Directors training programmes organized by DPE and other reputed institutions. The training programmes aim at providing current developments in the field of Companies Act, Corporate Governance and model code of Business ethics as applicable to the Company and a platform to share the knowledge, skills and experience gained to and by the Directors.

9. 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 2nd May 2023 for financial year 2022-23. 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 2021-22.

10. 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.

11. COMPLIANCE CERTIFICATE

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





12. REMUNERATION OF DIRECTORS

The total remuneration paid to Functional Directors-as on 31st March, 2023:

Name of Functional the Director	Basic Pay (in Rs.)	DA (in Rs.)	HRA (in Rs.)	Prequisites (in Rs.)	Total 1⁵t April, 2022- 31⁵t March, 2023 (in Rs.)
Dr. Subhra Ranjan Chakrabarti	1934400	607278	522288	677040	3741006
FCA Ms. Nidhi Shrivastava	1934400	607278	522288	677040	3741006

13. 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 2022-23. 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 31st March 2023".

Sd/-

Dr. Jitendra Kumar (Managing Director) DIN: 07017109 FCA Ms. Nidhi Shrivastava Director (Finance) DIN: 09436809

Sd/-

Date : 27th September, 2023 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 24th February 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.

Further Amendment in Rule 3 of Companies (Corporate Social Responsibility Policy) Rules, 2014 (applicable w.e.f 20th September, 2022) mentioned that if a company having any amount in its Unspent Corporate Social Responsibility Account as per sub-section (6) of section 135 shall constitute a CSR Committee and comply with the provisions contained in sub-sections (2) to (6) of the said section.

Hence, as per the above-mentioned provisions, BIRAC does not have any upsent Corporate Social Responsibility amount. As per Board directions BIRAC has formed CSR Internal Committee. The Composition of the Committee is as follows:

- 1) Managing Director as Chairman;
- 2) Director (Operations): Member;
- 3) Director (Finance): Member;
- 4) Company Secretary: Member.
- 5) All Heads of BIRAC Divisions and Mission Director of Project Management Unit.

All Division Heads as Members of the Internal CSR Committee.

All division Heads from Project Management Units, Strategic Partnership Group & Technical Group be coopted to be part of the Internal CSR Committee for evaluation of Proposals which are received in BIRAC for preliminary evaluation.

Hence, the Board in its 54th Board Meeting held on 24th November 2022 has approved the budgetary allocation of Rs. 15,78,158/- being 2% of the net surplus/profit made during three immediately preceding financial years for CSR activities During financial year 2022-23, the Board of Directors authorised the Managing Director to examine the proposals as Chairperson of the CSR Internal Committee. Further, the





CSR Internal Committee members deliberated and approved that the CSR Fund for the Financial Year 2022-23 of Rs. 15,78,158/- (Rupees Fifteen Lakh Seventy-Eight Thousand One Hundred Fifty-eight 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
- 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

SI. 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. 7,89,07,894/-
- 7. (a) Two percent of average net profit of the company as per section 135(5): Rs. 15,78,158/-
 - (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. 15,78,158/-
- 8. (a) CSR amount spent or unspent for the financial year:

	Amount Unspent (in Rs.)							
Total Amount Spent for the Financial Year	Total Amour to Unspent (as per sec	nt transferred CSR Account tion 135(6)	Amount transferred to any fund specified under Schedule VII as per second proviso to section 135(5)					
(in Rs.)	Amount	Date of transfer	Name of the Fund	Amount	Date of transfer			
Rs. 15,78,158/-			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)
	SI. No	Name of the Project	Item from the list of activities in Schedule VII to the Act	Local area (Yes/ No)	Lo c pi State	cation of the roject District	Project duration	Amount allocated for the project (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)	Mo Implem Thr Impler Ag Name	de of entation- ough menting ency 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)		(7)	3)	3)										
SI. No	Name of the Project	Item from the list of activities in Schedule	Local Location area of the project (Yes/ No)		Location of the project		Location of the project		Location of the project		Location of the project		Location of the project		I Location of the project		Mode of Impleme- ntation- Direct	Mod Impleme Thro Implem Age	e of intation- ough ienting ncy
		Act		State	District		(Yes/ No)	Name	CSR Regist- ration number										
1.	Contribution to Swachh Bharat Kosh	ntribution to Item (i) No All India All India rachh Bharat Kosh		15,78,158	Yes	Swachh Bharat Kosh	NA												
		15,78,158																	

- (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. 15,78,158/-
- (g) Excess amount for set off, if any : Nil

SI.No.	Particular	Amount (in Rs.)
(i)	Two percent of average net profit of the company as per section 135(5)	15,78,158/-
(ii)	Total amount spent for the Financial Year	15,78,158/-
(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:

SI. 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.).	Amour fund speci as per Name of the Fund	t transferred fied under So section 135(6 Amount (in Rs)	to any hedule VII), if any Date of transfer	Amount remaining to be spent in succeeding financial years (in Rs.)			
	Not Applicable									





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

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

- **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. Jitendra Kumar (Managing Director) DIN: 07017109 FCA Ms. Nidhi Shrivastava Director (Finance) DIN: 09436809

Sd/-

Date : 27th September, 2023 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, (BIRAC)** a Section 8 not for profit private Limited Company and a CPSE under the Department of Biotechnology, Government of India (hereinafter referred as 'the Company') for the year ended on March 31st 2023 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 14th 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:*

1. Composition of Board of Directors

As per para 3.1.4 of the DPE Guidelines on Corporate Governance, the number of Non-Official Independent Directors on the board of Directors of the company should be at least one-third of the total Board Members. During the period one Non-Official Independent Director was appointed on Board on March 27th 2023. As on March 31st 2023 the Board of the company comprises of total six directors, with only one Non-Official Independent Directors of the company, the constitution and composition of the Board including appointment and/ or removal of Managing Director/ Directors/ Independent Directors is managed and controlled by the Central Government. The Company has raised the matter relating to appointment of Independent Directors through the Administrative Ministry to DoPT

2. Frequency of Board Meetings

As per para 3.3.1 of the DPE Guidelines, the company shall hold its Board Meeting at least once in every three months and at least four such meetings shall be held every year. Further, the guidelines provide that the time gap between any two board meetings should not be more than three months. During the period, two instances were observed where the time gap between two board meetings exceeded three months. As per the management, in both instances, the delay was on account of non availability of Board members for administrative reasons.





3. Re-constitution of DPE mandated Committees

During the year 2022-23, BIRAC did not have an Audit Committee and Remuneration Committee as mandated by DPE Corporate Governance Guidelines due to non-appointment of sufficient number of Non official Independent Directors. BIRAC being a Government Company has neither the power nor control over the appointment of Directors.

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 Neelam Gupta & Associates

Sd/-(Neelam Gupta) Practicing Company Secretary FCS : 3135 CP : 6950 PR No. : 747/2020 UDIN: F003135E000819060

Place: New Delhi Date: August 18th 2023





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, 2023, the Statement of Income & Expenditure, the Cash Flow Statement and notes to accounts for the year the 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, 2023, and its Profit 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 are 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 and cash flow 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





Lunawat & Co Chartered Accountants

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

- 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:
 - 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 & 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, 2023 taken on record by the board of Directors, none of the directors is disqualified as on March 31, 2023 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 longterm 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 misstatement.
- v) No dividend has been declared or paid by the company during the year.
- vi) Since applicability of maintenance of audit trail in accounting software has been deferred vide Companies (Accounts) Second Amendment Rules, 2022 to 1stApril, 2023, we are not required to comment upon the implementation and maintenance of audit trail for the year under audit.

For Lunawat & Co. Chartered Accountants F.R. No. 000629N

per CA. Ramesh Kumar Bhatia Partner M. No. 080160

Place: New Delhi Date: 17th July 2023 UDIN: 23080160BGTJEW8578





ANNEXURE "A"

Lunawat & Co Chartered Accountants

TO THE INDEPENDENT AUDITORS' REPORT

Audit Report of Biotechnology Industry Research Assistance Council for the period 01.04.2022 to 31.03.2023 pursuant to Directions/Sub-Directions under section 143(5) of the Companies Act 2013

Directions for the year 2022-23

 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 or by the company to any borrower.

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: 17th July 2023



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, 2023 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





Lunawat & Co Chartered Accountants

- pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company;
- 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, 2023, 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: 17th July 2023





Biotechnology Industry Research Assistance Council BALANCE SHEET AS AT 31st MARCH 2023 CIN U73100DL2012NPL233152

(Rs. in Lakh)

	Particulars	Note No.	As at 31.03.2023	As at 31.03.2022
Ι.	EQUITY AND LIABILITIES			
	(1) Shareholder's Funds			
	(a) Share Capital	1	100.00	100.00
	(b) Reserves and Surplus	2	13,816.98	12,678.43
	(2) Non Current Liabilities			
	(a) Other Long Term Liabilities	3	9,031.68	8,424.48
	(b) Long Term Provisions	4	40.90	57.26
	(3) Current Liabilities			
	(a) Trade Payables	5a	96.56	190.24
	(b) Other Current Liabilities	5b	24,131.77	73,813.31
	(c) Short Terms Provisions	5c	77.81	75.28
TOTAL			47,295.70	95,338.99
П	ASSETS			
	(1) Non-Current Assets			
	 Property, Plant and Equipment and Intangible Assets 			
	(i) Property, Plant and Equipment	6	119.50	74.89
	(ii) Intangible Assets	6	47.87	29.45
	(b) Non-Current Investments	7	7,727.71	6,502.87
	(c) Long-Term Loans and Advances	8	1,358.73	2,781.28
	(d) Other Non Current Assets	9	182.43	105.40
	(2) Current Assets			
	(a) Cash and Cash Equivalents	10	35,342.30	83,991.72
	(b) Short Term Loan & Advances	11	1,358.30	1,124.04
	(c) Other Current Assets	12	1,158.86	729.34
то	TAL		47,295.70	95,338.99
Sig to t	nificant Accounting Policies and Notes he Financial Statements.	19 & 20		

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 (Partner) Membership No.080160	Kavita Anandani Company Secretary	FCA Ms. Nidhi Shrivastava Director Finance DIN 09436809	Dr. Jitendra Kumar Managing Director DIN 07017109		

Place : New Delhi Date : 17th July 2023





Biotechnology Industry Research Assistance Council STATEMENT OF INCOME & EXPENDITURE FOR THE PERIOD ENDED 31st MARCH 2023 CIN U73100DL2012NPL233152

(Rs. in Lakh)

Particulars	Note No.	For the Year ended 31.03.2023	For the Year ended 31.03.2022
(1) INCOME			
Grants Received as Utilized	13	18,526.60	17,054.66
Extra-Mural Grants Received as Utilized	16A-H	35,370.75	45,414.64
Other Income	14	987.85	946.39
Total Income		54,885.20	63,415.69
(2) EXPENDITURE			
Programme Expenditure	15	16,656.60	15,396.20
Extra-Mural Programme Expenditure	16A-H	35,370.75	45,414.64
Employee Benefit Expenses	17	977.98	915.96
Depreciation & Amortization Expenses	6	82.09	35.40
Other Expenses	18	876.23	742.51
CSR Expenditure	20.16	15.78	10.81
Total Expenses		53,979.43	62,515.52
(3) Surplus of Income over Expenditure before exceptional and extraordinary items and Tax		905.77	900.17
Add/ (Less): Prior Period Income/(Expenditure) (net)			-
(4) Surplus of income over expenditure before extraordinary items		905.77	900.17
Add/(Less): Extraordinary Items		-	-
(5) Surplus before tax		905.77	900.17
Less: Current Tax		-	-
Surplus Carried Forward to Reserve & Surplus A/c		905.77	900.17
Earnings per equity share:			
(1) Basic		9,057.70	9,001.70
(2) Diluted		9,057.70	9,001.70
Significant Accounting Policies and Notes to the Financial Statements.	19 & 20		

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

Sd/-CA. Ramesh K. Bhatia (Partner) Membership No.080160

Place : New Delhi Date : 17th July 2023

For and on behalf of Board of Directors

Sd/-Sd/-Kavita AnandaniFCACompany SecretaryDire

FCA Ms. Nidhi Shrivastava Director Finance DIN 09436809

Dr. Jitendra Kumar Managing Director DIN 07017109

Sd/-





Biotechnology Industry Research Assistance Council Cash Flow Statement for the Period Ended 31st MARCH 2023 CIN U73100DL2012NPL233152

(Rs. in Lakh)

Particulars	Note No.	For the Year ended 31.03.2023	For the Year ended 31.03.2022
Cash Flow from Operating Activities: Net Surplus as per Income & Expenditure Account Adjustments for :		905.77	900.17
Depreciation Management Expenses Foreign Exchange Fluctuation		82.09 (11.65) 0.18	35.40 (11.02) 0.03
Operating Profit before Working Capital changes		(765.11) 211.28	(745.66) 178.92
Increase/(Decrease) in Provisions & Payables Increase/(Decrease) in Grant Utilisation Increase/(Decrease) In Capital Reserve/Deferred Income Fund Utilisation Towards PPP Activities (Net) Provision for Sub-Standard & Doubtful Assets (Increase)/ Decrease in Other Current Assets (Increase)/Decrease in Advances PPP Activities (Net) Cash Concreted from/(used in) Operations		728.91 (50,621.90) 10.11 829.87 - (1,719.73) 1,292.05	1,253.60 33,750.34 149.51 990.09 - (2,253.16) 2,687.00 36 756 20
Income Tax Refund/(Paid)		(49,209.41)	
Net Cash from (Used in) Operating Activities Cash Flow From/ (Used In) Investing Activities: Purchase of Fixed Assets	(A)	(49,269.41) (145.12)	36,756.30 (54,96)
Net Cash from/(Used in) Investing Activities	(B)	(145.12)	(54.96)
Interest Income		765.11	745.66
Net Cash from/(Used in) Financing Activities	(C)	765.11	745.66
Net Increase in Cash and Cash Equivalents	D=(A+B+C)	(48,649.42)	37,447.00
Cash and Cash Equivalent at beginning of the year Closing Cash and Cash Equivalent (Refer Note 20.15)	(E) F=(D+E)	83,991.72 35,342.30	46,544.72 83.991.72

Auditors Report

As per our report of even date attached For LUNAWAT & Co.

Chartered Accountants Firm Reg.No. 000629N

Sd/-CA. Ramesh K. Bhatia (Partner) Membership No.080160

Place : New Delhi Date : 17th July 2023



For and on behalf of Board of Directors

Sd/-Sd/-Kavita AnandaniFCACompany SecretaryDire

FCA Ms. Nidhi Shrivastava Director Finance DIN 09436809 Dr. Jitendra Kumar Managing Director DIN 07017109

Sd/-



Biotechnology Industry Research Assistance Council NOTES TO FINANCIAL STATEMENTS

1. Share Capital

(Rs. in Lakh)

	Particulars	As at 31.03.2023	As at 31.03.2022
Α.	Authorised		
	10,000 (10,000) Equity shares of Rs. 1000/- each	100.00	100.00
В.	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
ТС	DTAL	100.00	100.00

C. Reconciliation of Number of Shares

Particulars	As at 31.03.2023	As at 31.03.2022
	No. of shares	No. of shares
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	10,000	10,000

D. (i) Details of Shareholders holding more than 5% in equity shares of the company

	As at 31.0	3.2023	As at 31.03.2022		
Name of Shareholder	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. Rajesh S. Gokhale (held on behalf of President of India)	900	9%	900	9%	

(ii) Change in Shareholding of Promoters

Shares held by promoters	As at 31.03.2023		As at 31.03.2022		% Change
at the end of the year	No. of fully paid up shares	% of shares held	No. of fully paid up shares	% of shares held	in Shareholding
President of India	9,000	90%	9,000	90%	NA
Dr. Rajesh S. Gokhale (held on behalf of President of India)	900	9%	900	9%	NA
Dr. Alka Sharma (held on behalf of President of India)	100	1%	100	1%	NA

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**

Res	erves and Surplus		(Rs. in Lakh)
	Particulars	As at 31.03.2023	As at 31.03.2022
Ι.	Other Reserve		
	Funds Utilised for Loans under PPP Activities after 31.03.2014	1,976.32	2,508.20
	Less: Provision for Sub-Standard & Doubtful Assets (Refer Note 20.3)	(318.86)	(290.20)
	Post BIRAC Realised	7,909.71	7,343.39
	Add: Interest on post BIRAC realised	227.00	-
	(B)	9,794.17	9,561.39
II.	General Reserve		
	Surplus		
	Opening Balance	3,117.04	2,216.87
	Appropriation :		
	Add: Transfer from Statement of Income & Expenditure	905.77	900.17
	(C)	4,022.81	3,117.04
то	TAL (B+C)	13,816.98	12,678.43

3. Other Long Term Liabilities

Particulars	As at 31.03.2023	As at 31.03.2022
(a) Other Long Term Liabilities		
Pre-BIRAC Unrealised Portfolio		
Pre-BIRAC Unrealised Portfolio	6,475.95	7,236.12
Less: Provision for Sub-Standard & Doubtful Assets (Refer Note 20.3)	(5,416.38)	(5,548.80)
(A)	1,059.57	1,687.32
ACE Funding (Refer Note 20.18) (B)	7,727.71	6,502.87
(b) Deferred Government Grant #		
Opening Balance		
Deferred Government Grant Transferred from Capital Reserve (Refer Note 19.2.4A)	234.29	84.78
Add: Capital Expenditure during the Period	15.17	184.91
Less: Depreciation on Fixed Assets during the Period	(82.09)	(35.40)
(C)	167.37	234.29
Earmarked Funds for Security Deposits (D)	77.03	-
TOTAL (A+B+C+D)	9,031.68	8,424.48

Refer Note 19.2.4A





4. Long Term Provisions

(Rs. in La			
Particulars	As at 31.03.2023	As at 31.03.2022	
For Employee Benefits			
Provision for Gratuity and Leave Encashment	40.90	57.26	
	40.90	57.26	

*Liability towards Gratuity has been netted off against value of Plan Assets of Rs. 149.34 Cr

5. Current Liabilities

5a. Trade Payables

Particulars	As at 31.03.2023	As at 31.03.2022
Trade payables dues to MSME (Refer Note 20.14)	27.69	15.70
Trade payables due to creditors other than MSME	68.87	174.53
	96.56	190.24

Trade Payable Ageing Schedule

Outstanding for following periods (iii) Disputed dues - MSME (iv) Disputed (i) MSME (ii) Others from due dates of Payments dues - Others Less Than 1 Year 27.69 68.87 1 - 2 Years 2 - 3 Years _ _ _ _ More Than 3 Years _ _ Total 27.69 68.87 --

5b. Other Current Liabilities

Particulars	As at 31.03.2023	As at 31.03.2022
Unutilised Grant (Refer Note 20.12)		
Unutilised Grant (BIRAC)	-	158.77
Unutilised Grant (PPP Activities)	294.58	12.72
Unutilised Grant (DBT-BMGF-WT PMU) #	12,958.37	12,964.00
Unutilised Grant (Make in India Facilitation Cell)	1.45	96.61
Unutilised Grant (Bio-toilets in schools from North East Region)	-	3.81
Unutilised Grant (National Biopharma Mission - I3)	238.54	12,834.49
Unutilised Grant (MeitY)	59.96	39.53
Unutilised Grant (SSC NTBN)	-	15.74
Unutilised Grant (Ind CEPI)	-	57.19
Unutilised Grant (GBI)	0.80	52.17
Unutilised Grant (Covid Surkasha)	931.68	34,925.94
Unutilised Grant (Grand Innovation Challenge Program)	6.34	402.27
Unutilised AcE Fund	1,206.25	4,805.68
(A)	15,697.97	66,368.92



(Rs. in Lakh)

(Rs. in Lakh)



5b. Other Current Liabilities contd...

Other Current Liabilities contd			(Rs. in Lakh)
Particulars		As at 31.03.2023	As at 31.03.2022
Other Payables			
Pre-BIRAC Realised Portfolio		8,097.73	7,337.57
Less: Refunded to DBT			-
Add: Interest on Pre BIRAC Realised		227.48	
	(B)	8,325.21	7,337.57
Statutory Liabilities	(C)	7.54	54.82
CSR Fund ##	(D)	101.05	52.00
Total	(A+B+C+D)	24,131.77	73,813.31

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 :

	(Rs. in Lakh)
Stryker Global Technology Center Private Limited	Stryker India Private Limited
26.00	26.00
0.88	0.88
80.00	19.79
26.25	26.25
80.63	20.42
	Stryker Global Technology Center Private Limited 26.00 0.88 80.00 26.25 80.63

5c. Short Term Provisions

		, , ,
Particulars	As at 31.03.2023	As at 31.03.2022
For Employee Benefits		
Provision for Performance related pay (PRP)	70.94	70.94
Provision for Leave Encashment	6.87	4.34
	77.81	75.28



6. Schedule of Fixed Assets

										(Rs. in Lakh)
		Gros	s Block			Deprec	iation		Net	Block
Particulars	As at	Addition	Sales/ Adjustments	As at	As at	For the Period	Adjust- ments	As at	WDV as at	WDV as at
	1-Apr-2022	2022-23	2022-23	31-Mar-23	1-Apr-2022	2022-23	2022-23	31-Mar-23	31-Mar-23	31-Mar-22
Tangible Assets										
Furniture & Fixtures	305.89	6.06	I	311.95	248.96	7.50	I	256.47	55.49	56.93
Office Equipment	10.31	4.03	I	14.34	7.11	1.98	T	9.09	5.25	3.20
Computers	74.85	94.58	I	169.43	60.09	50.58	T	110.67	58.76	14.76
Total Tangible Assets	391.05	104.68		495.73	316.16	60.06	•	376.22	119.50	74.89
Intangible Assets	44.56	40.44	I	85.00	15.10	22.03	1	37.13	47.87	29.45
Total Intangible Assets	44.56	40.44	•	85.00	15.10	22.03	•	37.13	47.87	29.45
Total	435.61	145.12	•	580.72	331.27	82.09	•	413.36	167.37	104.34
Previous Year Figures	380.65	54.96	I	435.61	295.87	35.40		331.27	104.34	84.78

Biotechnology Industry Research Assistance Council





Non-Current Investments 7.

Non-Current Investments		(Rs. in Lakh)
Particulars	As at 31.03.2023	As at 31.03.2022
Others (held on behalf of DBT)		
AcE Funding (Refer Note 20.18)	7,727.71	6,502.87
	7,727.71	6,502.87

8. Long Term Loans & Advances

ong Term Loans & Advances		(Rs. in Lakh)
Particulars	As at 31.03.2023	As at 31.03.2022
Long Term Loans and Advances (Secured against Bank Guarantee/ Hypothecation/ Personal Guarantee) *		
Loans Portfolio (Including Interest on Loan Accounts PPP Activities)		
Secured Considered Good	1,583.07	2,598.58
Unsecured Considered Good	Nil	Nil
Doubtful	6,869.20	7,145.74
	8,452.27	9,744.32
Less: Current maturities of Long Term Loans & advances reflected under Current assets	1,358.30	1,124.04
Less: Provision for Doubtful Assets (Refer Note 20.3)	5,613.91	5,414.85
Less: Provision for Sub-Standard Assets		
(Refer Note 20.3)	121.33	424.15
	1,358.73	2,781.28
TOTAL	1,358.73	2,781.28

Refer 20.3 (Securities available are on historical value)

9. **Other Non Current Assets**

Particulars	As at 31.03.2023	As at 31.03.2022
Security Deposit		
Security Deposit to MTNL	105.40	105.40
Security Deposit to NSIC	77.03	-
TOTAL	182.43	105.40

10. Cash & Cash Equivalents

·		(110: III Editit)
Particulars	As at 31.03.2023	As at 31.03.2022
Cash in Hand	0.15	0.03
Balances with Banks: (Refer Note 20.15)		
In Current Accounts	0.20	0.20
In Saving Accounts	22,341.95	14,521.49
In Fixed Deposits	13,000.00	69,470.00
TOTAL	35,342.30	83,991.72



(Rs. in Lakh)
बाडरैक birac

(Rs. in Lakh)

11. Short Term Loans and Advances

Grants Received as Utilised	As at 31.03.2023	As at 31.03.2022
Current maturities of Long Term Loans and Advances:(*) (Secured against Bank Guarantee/ Hypothecation/ Personal Guarantee)	1,358.30	1,124.04
Total	1,358.30	1,124.04

* Refer 20.3

12. Other Current Assets

Other Current Assets		(Rs. in Lakh)
Particulars	As at 31.03.2023	As at 31.03.2022
Accrued Interest-FD & Saving Account (PPP, DBT / WT)	52.01	249.74
Tax Credit	551.43	252.99
Prepaid Expenses	56.46	30.08
Other Recoverable	94.37	196.53
Unutilised Grant (BIRAC)	53.53	-
Unutilised Grant (Bio-toilets in schools from North East Region)	1.66	-
Unutilised Grant (SSC NTBN)	25.55	-
Unutilised Grant (Ind CEPI)	77.85	-
Biotech Expo	246.00	-
TOTAL	1,158.86	729.34

13. Income

ncome (Rs		
Grants Received as Utilised	For the Year ended 31.03.2023	For the Year ended 31.03.2022
PPP Activities	15,132.70	14,817.54
BIRAC Activities	3,393.90	2,237.12
TOTAL	18,526.60	17,054.66

14. Other Income

Particulars	For the Year ended 31.03.2023	For the Year ended 31.03.2022
Royalty*	39.34	122.48
Management Fee - BMGF	11.65	11.02
Interest Received - Bank Accounts	765.11	745.66
Additional Interest	26.48	21.17
Other Receipts	63.18	10.66
Amortised Deferred Government Grant	82.09	35.40
TOTAL	987.85	946.39

* Rs. 31.67 lakh is reversed on account of excess royalty booked in previous years

(Rs. in Lakh)



15. Programme Expenditure

(Rs. in Lakh)

Particulars	For the Year ended 31.03.2023	For the Year ended 31.03.2022
Grants Disbursed		
PPP Activities	14,907.37	14,668.55
BIRAC Activities	1,523.91	578.66
Programme Expenditure		
PPP Activities (Operational expenditure on Advertisement, Meeting and PMC)	225.32	148.99
Total	16,656.60	15,396.20

16A. Programme Management Unit DBT & BMGF

(Rs. in Lakh) For the Year ended For the Year ended Particulars 31.03.2023 31.03.2022 Programme Expenditure (GCI) 2,434.48 2,411.40 **Operational Expenditure** 340.18 352.22 **Operational Non Recurring Expenditure** _ (A) 2,774.66 2,763.62 Less: Programme Funds from DBT (GCI) 453.28 685.04 Programme Funds from BMGF (GCI) 1,921.66 1,293.69 Programme Funds from US AID (GCI) Programme Funds from WT 59.54 59.93 Programme Funds from WT Sanger (GCI) 337.74 **Programme Funds Innovation** Challenge (GCI) 35.00 **(B)** 2,434.48 2,411.40 Less: Operational Fund from DBT 13.31 55.66 Operational Non Recurring Fund from DBT _ Operational Fund from BMGF 326.87 296.06 Operational Non Recurring Fund from BMGF Operational Recurring Fund from WT 0.50 340.18 352.22 (C) (Refer to Note: 20.13.3) (A-B-C) -_





(Rs. in Lakh)

16B. Extra-Mural Programme - Make In India

Particulars		For the Year ended 31.03.2023	For the Year ended 31.03.2022
Programme Expenditure		36.94	-
Operational Expenditure		3.12	20.47
	(A)	40.06	20.47
Less:			
Programme Funds from Make in India		36.94	-
	(B)	36.94	-
Less:			
Operational Fund from Make in India		3.12	20.47
	(C)	3.12	20.47
(Refer to Note: 20.13.5)	(A-B-C)	-	-

16C. Extra-Mural Programme - National Biopharma Mission (Innovate in India)

(Rs. in Lakh)

Particulars		For the Year ended 31.03.2023	For the Year ended 31.03.2022
Programme Expenditure		13,990.83	11,894.78
Operational Expenditure		597.82	728.19
	(A)	14,588.65	12,622.97
Less:			
Programme Funds from National Biopharma Mission (I3)		13,990.83	11,894.78
	(B)	13,990.83	11,894.78
Less:			
Operational Fund from National Biopharma Mission (I3)		597.82	728.19
	(C)	597.82	728.19
(Refer to Note: 20.13.7)	(A-B-C)	-	-

16D. Extra-Mural Programme - AcE Fund

Extra-Mural Programme - AcE Fund			(Rs. in Lakh)
Particulars		For the Year ended 31.03.2023	For the Year ended 31.03.2022
Operational Expenditure		11.65	1.44
	(A)	11.65	1.44
Less:			
Operational Fund from AcE Fund		11.65	1.44
	(B)	11.65	1.44
(Refer to Note : 20.13.8)	(A-B)	-	-





16E. Extra-Mural Programme - DBT-BIRAC-SSC(NTBN)

Extra-Mural Programme - DBT-BIRAC-SSC(NTBN)			(Rs. in Lakh)
Particulars		For the Year ended 31.03.2023	For the Year ended 31.03.2022
Operational Expenditure		41.23	49.50
	(A)	41.23	49.50
Less:			
Operational Fund from DBT-BIRAC- SSC(NTBN)		41.23	49.50
	(B)	41.23	49.50
(Refer to Note: 20.13.9)	(A-B)	-	-

16F. Ind CEPI

nd CEPI			(Rs. in Lakh)
Particulars		For the Year ended 31.03.2023	For the Year ended 31.03.2022
Programme Expenditure		-	1,808.86
Operational Expenditure		107.21	115.61
	(A)	107.21	1,924.47
Less:			
Programme Funds from National Biopharma Mission (I3)		-	1,808.86
	(B)	-	1,808.86
Less:			
Operational Fund from National Biopharma Mission (I3)		107.21	115.61
	(C)	107.21	115.61
(Refer to Note : 20.13.10)	(A-B-C)	-	-

16G. Covid Suraksha

Covid Suraksha			(Rs. in Lakh)
Particulars		For the Year ended 31.03.2023	For the Year ended 31.03.2022
Programme Expenditure		17,214.98	27,967.77
Operational Expenditure		42.93	61.28
	(A)	17,257.91	28,029.05
Less:			
Programme Funds from National Biopharma Mission (I3)		17,214.98	27,967.77
	(B)	17,214.98	27,967.77
Less:			
Operational Fund from National Biopharma Mission (I3)		42.93	61.28
	(C)	42.93	61.28
(Refer to Note : 20.13.12)	(A-B-C)	-	(-)





(Rs. in Lakh)

16H. Amrit Grand Challenge JanCare program

Particulars		For the Year ended 31.03.2023	For the Year ended 31.03.2022
Programme Expenditure		549.38	-
Operational Expenditure		-	3.12
	(A)	549.38	3.12
Less:			
Programme Funds from National Biopharma Mission (I3)		549.38	-
	(B)	549.38	-
Less:			
Operational Fund from National Biopharma Mission (I3)		-	3.12
	(C)	-	3.12
(Refer to Note : 20.13.13)	(A-B-C)	-	-

17. Employees Benefit Expenses

ParticularsFor the Year ended
31.03.2023For the Year ended
31.03.2022Salary & Allowances to Staff865.50761.94Employer's Contribution to Provident Fund
& Other Funds112.48154.02TOTAL977.98915.96









18. Other Expenses

Jthe	er Expenses (Rs. i		
	Particulars	For the Year ended 31.03.2023	For the Year ended 31.03.2022
(A)	Rent	472.69	351.37
(B)	Advertisement & Publication	11.28	14.01
(C)	Journal & Subscription	1.55	-
(D)	Meetings:		
	Meetings & Conferences	21.88	44.98
	Sitting Fees & TA and DA	0.57	0.72
(E)	Office and Administration Expenditure:		
	Travel	58.30	28.99
	Office Expenses	231.38	162.15
	AMC Computer	1.91	9.13
	Legal & Professional	5.52	3.45
	Postage & Telephone Expenses	5.49	5.32
	Power & Electricity	24.20	20.63
	Printing & Stationery	4.23	2.55
	Internet Expenses	17.07	17.29
(F)	Training Expenses	7.13	9.07
(G)	Consultancy Fee	10.73	70.85
(H)	Statutory Audit Fees	2.12	1.97
(I)	Foreign Exchange Fluctuation	0.18	0.03
тот	AL	876.23	742.51





19. 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 TaxAct, 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 in compliance, 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 Amortization

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.





The Company makes annual contributions under the Employees Gratuity scheme to a fund b) 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.

Company's liability towards employee benefits such as leave encashment is provided on the basis of C) 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

- Funds sanctioned and yet to be released till the reporting period due to timing difference of milestone a) are not taken as liability, these are accounted as expenses on actual release of payment.
- Provisioning on substandard Asset has been provided as per the approved classification of asset b) based on recoverability.
- A provision is recognized when the company has present obligations as a result of past event. It is c) 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:

- Basic earnings per share are calculated by dividing the net income or loss for the period attributable to a) equity shareholders by weighted average number of equities shares outstanding during the period.
- For the purpose of calculating diluted earnings per share, the net profit or loss for the period b) 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 27th February 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.

Section 135 of the Companies Act 2013 provides the threshold limit for applicability of the CSR to a Company:

(a) Net worth of Rs. 500 Crore (Rupees Five Hundred Crore) or more; C

Turnover of Rs. 1,000 Crore (Rupees One Thousand Crore) or more; (b)

Or

(c) 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 Companies Act.

Year of Applicability of CSR on BIRAC	:	F.Y. 2019-20 (<i>Triggered year</i>)
Reason	:	BIRAC has achieved the surplus of Rs. 7.95 Crore during the Financial Year 2019-20.

As BIRAC falls under clause (c), provisions of CSR is applicable from financial year 2020-21.



20. Notes to Accounts for the year ended 31st March 2023

- **20.1** 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.
- **20.2** 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.

		(Rs. in Lakh)
Particulars	Disbursement for the year ended 31.03.2023	Disbursement for the year ended 31.03.2022
PPP Activities		
Biotechnology Industry Partnership Programme (BIPP)	949.72	931.43
Small Business Innovation Research Initiatives (SBIRI)	622.43	454.88
Bio-Incubators support Scheme (BISS)	2,446.36	2,126.41
Biotech Ignition Grant (BIG)	6,523.33	6,150.00
University Innovation Cluster (UIC)	138.22	666.60
Translation Accelerator (TA)	189.61	172.53
Contract Research Scheme (CRS)	741.97	820.41
Social Innovation programme for Products: Affordable & Relevant to Societal Health (SPARSH)	613.23	921.95
Seed Funding for Incubators	539.08	469.54
Product Commercialization Unit (PCU)	363.25	454.50
SITARE	200.00	136.34
Mission Program on Anti Microbial Resistance (AMR)	112.99	-
Innovation Clean technologies	86.56	104.41
Covid_(A) Fast Track		19.41
Covid_(B) Research Consortium	55.21	365.55
Covid_(C) Therapeutics	208.40	84.59
LEAP Fund	900.00	755.00
Amrit Grand Challenge JanCare program		35.00
Grant Disbursed Grand Challenges	217.01	-
Total	14,907.37	14,668.55
BIRAC Activities		
Partnership Program	1,029.12	117.27
Capacity Building & Awareness	43.78	7.24
Technology Transfer / Acquisition	148.84	18.24
IP Services	71.73	92.30
Entrepreneurial Development / Regional Centres	230.45	343.62
Total	1,523.92	578.67





(Rs. in Lakh)

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20.3 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	Aging of overdue	% of Provisioning
Standard Asset	Loan accounts not rescheduled and not classified as substandard or doubtful.	Upto 365 days	NIL
Standard Asset- Rescheduled	Loan accounts which, on account of reschedulement, are not classified as substandard or doubtful assets.	Upto 365 days	NIL
Substandard Asset	Loan accounts, other than Standard Asset- Rescheduled, in which payment of instalment is due for more than one year (365 days).	More than 365 days- 999 days	upto 25%
Doubtful Asset	Loan accounts classified as doubtful, in which payment of instalment is due for 1000 days and above	Above 999 days- 1999 days	25% (cumulative 50%)
		Above 1999 days	50% (cumulative 100%)

20.3(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.

			()
Particulars		As on 31.03.2023	As on 31.03.2022
Standard Asset	А	1,212.15	2,031.96
Standard Asset – Rescheduled	В	370.93	566.63
Sub Standard Assets	С	485.31	582.79
Doubtful Assets	D	6,383.89	6,562.94
Total Assets	E (A+B+C+D)	8,452.27	9,744.32
Provision on Substandard Assets	F	121.33	424.15
Provision on Doubtful Assets	G	5,613.91	5,414.85
Total Provision	H (F+G)	5,735.24	5,839.00
Interest derecognised	I	121.56	126.95



20.Notes to Accounts for the year ended 31st March 2023

	Remark for Reschedule with name of approval authority and its impact		2 Loan accounts have heen	transferred to Substandard	and 3 to doubtful.
	No. of Parties		I		25
	Closing balance as on 31.03.2023	J=A-B+C-D- E+F+G-H	1,212.15	J=A-B+C- D-E+F+G-H	25
	Number of parties of closed Accounts	-	ı	_	20
	Recovery during the FY 2022-23	I	743.18	т	0
	Interest Recognised During the year	U	22.44	U	0
Loans	Disburse- ment during the year	Ŀ		ш	0
vement of	Transfer from Standard Asset to Doubtful during the year	ш	39.38	ш	n
Mo	Transfer from Standard Asset to Sub Standatd during the year	۵	59.69		Ν
	Transfer from Standard Asset Reschedule during the year	ပ	I	U	0
	Transfer to Standard Asset- Reschedule during the year	ß		Ш	0
	Opening Balance as on 01.04.2022	A	2,031.96	۷	20
3 (b) - I	Particular		Standard Asset		Numbers of Parties
20.	ω. No o			~	

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20

Remark for Reshedule with name of approval authority and its impact			NIL	
No. of Parties		I		с
Closing balance as on 31.03.2023	I= A+B-C+ D+E+F-G	370.93	I=A+B-C+ D+E+F-G	m
Number of parties of closed Accounts	т		т	0
Recovery during the FY 2022-23	IJ	205.25	Ċ	0
Interest Recognised During the year	L	9.56	ш	0
Disburse- ment during the year	ш	ı	ш	0
Increase in standard Assets Reshedule as transfer from Sub Standard Asset	۵	I	۵	0
Decrease in Standard Assets reshedule as transfer to Standard Asset	ပ	I	U	0
Increase in Standard Assets reshedule as transfer from Standard Asset	ß	ı	ш	0
Opening Balance as on 01.04.2022	A	566.63	A	m
Particular		Standard Assets reshedule		Numbers of Parties
o' Š			2	

20.3 (b) - III

Movement of Loans

Remark fo Resheduld with name of approva authority and its impact		2 Loan accounts have beer transferreo from Standard and 1		and I account transferrec to doubtful.
Net Closing Balance as on 31.03.2023 (after provisions)	L=J-K	363.98		Q
Provisions on Sub Standard Assets	×	121.33		I
No. of Parties	-	I		9
Closing balance as on 31.03.2023	I= A+B-C- D+E+F-G	485.31	I=A+B-C- D+E+F-G	Q
Number of parties of closed Accounts	н	ı	т	
Recovery during the FY 2022-23	σ	157.94	U	0
Interest Recognised during the year	Ŀ	1.61	ш	0
Disburse- ment during the year	ш	ı	ш	0
Decrease in Sub Standard as transfer to Doubt full Assets	٩	0.85	D	₽
Decrease in Sub Standard as transfer to Standard Ioan Reshedule	υ	ı	O	0
Increase in Sub Standard as transfer from Standard Asset reshedule/ Standard Asset	B	59.69	ш	7
Opening Balance as on 01.04.2022	A	582.79	A	Q
Particular		Sub Standard Assets		Number of Parties
ي. م ف			ო	







Partonic series as on series partonic series as on series as on series and at on at on series and at on at	Remark for Reshedule with name of approval authority and its impact		1 account has been transferred	1 account has been transferred from Substandard, 2 accounts transferred from standard loan accounts.			
Opening a son serves particulati serves particulati a son serves particulati serves parves particulati serves particulati serves particulati s	Net Closing Balance as on 31.03.2023 (after provisions)	M=J-L	769.97	M=J-L	44		2,717.04
Opening Battions and states and states and states and states and states and states and states and states and states and states and states and states and and states and states and states and states and and states and and states and and states and and and states and and and and and and and and and and	Provisions on Doubtful Assets		5,613.91	_			5,735.24
Denting Balance Bane <th>No. of Parties</th> <th>×</th> <th>I</th> <th>×</th> <th>44</th> <th></th> <th>78</th>	No. of Parties	×	I	×	44		78
Appending BatanceDening the mised batements Batance Batance Batance BatanceDening the mised batements Batance BatanceDening the mised batements Batance BatanceDening the mised batement mised batement Batance BatanceDening the mised batement mised batement BatanceDening the mised batement mised batement BatanceDening the mised batement BatanceDening the mised batement BatanceMuthement BatanceDening the mised batement BatanceMuthement BatanceDening the mised batement BatanceMuthement BatanceDening the mised batement BatanceMuthement BatanceDening the mised batement BatanceDening the mised batement BatanceDening the mised batement BatanceMuthement BatanceDening the mised batement BatanceDening the mised bat	Closing Balance as on 31.03.2023	J=A+B+C-D+ E+F-G-H	6,383.89	J=A+B+C- D+E+F-G-H	44		8,452.28
Ability BalanceIncrease Balance Balance Balance BalanceIncrease Balance Balance BalanceIncrease Balance BalanceIncrease BalanceIncrease BalanceIncrease BalanceIncrease BalanceIncrease BalanceIncrease BalanceIntreest BalanceI	Number of parties of closed Accounts	_		—	.		
Particular Balance Balance BalanceDepenting Increase Balance assets as assets as ssets as standard AssetIncrease butting the during the standard AssetIncrease butting the butting the standard AssetIncrease butting the sets as transfer transfe	Written Off during the FY 2022-23	т	I	Т	0		
Particular Balance as on as on as on Dubtful easets as as on barindic barticularDecrease in Doubtful buttur buttur buttur buttur buttur buttur butturDecrease in ment ment buttur buttur buttur buttur butturDecrease in ment buttur buttur buttur butturDecrease in ment buttur buttur buttur butturDecrease in ment buttur buttur buttur butturDecrease tur ment buttur buttur butturDecrease tur ment buttur buttur butturDecrease tur buttur buttur buttur butturDecrease tur buttur buttur buttur butturDecrease tur buttur buttur buttur butturDecrease tur transfer funce buttur buttur butturDecrease tur transfer buttur buttur butturDecrease 	Recovery during the FY 2022-23	σ	220.11	U	0		
Particular Balance BalanceOpening in Doubtful as on as sets as as on as sets as assets as poubtful 	Interest Recog- nised During the year	L	0.83	ш	0		
ParticularOpening BalanceIncrease in Doubtful as on as on as on as on as on as on as on as on as on balanceIncrease as on transfer assets as 	Disburse- ment during the year	ш	1	ш	0		
Opening Balance Balance BalanceIncrease in Doubtful as on transfer sasets as tom Sub standard 	Decrease in Doubtful assets as transfer to Sub Standard Assets	٥	ı	Ω	0		2
Copening Balance Balance as on as on as on as on as on as on as ets as assets as transfer from Sub Standard AssetParticularAParticularAParticularAParticularAABCABBNumber41Of Parties41Stotal Value as per Balance she	Increase in Doubtful assets as transfer from Standard Asset	ပ	39.38	C	с		et (+ + +
Particular Particular Doubfful 6,562.94 Assets A Parties A Salance A A A A A A A A A A A A A A A A A A A	Increase in Doubtful assets as transfer from Sub Standard Asset	в	0.85	Ш	-		alance she
Particular Doubtful Assets Number of Parties	Opening Balance as on 01.04.2022	A	6,562.94	A	41		alue as per B
2	Particular		Doubtful Assets		Number of Parties		ross Total V

20.3 (b) - IV

(Rs in Lakh)

(Rs. in Lakh)

20.4 Age Wise Overdue Position

			(
Particulars		As on 31.03.2023	As on 31.03.2022
Upto one year	(A)	-	44.26
More than one year accumulated	(B)	6,403.66	6,520.91
	Total (A+B)	6,403.66	6,565.17

20.5 Suit Filed Accounts:

20.5.1 Suits filed by the company:

	As on 31	.03.2023	As on 31.03.2022		
Particulars	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

20.5.2 Suits filed against the company:

Particulars	As on 31	.03.2023	As on 31.03.2022	
	Number of accounts	Total Amount*	Number of accounts	Total Amount
Suit filed accounts	2	Nil	1	Nil

* Appeal against Central Information Commission (CIC) order

20.6 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 20.13.3**

20.7 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 20.13.4**
- (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 20.13.5
- (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 20.13.6**
- (d) National BioPharma Mission (I3): The program named Innovate in India (I3) is an industryacademia 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 20.13.7
- (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 Note 20.13.8
- (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 Note 20.13.9



- (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 Note 20.13.10**
- (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 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 20.13.12
- (j) Amrit Grand Challenge JanCare program: Grand innovation Challenge Program aimed to identify and support start-ups developing Telemedicine, Artificial Intelegence, Digital Health, Big data solutions. Refer Note 20.13.13

20.8 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.

20.9 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.

Name of Related Party	Transaction during the year with related Party
Dr. Alka Sharma, Managing Director	Nil

20.10 **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 12^{th} May, 2014.

20.11 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. 2308.70/- Lakh (Previous Year Rs. 1987.92/- Lakh)



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В. Expenditure:

3. Expenditure: (Rs. in La			
S.No.	Particulars	For the Period ended 31.03.2023	For the Period ended 31.03.2022
(i)	Technology Transfer	26.94	24.27
(ii)	Books, Journal and Database Subscriptions	-	37.18
(iii)	Entrepreneurship Development	-	5.83
(iv)	Advertisement/Publicity/Publication	-	3.63
(v)	Foreign Travel and Meetings	3.47	4.01

C. CIF Value of import is Nil for the current reporting period.

20.12 Details of Fund available and Utilised

S.No.	Particulars	Fund Available	Fund Utilised	Limit Expired	Balance
1	BIRAC	4,204.80	3,517.71	740.64	(53.55)
2	PPP Activities	15,586.88	15,292.29	-	294.59
3	PMU - DBT/BMGF:				
	(i) Operational	2,544.50	340.18	-	2,204.32
	BMGF	2,607.15	326.87		2,280.28
	DBT Operational	(62.70)	13.31		(76.01)
	DBT - Non Recurring	-	-	-	-
	WT Operational	0.05	-	-	0.05
	(ii) Projects	13,682.64	2,485.03	443.55	10,754.06
	BMGF	12,518.14	1,921.66		10,596.48
	DBT	958.99	503.83	443.55	11.61
	USAID	151.53	-		151.53
	GCI_Innovation Challenge	15.00	-		15.00
	WT Projects	(29.01)	59.54		(88.55)
	WT SANGER Projects	67.99	-		67.99
	Total	16,227.14	2,825.21	443.55	12,958.38
4	MeitY(IIPME)	59.96	-	-	59.96
5	Make in India Facilitation Cell	98.06	42.22	54.38	1.46
6	Bio-toilets in schools from NER	3.81	5.47		(1.66)
7	National BioPharma Mission (I3)	26,384.64	14,873.26	11,272.85	238.54
8	AcE Fund	6,011.93	1,236.49	3,569.18	1,206.25
9	SSC(NTBN)	15.80	41.35	-	(25.55)
10	IndCEPI	57.48	135.33		(77.85)
11	GBI	52.98	2.18	50.00	0.80
12	Covid Surksha	40,424.07	18,064.07	21,428.32	931.68
13	Amrit Grand Challenge JanCare program	662.16	554.77	-	107.39







20.13 Supplementary Schedule on Scheme Balances as on 31.03.2023

20.13.1 PPP Activities Funds

PPPAct	ivities Funds		(Rs. in Lakh)	
	Particulars		AS ON 31.03.2023	AS ON 31.03.2022
	Opening Balance		12.71	78.94
Add:	Funds received from DBT		14,500.00	14,500.00
Add:	Interest Income		-	31.15
Add:	Recoveries from unspent grant		1,074.17	88.53
Add:	Income From SEED/LEAP Fund		-	156.50
			15,586.88	14,855.12
Less:	Amount disbursed during the year:			
	Grants Disbursed	14,907.37		14,668.55
	Loans Disbursed	-		-
	Programme Expenses	225.32		148.99
	Interest Refund to DBT	159.60	15,292.29	24.87
			294.59	12.71
Add :	Surplus Redeployed towards Expenses		-	-
	Unutilised Balance Carried Forward		294.59	12.71

20.13.2 BIRAC Funds

	unds			(Rs. in Lakh)
	Particulars		AS ON 31.03.2023	AS ON 31.03.2022
	Opening Balance		158.76	27.85
Add:	Received from DBT		4,000.00	2,480.00
Add:	Interest Income		-	2.71
Add:	Recoveries from unspent grant		46.04	24.45
			4,204.80	2,535.01
Less:	Amount disbursed for Grants			
	Partnership Programmes	1,029.12		117.27
	Technology Transfer & Acquisition	148.84		18.24
	Intellectual Property	71.73		92.30
	Entrepreneurial Development	230.44		343.62
	Capacity Building & Awareness	43.77		7.24
		-	1,523.91	-
			2,680.88	1,956.34
Less:	Utilisation towards:			
	Manpower Expenses	977.98		915.97
	Non-Recurring Expenses	92.27		136.86
	Recurring Expenses	892.03		742.50
	Interest Refunded	31.51	1,993.79	2.25
			687.09	158.76
Less:	Limit Expired		740.64	-
	Unutilised Balance Carried Forward		(53.55)	158.76





20.13.3 BMGF PMU

				(Rs. in Lakh)
	Particulars		AS ON 31.03.2023	AS ON 31.03.2022
	Opening Balance			
	Operations Fund	1,851.92		1,753.79
	Project Fund	11,112.07	12,963.98	7,042.40
Add:	Received From BMGF - Project	1,959.02		5,011.37
	Received From BMGF - Operations	638.49		401.76
	Received From DBT - Project	86.71		771.35
	Received From DBT - Operations	-		-
	Received From WT SANGER	-		360.24
	Received From WT Projects	-		46.48
	Received From WT - Operations	0.61	2,684.82	-
Less:	Interest Refunded		50.54	27.75
Add::	Bank Interest & Unspent Grant	578.33	578.33	367.98
			16,176.60	15,727.61
Less:	Project Disbursement			
	GCI: GSED	104.67		52.62
	GCI: ACT	360.15		-
	GCI: IK			84.00
	GCI: IDIA	57.91		95.98
	GCI: HPV	507.97		1,029.12
	GCI: AMR	14.43		54.51
	GCI: Ki Data Challenge	42.89		42.44
	GCI: Sentinels	01.90		9.84
	GCI: MSSFR	45.03		99.93
	GCI: Selenium	167.66		-
	GCI: GIPA	177.95		-
	GCI: Covid 19	327.43		315.95
	GCI: WT Sanger	-		337.74
	GCI: MOMI	155.03		-
	GCI: Non-Hormonal Conteiceptive	94.42		-
	GCI: Innovation Challenge	-		35.00
	GCI: Med Tech	168.66		147.73
	GCI: RTTC	39.34		
	GCI: NTD	0.90		
	GCI: MOMI IDES-2021_N-Link	29.59		
	GCI: WLGH Meeting	17.02		
	GCI: Sero Surveillance	21.54		
	GCI: Amrit Grand Challenge	100.00		
	GCI: MOMI IDES-2021_N-Link	-	2,434.49	106.54
Less:	Activities Expenditure			
	KSTIP (KnIT)	6.50		58.50
	Communication Support	-	6.50	-



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Less:	Operational Expenditure			
	Manpower Expense	148.63		131.00
	Meeting Expenses	45.91		12.91
	Expenses for Space	126.93		117.98
	Administrative Expenses	0.56		19.47
	Equipment Expenses	-		0.83
	Wellcome Trust- Manpower	-		0.50
	Management Expenses	11.65	333.68	11.02
Less:	Limit Expired		443.55	
	Balance Fund			
	BMGF - Projects	10,596.48		10,051.67
	DBT - Projects	11.61		860.66
	USAID - Projects	151.53		147.54
	BMGF - Operations	2,280.28		1,915.17
	DBT - Operations	(76.01)		(62.70)
	WT SANGER	67.99		66.20
	GCI_Innovation Challenge	15.00		15.00
	WT Projects	(88.56)		(29.01)
	WT- Operation	0.05	12,958.37	(0.56)
			12,958.37	12,963.98

20.13.4 MeitY(IIPME)

			(Rs. in Lakh)
	Particulars	AS ON 31.03.2023	AS ON 31.03.2022
	Opening Balance	39.53	0.22
	Received during the period	-	-
		39.53	0.22
Add:	Bank Interest	1.07	-
	Recoveries from unspent grant	19.36	39.31
		59.96	39.53
Less :	Programme Expenditure*	-	-
	Operational Expenditure	-	-
		59.96	39.53
Add:	Fund Redeployed towards Expenses from BIRAC	-	-
	Unutilised Balance Carried Forward	59.96	39.53

* The programme expenditure includes loan disburded amounting to Rs. NIL (PY NIL) having total outstanding Amount of Rs 21.08 lakh including accrued interest (PY Rs. 37.21 lakh)





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20.13.5 Make in India Facilitation Cell

			(Rs. in Lakh)
	Particulars	AS ON 31.03.2023	AS ON 31.03.2022
	Opening Balance	96.60	67.88
	Received during the period	-	48.00
		96.60	115.88
Add:	Bank Interest	1.45	1.47
		98.06	117.36
Less :	Operational Expenditure	40.05	20.47
	Interest Refund to DBT	2.17	0.28
	Limit Expired	54.38	-
	Unutilised Balance Carried Forward	1.46	96.60

20.13.6 Bio-toilets in schools from North East Region

			(Rs. in Lakh)
	Particulars	AS ON 31.03.2023	AS ON 31.03.2022
	Opening Balance	3.81	3.71
	Received during the period	-	-
		3.81	3.71
Add:	Bank Interest	-	0.10
		3.81	3.81
Less :	Programme Expenditure	-	-
	Interest Refund to DBT	5.47	-
	Unutilised Balance Carried Forward	(1.66)	3.81

20.13.7 National Biopharma Mission (Innovate in India)

			(Rs. in Lakh)
	Particulars	AS ON 31.03.2023	AS ON 31.03.2022
	Opening Balance	12,834.48	2,720.10
	Received during the period	13,000.00	22,200.00
		25,834.48	24,920.10
Add:	Recoveries from unspent grant	400.90	346.55
	Bank Interest	149.26	284.61
		26,384.64	25,551.26
Less :	Programme Expenditure	13,990.83	11,894.78
	Operational Expenditure	597.82	728.32
	Interest Refund to DBT	284.61	
	Limit Expired	11,272.85	93.68
	Unutilised Balance Carried Forward	238.54	12,834.48



20.13.8 AcE Fund

			(Rs. in Lakh)
	Particulars	AS ON 31.03.2023	AS ON 31.03.2022
	Opening Balance	4,805.67	6,570.55
	Received during the period	-	-
		4,805.67	6,570.55
Add:	Bank Interest	1,206.25	290.45
		6,011.93	6,860.99
Less :	Ace Funding	1,224.84	2,053.88
	Operational Expenditure	11.65	
	Limit Expired	3,569.18	1.44
	Unutilised Balance Carried Forward	1,206.25	4,805.67

20.13.9 SSC(NTBN)

			(Rs. in Lakh)
	Particulars	AS ON 31.03.2023	AS ON 31.03.2022
	Opening Balance	15.74	2.80
	Received during the period	-	63.22
		15.74	66.02
Add:	Bank Interest	0.06	0.12
		15.80	66.14
Less :	Operational Expenditure	41.23	49.50
	Interest Refund to DBT	0.12	0.90
	Unutilised Balance Carried Forward	(25.55)	15.74

20.13.10 IndCEPI

			(Rs. in Lakh)
	Particulars	AS ON 31.03.2023	AS ON 31.03.2022
	Opening Balance	57.19	2,014.74
	Received during the period	-	-
		57.19	2,014.74
Add:	Bank Interest	0.29	28.12
		57.48	2,042.86
Less :	Programme Expenditure	-	1,808.86
Less :	Operational Expenditure	107.21	115.61
Less :	Interest Refund to DBT	28.12	61.20
	Unutilised Balance Carried Forward	(77.85)	57.19





20.13.11 GBI

			(Rs. in Lakh)
	Particulars	AS ON 31.03.2023	AS ON 31.03.2022
	Opening Balance	52.17	131.62
	Received from DBT	-	-
	Sponsorship	-	-
	From BIRAC	-	6.25
		52.17	137.87
Add:	Bank Interest	0.81	2.18
		52.98	140.05
Less :	Operational Expenditure	-	87.88
	Interest Refund to DBT	2.18	-
Less :	Limit Expired	50.00	-
	Unutilised Balance Carried Forward	0.80	52.17

20.13.12 Covid Suraksha

			()
	Particulars	AS ON 31.03.2023	AS ON 31.03.2022
	Opening Balance	34,925.95	12,255.97
	Received from DBT	4,595.00	50,000.00
		39,520.95	62,255.97
Add:	Bank Interest	564.49	
Add:	Recoveries from unspent grant	338.64	806.15
		40,424.07	63,062.12
Less :	Operational Expenditure	17,257.92	28,029.04
	Interest Refunded	806.15	107.14
Less :	Limit Expired	21,428.32	
	Unutilised Balance Carried Forward	931.68	34,925.95

20.13.13 Amrit Grand Challenge JanCare program

				(
	Particulars		AS ON 31.03.2023	AS ON 31.03.2022
	Opening Balance		454.27	-
	Received from DBT	-		400.00
	CSR Fund	99.79		52.00
	Received from GCI	100.00	199.79	-
			654.06	452.00
Add:	Bank Interest on CSR	1.76		
Add:	Bank Interest	6.34	8.10	5.39
			662.16	457.39
Less :	Operational Expenditure_DBT	396.88	-	3.12
Less :	Operational Expenditure_CSR	52.50	-	-
Less :	Operational Expenditure_GCI	100.00	-	-
Less :	Interest Refunded tp DBT	5.39	554.77	-
	Balance Fund			
	CSR Fund	101.05		-
	DBT Fund	6.34	107.39	-
	Unutilised Balance Carried Forward		107.39	454.27

(Rs. in Lakh)

(Rs. in Lakh)





20.14 Disclosures required under Section 22 of Micro, Small and Medium Enterprises (MSME) Development Act, 2006 (Rs. in Lakh)

			(- /
S.No.	Particulars	AS ON 31.03.2023	AS ON 31.03.2022
(i)	Principal amount remaining unpaid to MSME suppliers as at the end of the reporting period.	27.69	-
(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	27.69	-

The above information regarding dues to MSME has been determined to the extent such parties have been identified on the basis of information submitted.

20.15 Details of Balances with Banks

		(Rs. in Lakh)
Particulars	AS ON 31.03.2023	AS ON 31.03.2022
Current Accounts		
Union Bank of India (DBT-BMGF PMU)	0.20	0.20
Saving Accounts		
Union Bank of India (BIRAC/Make In India/Bio-Toilets/MeitY)	16,487.97	11,755.43
HDFC Bank (BIRAC)	1.23	27.80
State Bank of India (PPP Activities/AcE, NBM)	4,375.55	1,938.49
State Bank of India (DBT-NBM PMU)	702.95	489.47
State Bank of India (DBT-BMGF PMU)	757.46	310.30
ICICI Bank*	16.79	-
RBI TSA Account	-	-
	22,341.95	14,521.49
Fixed Deposits		
- Maturity less than 90 days	13,000.00	69,470.00
	13,000.00	69,470.00

*The transaction has been made on 31st March, 2023 and cleared on 6th April, 2023

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.

20.16.1 Disclosure of Corporate Social Responsibility

- a Gross amount required to be spent by the company during the year Rs. 15.78/- Lacs
- b Amount approved by the Board to be spent during the year Rs. 15.78/- Lacs





c - Amount Spent during the year on:			(Rs. in Lakh)	
S. No	Particulars	Paid	Yet to be paid	Total
1	Swachh Bharat Kosh	15.78	-	15.78

- 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 Companies 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

20.16.2 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.80.00 lakh (Eighty Lakh 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 31.03.2023.

BIRAC received CSR funds of Rs.19.79 lakh (Nineteen Lakh Seventy Nine Thousand 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 31.03.2023.

CSR funds received during the financial year as below:

		(Rs. in Lakh)
Particulars	Stryker Global Technology Center Private Limited	Stryker India Private Limited
Opening Balance as on 1 st April 2022	26.00	26.00
Add: Interest earned during the year	0.88	0.88
Add: Fund received during the Financial Year	80.00	19.79
Less: Fund Utilized during the Financial Year	26.25	26.25
Closing Balance as on 31 st March 2023	80.63	20.42

20.17 Disclosure pursuant to Accounting Standard (AS) 15 Revised "Employee Benefits" :

20.17.1 Disclosure on Gratuity





I Assumptions as at

Particulars	Financial Year ending		
	2022-23	2021-22	
Interest/Discount Rate	7.14%	6.20%	
Rate of increase in compensation	3.00%	3.00%	
Rate of return (expected) on plan assets	7.14%	6.20%	
Employee Attrition Rate (Past Service (PS))	0PS: 0 to 42 : 15%	0PS: 0 to 42 : 15%	
	-	-	
Expected average remaining service	5.05	5.24	

Ш Changes in present value of obligations

Financial Year Particulars As on 31.03.2023 As on 31.03.2022 Defined Benefit Obligation at the beginning 149.54 117.38 8.54 28.51 Add :- Current Service Cost 32.08 Add :- Interest Cost 6.19 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 (9.00)(4.43)Add/Less :- Net transfer in/(out) (including the effect of any business combinations/divestitures) Add/Less :- Actuarial Loss/(Gain) on Obligation (20.74)1.89 **Defined Benefit Obligation at the end** 160.42 149.54

Changes in fair value of plan assets 111

(Rs. in Lakh) **Financial Year ending Particulars** As on 31.03.2023 As on 31.03.2022 Opening balance of the fair value of the plan assets 129.65 125.80 Add: Adjustment to Opening balance Add: Expected Return on plan assets 8.37 7.44 Add: Contributions by Employer 19.89 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) 0.43 0.85 Less: Benefits Paid (9.00)(4.43)Closing balance of the plan assets 149.34 129.65



(Rs. in Lakh)



IV Fair Value of Plan Assets

(Rs. in Lakh)

Particulars	Financial Year		
	As on 31.03.2023	As on 31.03.2022	
Opening balance of the fair value of the plan assets	129.65	125.80	
Add: Adjustment to Opening balance	-	-	
Add: Actual Return on plan assets	8.80	8.29	
Add: Contributions by Employer	19.89	-	
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	(9.00)	(4.43)	
Fair value of the plan assets at the end	149.34	129.65	
Funded Status (including unrecognised past service cost)	(11.09)	(19.89)	
Excess of Actual over estimated return on Plan Assets	0.43	0.85	

V Experience History

		(Rs. in Lakh)	
Particulara	Financial Year		
	2022-23	2021-22	
(Gain)/Loss on obligation due to change in Assumption	(6.18)	(3.23)	
Experience (Gain)/ Loss on obligation	(14.56)	5.12	
Actuarial Gain/(Loss) on plan assets	0.43	0.85	

VI Actuarial Gain/(Loss) Recognized

(Rs.	in	Lakh)
(

Particulars	Financial Year		
	2022-23	2021-22	
Actuarial Gain/(Loss) for the period (Obligation)	20.74	(1.89)	
Actuarial Gain/(Loss) for the period (Plan Assets)	0.43	0.85	
Total Gain/(Loss) for the period	21.17	(1.04)	
Actuarial Gain/(Loss) recognized for the period	21.17	(1.04)	
Unrecognized Actuarial Gain/(Loss) at end of period	-	-	





VII Past Service Cost Recognised

ast bervice obstractognised		(Rs. in Lakh)
Particulars	1-Apr 22 t	to 31-Mar-23	
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 Income & Expenditure (Rs. in Lakh)

Particulars	Financial Year		
	As on 31.03.2023	As on 31.03.2022	
Present Value of Obligations at end of period	160.43	149.54	
Fair Value of Plan Assets at end of period	149.34	129.65	
Funded Status	(11.09)	(19.89)	
Unrecognized Actuarial Gain/(Loss)	-	-	
Unrecognised Past Service Cost- non vested benefits	-	-	
Net Asset/(Liability) recognized in the balance sheet	(11.09)	(19.89)	

IX Expense recognized in the statement of Income & Expenditure

		(Rs. in Lakh)	
Particulare	Financial Year		
	As on 31.03.2023	As on 31.03.2022	
Current Service Cost	32.09	28.51	
Interest Cost on Obligation	8.54	6.19	
Past Service Cost	-	-	
Expected return on Plan Assets	(8.38)	(7.44)	
Amortization of Prior service cost	-	-	
Net actuarial (Gain)/Loss to be recognised	(21.17)	1.04	
Transfer In/Out	-	-	
Curtailment (Gain)/Loss recognized	-	-	
Settlement (Gain)/Loss recognised	-	-	
Expense recognised in Income & Expenditure	11.08	28.31	





X Movements in the Liability recognized in Balance Sheet

		(Rs. in Lakh)	
Particulars	Financial Year		
	As on 31.03.2023	As on 31.03.2022	
Opening Net Liability	19.89	(8.42)	
Adjustment to opening balance	-	-	
Expenses as above	11.08	28.31	
Expected return on Plan Assets	-	-	
Transfer in Liability	-	-	
Transfer in Fund	-	-	
Transfer out Liability	-	-	
Transfer out Fund	-	-	
Benefits Paid By The Company	-	-	
Contribution paid	(19.89)	-	
Closing Net Liability	11.08	-	

XI Schedule III of The Companies Act 2013

		(Rs. in Lakh)
Particulars	Financial Year	
	As on 31.03.2023	As on 31.03.2022
Current Liability	27.48	23.65
Non-Current Liability	132.94	125.90

XII Projected Service Cost 31 Mar 2023

XIII Asset Information

As on 31.03.2023		
Total Amount	Target Allocation %	
149.34	100.00%	
-	-	
-	-	
-	-	
-	-	
149.34	100.00%	
	As on 31 Total Amount 149.34 - - - - 149.34	

XIV Effects of changes in assumptions

Discount Rate : The increased rate has increased from 6.20% to 7.14% 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.

29.09

(Rs. in Lakh)



20.17.2 Disclosure on Leave Encashment

I Assets / Liabilities

		(Rs. in Lakh)
As on	31⁵ March, 2023	31 st March, 2022
Present value of obligation	36.68	41.71
Fair value of plan assets	-	-
Net assets / (liability) recognized in balance sheet as provision	(36.68)	(41.71)

II Summary of membership data

		(Rs. in Lakh)
As at	31⁵ ^t March, 2023	31⁵ March, 2022
a) Number of employees	47	59
 b) Total Monthly Salary for leave encashment (Lakhs) 	43	49
 c) Total Monthly Salary for leave availment (Lakhs) 	86	97
d) Average Past Service (Years)	6	5
e) Average Age (Years)	39	38
f) Average remaining working life (Years)	2	3
g) Leave balance considered on valuation date	1,137	1,118

III Actuarial Assumptions :

i) Retirement Age (Years) 60/Contract Period 60/Contract Period ii) Mortality rate inclusive of Provision IALM (2012 - 14) IALM (2012 - 14) for disability iii) Ages Withdrawal Rate (%) Withdrawal Rate (%) Up to 30 Years 5.00 5.00 5.00 5.00 From 31 to 44 years Above 44 years 5.00 5.00 iv) Leaves 5% 5% Leave Availment Rate Nil Nil Leave Lapse rate while in service Nil Leave Lapse rate on exit Nil Leave encashment Rate while Nil Nil in service



(Rs. in Lakh)



IV Change in benefit obligation

			(Rs. in Lakh)
	Particulars	31.03.2023	31.03.2022
a)	Present value of obligation as at the beginning of the period	41.71	-
b)	Acquisition adjustment	-	-
c)	Interest cost	2.37	-
d)	Past service cost	0	31.9
e)	Current service cost	7.15	9.81
f)	Curtailment cost/(Credit)	-	-
g)	Settlement cost/(Credit)	-	-
h)	Benefits paid	-7.83	-
i)	Actuarial (gain)/loss on obligation	-6.72	-
j)	Present value of obligation as at the end of period	36.68	41.71

$V \quad The amounts to be recognized in balance sheet and related analysis \\$

			(Rs. In Lakh)
	Particulars	31.03.2023	31.03.2022
a)	Present value of obligation as at the end of the period	36.68	41.71
b)	Fair value of plan assets as at the end of the period	-	-
c)	Funded status / Difference	-36.68	-41.71
d)	Excess of actual over estimated	-	-
e)	Unrecognized actuarial (gains) / losses	-	-
f)	Net asset / (liability)recognized in balance sheet	-36.68	-41.71

VI Expense recognized in the statement of Income & Expenditure

			(Rs. in Lakh)
	Particulars	31.03.2023	31.03.2022
a)	Current service cost	7.15	9.81
b)	Past service cost	0	31.9
c)	Interest cost	2.36	-
d)	Expected return on plan assets	-	-
e)	Curtailment cost/(Credit)	-	-
f)	Settlement cost/(credit)	-	-
g)	Net actuarial (gain)/loss recognized in the period	-6.72	-
h)	Expenses recognized in the statement of Income & Expenditure	2.79	41.71





VII Reconciliation statement of expense in the statement of profit and loss

1000			(Rs. in Lakh)
	Particulars	31.03.2023	31.03.2022
a)	Present value of obligation as at the end of period	36.68	41.71
b)	Present value of obligation as at the beginning of the period	41.71	-
c)	Benefits paid	7.83	-
d)	Actual return on plan assets	-	-
e)	Acquisition adjustment	-	-
f)	Expenses recognized in the statement of Income & Expenditure	2.80	41.71

VIII Amounts for the current period

			(Rs. in Lakh)
	Particulars	31.03.2023	31.03.2022
a)	Present value of obligation as at the end of period	36.68	41.71
b)	Fair value of plan assets at the end of the period	-	-
c)	Surplus / (Deficit)	-36.68	-41.71
d)	Experience adjustment on plan Liabilities (loss) / gain	5.91	-
e)	Experience adjustment on plan Assets (loss) / gain	-	-

IX Movement in the liability recognized in the balance sheet

(Rs. in Lakh)

			,
	Particulars	31.03.2023	31.03.2022
a)	Opening liability	41.71	-
b)	Expenses as above	2.80	41.71
c)	Benefits paid	-7.83	-
d)	Actual return on plan assets	-	-
e)	Acquisition adjustment	-	-
f)	Closing liability	36.68	41.71

X Bifurcation of PBO at the end of year as per schedule III to the companies Act, 2013

	· ·	•	(Rs. in Lakh)
	Particulars	31.03.2023	31.03.2022
a)	Current liability	6.87	4.34
b)	Non-Current liability	29.81	37.37
c)	Total PBO at the end of year	36.68	41.71





(Rs.in Lakh)

S No	Particulare	Financial Year Ending	
0.110.		As on 31 st March 2023	As on 31 st March 2022
1	Other Non-Current Investment (unquoted)		
a)	GVFL Start-up Fund	657.21	657.21
b)	IAN Fund	1,786.95	1,813.31
c)	Stakeboat Capital Fund	236.27	262.89
d)	Bharat Innovation Fund	1,359.13	1,327.25
e)	Kitven Fund - 3	320.96	232.98
f)	Ankur Fund II	901.93	717.38
g)	Endiya Partners Trust	1,074.65	787.82
h)	RVCF India Growth Fund	435.33	426.47
i)	Somerset Indus Healthcare India Fund	585.62	277.56
j)	Nabentures Fund I-Investment	369.66	-
		7,727.71	6,502.85

20.18 Other Non-Current Investment

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.

20.19 Contingent liability

- a) Liabilities for Suits filed against company is Nil
- b) with respect to AcE fund draw down request as per the agreement is yet to be received amounting to Rs. 37.22 crore.
- 20.20 The previous year's figures are reclassified and regrouped in accordance with the requirements applicable in the current financial year to make items comparable.

20.21 Relationship with MCA struck off companies

Relationship with	I MCA Struck off companies	(Rs.in Lakh)	
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
Erkadi Medical Systems Pvt. Limited	Other outstanding balances (nature to be specified such as Loan Portfolio, Grants Disbursed etc.)	38.91	Borrower



Annual Report

ω ^Ω ο	Particulars	Numerator	Denominator	Current Period	Previous Period	% Variance	Reason for Variance	
~	Current Ratio (no. of times)	Total Current Assets	Total Current Liabilities	1.56	01.16	35.13%	Depicts enhanced fund position	
2	Debt - Equity Ratio	Total Debt [Long term borrowings + Short term borrowings (including current maturities of long term borrowings)]	Equity	AN	NA	NA	Ч	
с	Debt Service Coverage Ratio (no. of times)	EBITDA	(Finance costs + Short term borrowings (including Current maturities of long term borrowings)	NA	NA	ΥN	ΥN	
4	Return on Equity Ratio (%)	Net Income (PAT)	Shareholder's Equity	6.51%	9.32%	-2.02%	depicts the profitability in relation to Equity	
S	Inventory Turnover Ratio (no. of times)	Cost of Goods Sold	Average Inventory	NA	NA	NA	ΝA	
9	Trade Receivables Turnover Ratio (no. of times)	Net Credit Sales	Average Accounts Receivable	AN	NA	NA	NA	
~	Trade Payables Turnover Ratio (no. of times)	Net Credit Purchases	Average Accounts Payable	AN	AN	ΝA	ΥA	
∞	Net Capital Turnover Ratio (no. of times)	Total Sales	Shareholder's Equity	3.87	6.47	-15.75%	Grant Utilisation	
6	Net Profit Ratio (%)	Net Profit	Net Sales	1.68%	1.44%	16.29%	Increase in profit	
10	Return on Capital Employed (%)	EBIT	Capital Employed	6.51%	9.32%	-2.02%	depicts the profitability in relation to Equity	
7	Return on investment (%)*	Net Profit	Cost of Investment	AN	AN	AN	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 ratio has not been calculated.





20.23 List of Abbreviations used in Financial Statement:

S.No.	Abbreviation	Description
1	BIRAC	Biotechnology Industry Research Assistance Council
2	AcE Fund	Accelerating Entrepreneurs
3	ACT	All Children Thriving
4	AgNu	Agriculture-Nutrition Projects
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	CRS	Contract Research Scheme
12	DBT	Department of Biotechnology, Ministry of Science & Technology, Government of India
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 Programme
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 (Earlier termed as Industry and Manufacturing (I&M) Sector)
31	RTTC	Reinvent the Toilet Challenge
32	SBI	State Bank of India





S.No.	Abbreviation	Description
33	SBIRI	Small Business Innovation Research Initiative
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	Coalition for Epidemic preparedness Innovative
40	GBI	Global Bio India
41	MSME	Ministry of Micro, Small and Medium Enterprises

Auditors Report

As per our report of even date attached For LUNAWAT & Co.

Chartered Accountants Firm Reg.No. 000629N

Sd/-

CA. Ramesh K. Bhatia (Partner) Membership No.080160

Place : New Delhi Date : 17th July, 2023

For and on behalf of Board of Directors

Sd/-	Sd/-	Sd/-
Kavita Anandani	FCA Ms. Nidhi Shrivastava	Dr. J
Company Secretary	Director Finance	Man
	DIN 09436809	DIN

Dr. Jitendra Kumar Managing Director DIN 07017109




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, 2023.

The preparation of financial statements of the BIOTECHNOLOGY INDUSTRY RESEARCH ASSISTANCE COUNCIL for the year ended 31 March 2023 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 143 of 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 **17.07.2023**.

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 2023 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 auditors and is limited primarily to inquiries of the statutory auditors and company 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

Place : New Delhi Date : 15th September, 2023 -/Sd/-Gurveen Sidhu Director General of Audit (Environment & Scientific Department)





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 11th Annual General Meeting of the Company held on Wednesday, 27th September 2023 at 3.20 p.m. at Department of Biotechnology, 2, CGO Complex, 7th Floor, Lodhi Road, New Delhi-110003.

.....

Member's/Proxy's Signature





BIOTECHNOLOGY INDUSTRY RESEARCH ASSISTANCE COUNCIL

CIN: U73100DL2012NPL233152

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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) ofshares of the above named Company, hereby appoint:

E-mail ID:.....

as my / our proxy to attend and vote (on a poll) for me on my/our behalf at the 11th Annual General Meeting of the Company held on 27th September, 2023 at Department of Biotechnology 2, CGO Complex 7th Floor, 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 st , 2023 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 2023-24, in terms of provisions of Section 139(5) read with Section 142 of the Companies Act, 2013		
			

Signed this 22nd day of September, 2023

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.

Affix

Revenue

Stamp

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.

^{1.} Name:.....Address:











NOTES











Biotechnology Industry Research Assistance Council

Central Public Sector Enterprise (CPSE) Under Department of Biotechnology (DBT) Ministry of Science and 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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