birac
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BIRAC's Support to Startup Ecosystem in the Country

PREFACE

Department of Biotechnology (DBT) had set up Biotechnology Industry Research Assistance Council (BIRAC), a not-for-profit, section 8, public sector enterprise in 2012. This is mandated to act as an interface agency to strengthen and empower the emerging Biotech enterprises to undertake strategic research & innovation, translating knowledge into technology led affordable and globally competent product development, addressing unmet needs.

BIRAC 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 ignite young minds of individual entrepreneurs, startups and facilitate innovation excellence for the biotech startups and large companies. BIRAC's programs and schemes are dedicated to cater to Biotechnology sector which inherently requires long gestation period, specialized capex intensive infrastructure, high end advanced equipments, complex regulatory compliances, certifications, IP & technology management, differential business strategies, mentorship, and networking opportunities for scale up & commercialization.

BIRAC has a rich strategic partnerships network of national and global stakeholders creating opportunities to collaborate and deliver the salient features of its mandate. Since inception, BIRAC has seeded networks and platforms that help to bridge the existing gaps in the industry-academia Innovation research

To facilitate novel, high quality affordable products development through cutting edge technologies.

Biotechnology is recognized as the sunshine sector for India and BIRAC is strategically poised to catalyse an exponential sectoral growth in the next decade. In its nine years of existence, BIRAC has been able to nurture and inculcate a biotech entrepreneurship culture in the country, mobilizing talent from across the country – 5000+ biotech startups seeded in country; creating common access infrastructure – 60 world class BioNEST Bioincubators serving 1500+ physical incubatees; pre-incubation centres – 10 E-YUVA and social innovation centres – 16 SPARSH centres. The Innovation and Start up support has today resulted in more than 1000 patents filed, and noticeably 700+ Products & Technologies reaching commercialisation.

BIRAC's schemes and programmes are also well aligned with the goals of the national missions including Startup India, Make In India, Atmanirbhar Bharat, Swach Bharat, Ayushman Bharat, Digital India, others. There is a dedicated Biotechnology Make in India Facilitation Cell established. New impact initiatives viz., Project Development Cell, Investment Clearance Cell, setting up Technology Clusters, investment facilitation, strategic policy inputs & global outreach that are essential to take the Startup Ecosystem to next level, are underway.

The Impact Booklet gives an overview showing that the transformational journey of India's biotech startup ecosystem is reassuring an exponential future growth.

MESSAGE

Dr. Jitendra Singh

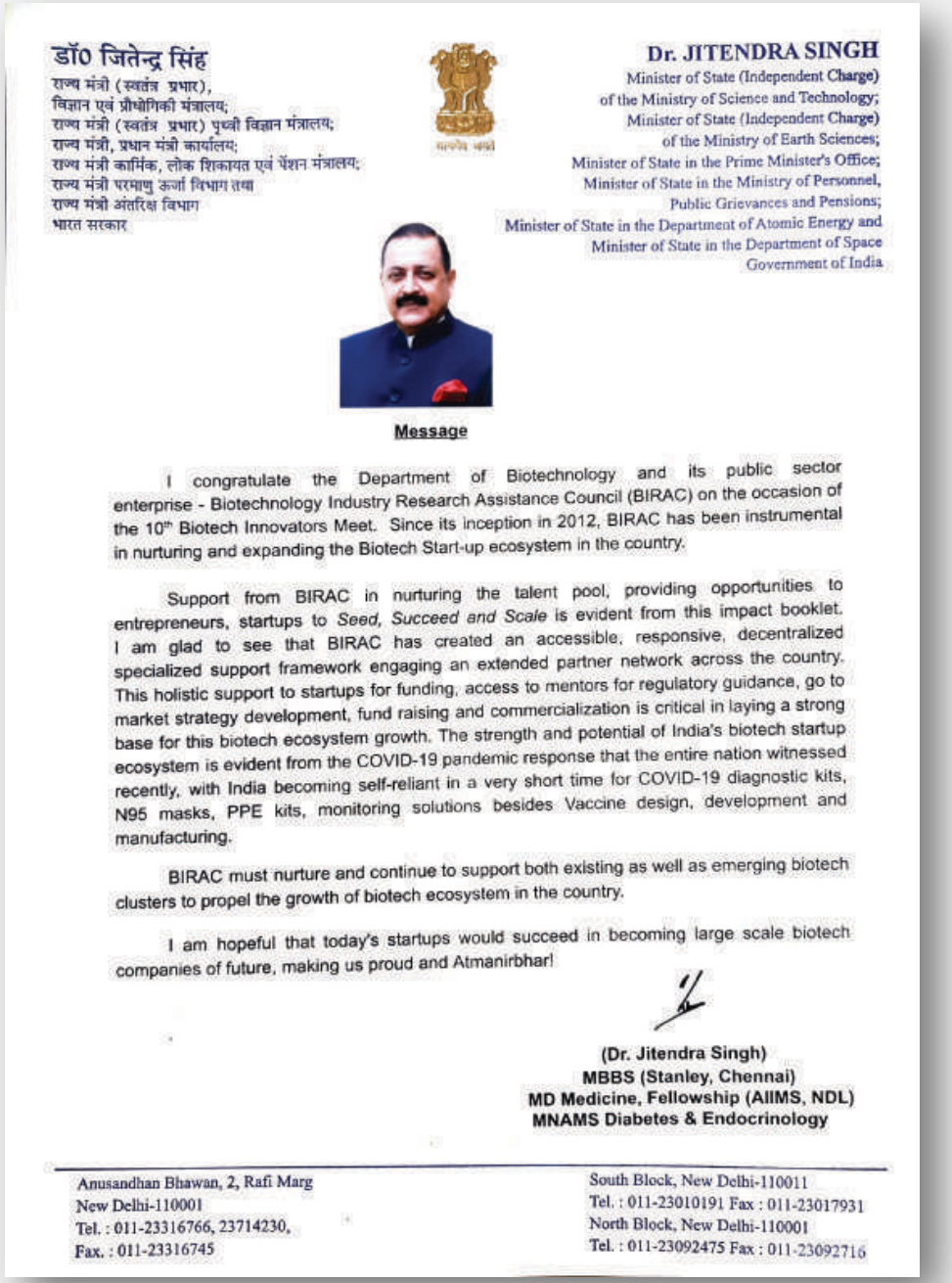
Minister of State (Independent Charge) of the Ministry of Science & Technology;

Minister of State (Independent Charge) of the Ministry of Earth Sciences;

Minister of State in the Prime Minister's Office;

Minister of State in the Ministry of Personnel, Personal Grievances and Pensions;

Minister of State in the Department of Atomic Energy and Ministry of State in the Department of Space Government of India



डॉ0 जितेन्द्र सिंह
राज्य मंत्री (स्वतंत्र प्रभार),
विज्ञान एवं प्रौधोगिकी मंत्रालय;
राज्य मंत्री (स्वतंत्र प्रभार) पृथ्वी विज्ञान मंत्रालय;
राज्य मंत्री, प्रधान मंत्री कार्यालय;
राज्य मंत्री कार्मिक, लोक शिकायत एवं पेंशन मंत्रालय;
राज्य मंत्री परमाणु ऊर्जा विभाग तथा
राज्य मंत्री अंतरिक्ष विभाग
भारत सरकार

Dr. JITENDRA SINGH
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Minister of State in the Prime Minister's Office;
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Minister of State in the Department of Atomic Energy and
Minister of State in the Department of Space
Government of India

Message

I congratulate the Department of Biotechnology and its public sector enterprise - Biotechnology Industry Research Assistance Council (BIRAC) on the occasion of the 10th Biotech Innovators Meet. Since its inception in 2012, BIRAC has been instrumental in nurturing and expanding the Biotech Start-up ecosystem in the country.

Support from BIRAC in nurturing the talent pool, providing opportunities to entrepreneurs, startups to *Seed, Succeed and Scale* is evident from this impact booklet. I am glad to see that BIRAC has created an accessible, responsive, decentralized specialized support framework engaging an extended partner network across the country. This holistic support to startups for funding, access to mentors for regulatory guidance, go to market strategy development, fund raising and commercialization is critical in laying a strong base for this biotech ecosystem growth. The strength and potential of India's biotech startup ecosystem is evident from the COVID-19 pandemic response that the entire nation witnessed recently, with India becoming self-reliant in a very short time for COVID-19 diagnostic kits, N95 masks, PPE kits, monitoring solutions besides Vaccine design, development and manufacturing.

BIRAC must nurture and continue to support both existing as well as emerging biotech clusters to propel the growth of biotech ecosystem in the country.

I am hopeful that today's startups would succeed in becoming large scale biotech companies of future, making us proud and Atmanirbhar!

(Dr. Jitendra Singh)
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Dr. Renu Swarup

Secretary Department of Biotechnology,
Chairperson BIRAC

MESSAGE

Biotechnology plays a critical role in multiple facets related to generation of products, processes and technologies for enhanced efficiency, productivity and cost-effectiveness in the areas of affordable health care and wellness; agriculture; food and nutritional security; environmental safety; clean energy; and biofuel. India is currently preparing for a quantum leap in biotech innovation, bio-manufacturing & bio-services, facilitated by favourable Government policies and an enabling framework converging through national mission programs including Make in India, Start-up India, Atma Nirbhar Bharat, Ayushman Bharat, Swach Bharat, Digital Health Mission.

BIRAC has taken up a multitude of activities from financing high risk research supporting nascent ideas, creating bioincubators as shared infrastructure to policy advocacy and empowering the biotech enterprise base in the country. BIRAC has remained nimble to adapt to the evolving requirements of the innovation ecosystem. This is reflected in the stage specific customized schemes and programs that have been added in sync with the evolving requirements of the innovation ecosystem. It has truly acted as a catalyst to spur significant growth in the last 10 years.

Biotech sector is recognized as a sunshine sector. The biotech industry has grown more than seven fold in the last decade. There has been a noticeable growth in Biotech Startup numbers as well that have grown 100x i.e., from 50 startups in 2012 to around 5000 in 2021. BIRAC's specialized bioincubation network has also grown 10x i.e., from 6 incubators in 2012 to 60 in 2021. Startups incubated at these centres have created intellectual wealth as reflected in more than 1000 patents filed and about 600 patents already granted. The success of Biotech sector in securing patents also contributes to India's performance at the Global Innovation Index published by WIPO. India jumped from the 52nd rank to 46th rank between 2019 and 2021. BIRAC has been able to inculcate the culture of Biotech entrepreneurship across the country which is evident from the year on year increase in the number of applications received by BIRAC from across the country including tier 2, 3 cities. The above trends are improving and gaining impetus especially in the past few years.

I am certain that BIRAC as the strategic interface agency is well poised to contribute through its collaborative efforts with ecosystem partners and enabling stakeholders, for India to achieve the target of $150 billion BioEconomy by 2025, and emerge as Innovation Hub for India and the World.

CONTENTS

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BIRAC:

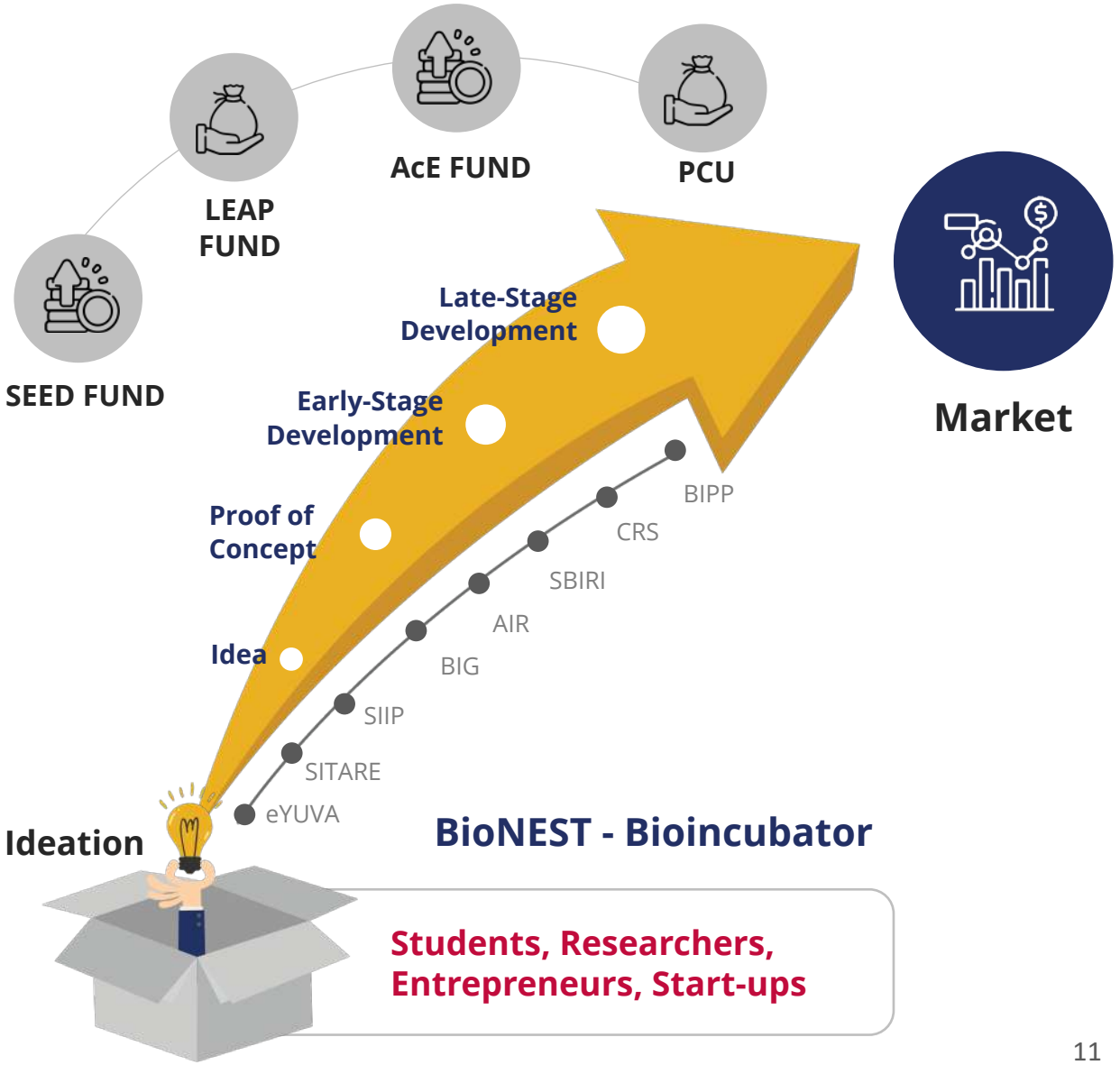
Strategies, Schemes and Driving Product Development

Biotechnology Industry Research Assistance Council (BIRAC) is a not-for-profit Section 8, Schedule B, Public Sector Enterprise, set up by the Department of Biotechnology (DBT), Government of India as an Interface Agency to strengthen and empower the emerging Biotech enterprise to undertake strategic research and innovation,while addressing nationally relevant unmet product development needs.

Some of the key objectives of BIRAC include:

- Foster innovation and Entrepreneurship
- Promote affordable innovation in key social sectors
- Empowerment of start-ups and SMEs
- Contribute in capacity enhancement and diffusion of innovation through partners
- Enable commercialization of discovery
- Facilitate global competitiveness of Indian Enterprises

The BioNEST-Bioincubator enables students, researchers, entrepreneurs and start-ups to materialise innovative ideas in the market realm. BIRAC supports multiple stages of driving product-development, including ideation and concept-development through initiatives such as eYUVA, SITARE, SIIP AND BIG. Other schemes such as AIR, SBIRI, CRS and BIPP support both early and later stages of product-development.



India's Bioeconomy

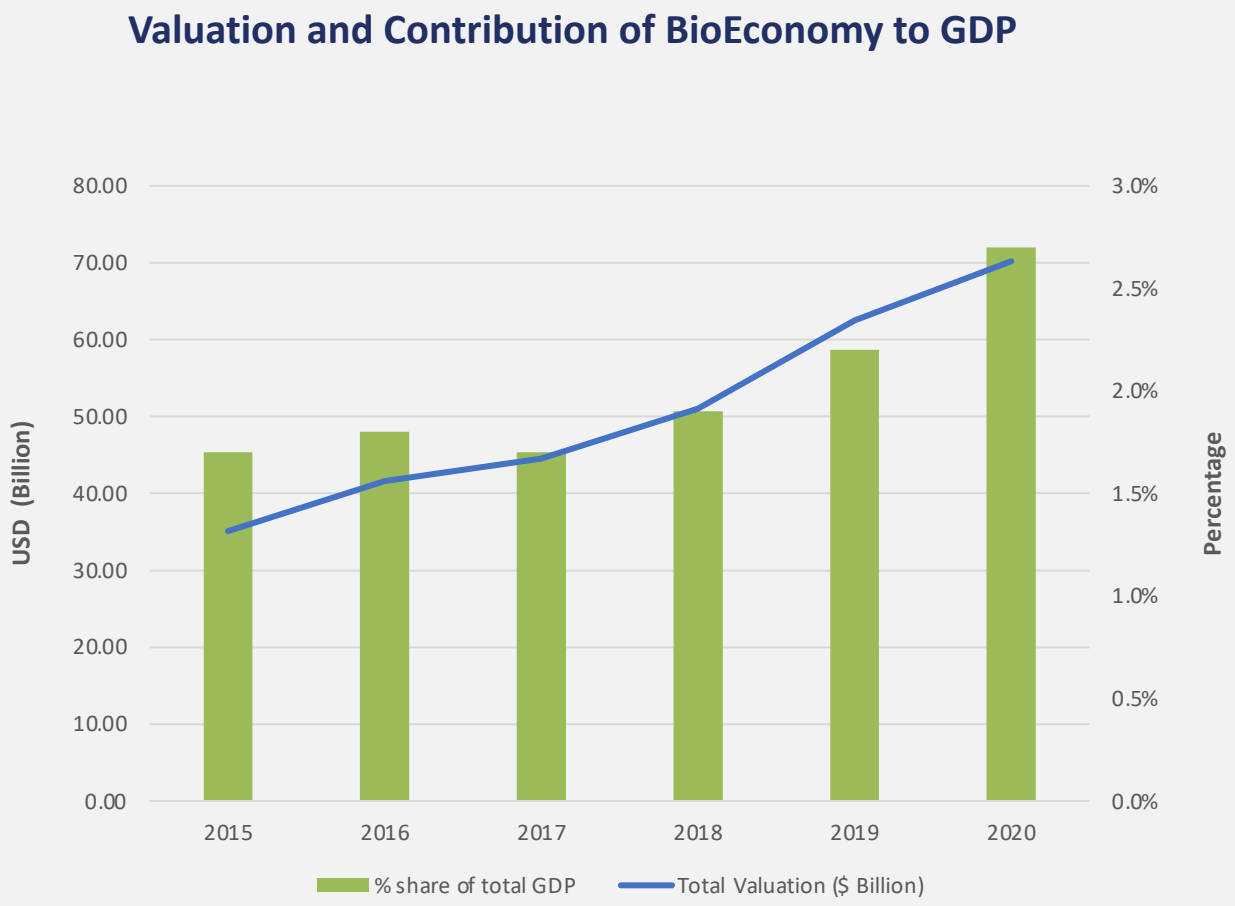
Outlook 2021

The COVID-19 pandemic has brought several challenges in the economic forefront. However, the biotechnology industry was able to convert these challenges into opportunities, through innovation-led entrepreneurship and a supportive start-up ecosystem. India's BioEconomy has seen a tremendous growth over the past few years, fueled by the exigencies created by the pandemic.

DBT- BIRAC's support mechanism to start-ups, researchers, entrepreneurs was able to strengthen innovation ecosystem, and foster collaboration between the government, biotech industry and the research ecosystem.

India's Bioeconomy Outlook 2021

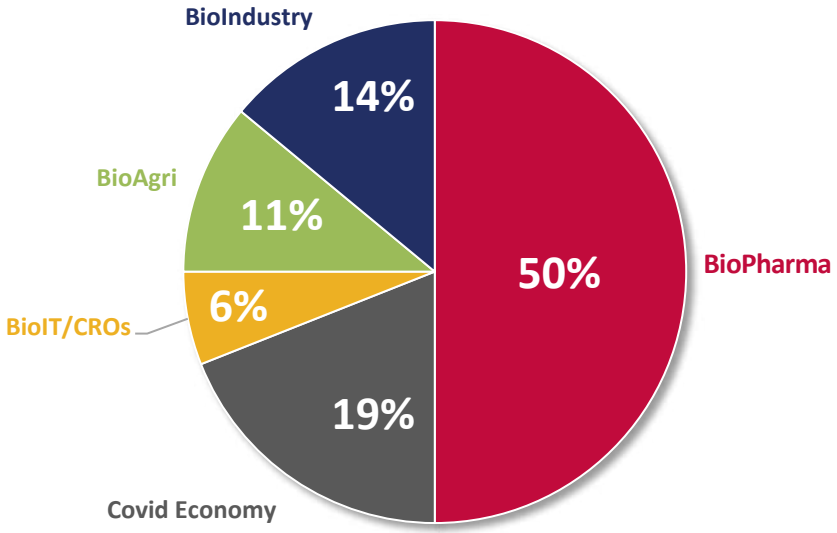
- The BioEconomy's contribution to the national GDP has also grown steadily in the past years. While the BioEconomy contributed to 1.7% of the GDP, this share has grown to 2.7% in 2020.
- The COVID-19 pandemic has added over $5 billion in value to the industry. This is marked by a 25% jump in the number of biotech start-ups.
- With 5000+ start-ups at present, India envisions a $150 billion BioEconomy by 2025, boosted through 10,000 biotech start-ups.
- The Indian Bioeconomy has observed a steady increase in its valuation over the past five-six years.
- The bioeconomy has observed almost a 95% increase in valuation over the period of five years, with the COVID-19 pandemic boosting it even further.
- In 2020, India's BioEconomy stood at a valuation of $70.2 billion.



Source: ABLE IBER 2021

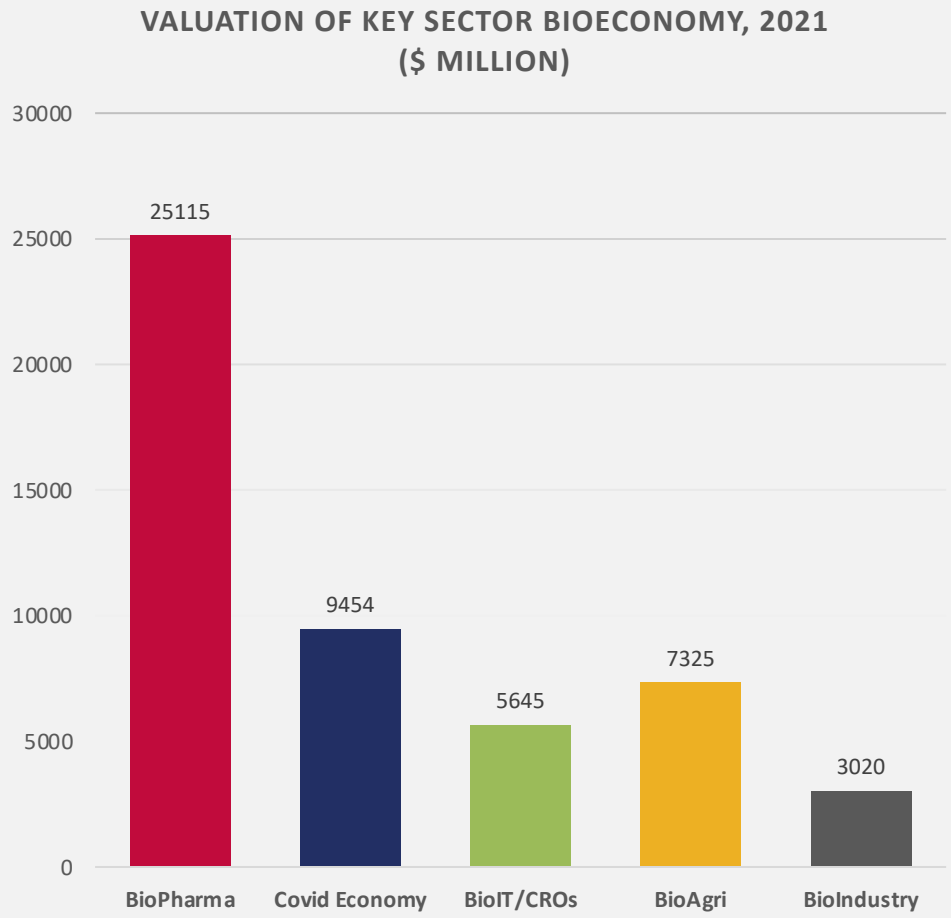
India's Bioeconomy Outlook 2021

Share of key sectors of Bioeconomy



01 The Indian BioEconomy combines several key segments of the economy that are strengthened by biotechnology, including agriculture, industry, information and technology, and pharmaceuticals.

02 India's BioEconomy is expected to cross $50.56 Billion value in the first nine months of 2021, with BioPharmaceuticals and the Covid Economy playing a key role in this growth.



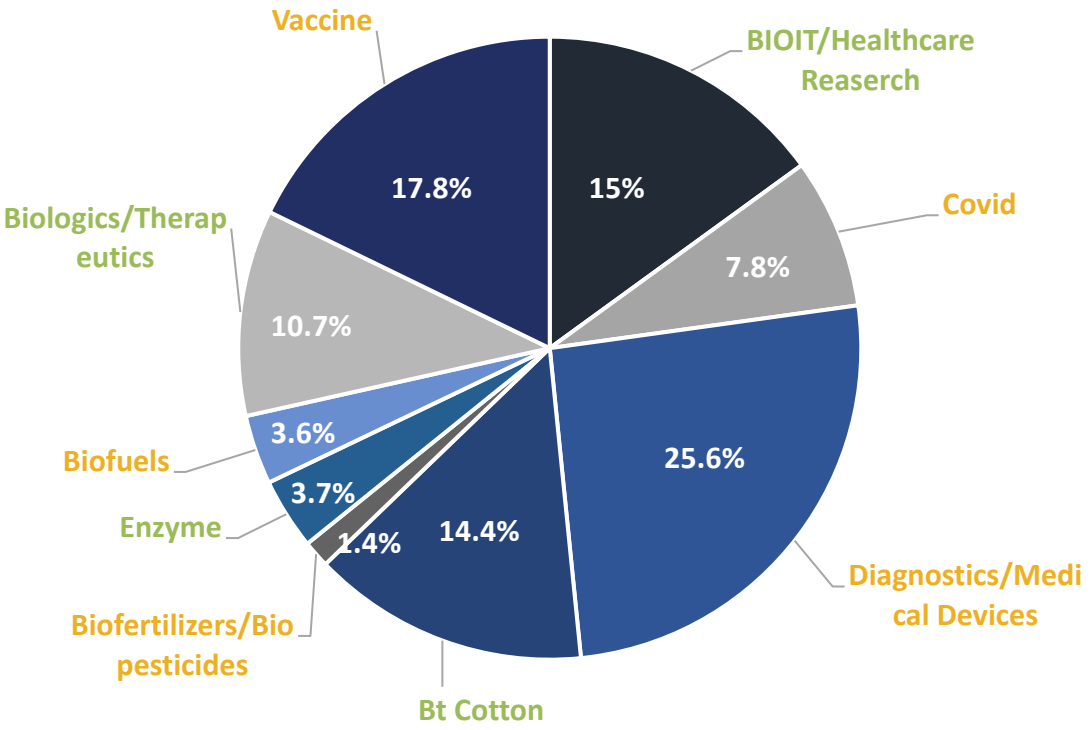
Source: ABLE IBER 2021

Key Observations From

Sub-segments Of Indian Bioeconomy

- COVID ECONOMY has contributed to nearly $9.45 Billion to Indian BioEconomy.
- Diagnostics and Medical devices segment accounted for nearly one-fourth of BioEconomy's value.
- The vaccines were the next big segment with 17.8 percent share.
- The Covid-19 related bioeconomic value created a 7.8 percent piece of the total BioEconomy pie.
- Bt cotton was one of the sub segments that got hit massively by the lock down as the textiles sector was affected by the economic slow-down.

Sub-segments to Indian BioEconomy

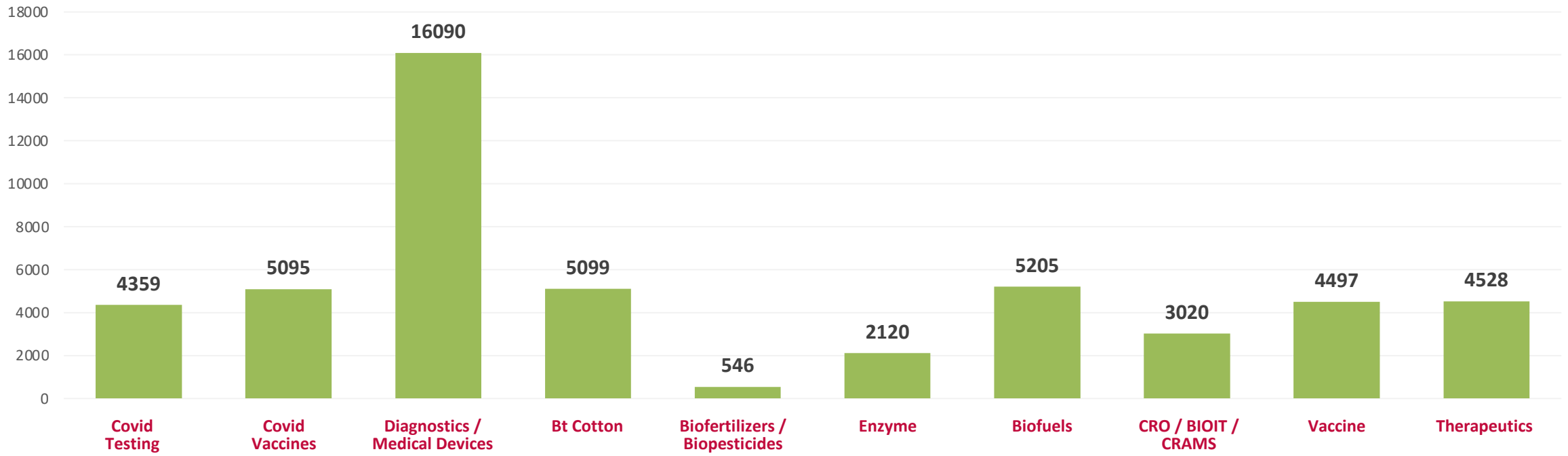


Source: ABLE IBER 2021

Key Observations From

Sub-segments Of Indian Bioeconomy

Contribution of each sub-segments in first 9 months of 2021 to BioEconomy ($ Million)



Source: ABLE IBER 2021

Projections for 2025

The projections for Indian Bioeconomy take account of multiple scenarios to realise its potential by 2025.

01 The vision of a $150 billion BioEconomy by 2025 can only be fostered through a **targeted and optimistic** scenario. TO achieve this goal, **a growth rate of 15-20%** is needed, along with additional support from the government and other stakeholders in the economy.

02 A **conservative estimate** puts the Bio Economy **grow rate to 7-12** percent between the years 2022 and 2025. This is determined by absence of conducive environment for growth, and lack of stimulus. A conservative growth will contribute $95- $115 billion to the economy.

SCENARIO	Pessimistic	Realistic	Optimistic	Targeted
	This is when things aren't moving and are at standstill	This is when it is business as usual condition	This is when conditions turn favorable	A scenario where the gravity needs to be defined to achieve the goals. This is a scenario where Government's support will be very much needed to break the barriers and leapfrog.
CAGR	7-10%	10-12%	13-15%	15-20%
December 2025 ($ Billion)	$100-115	$115-130	$130-145	$145-180

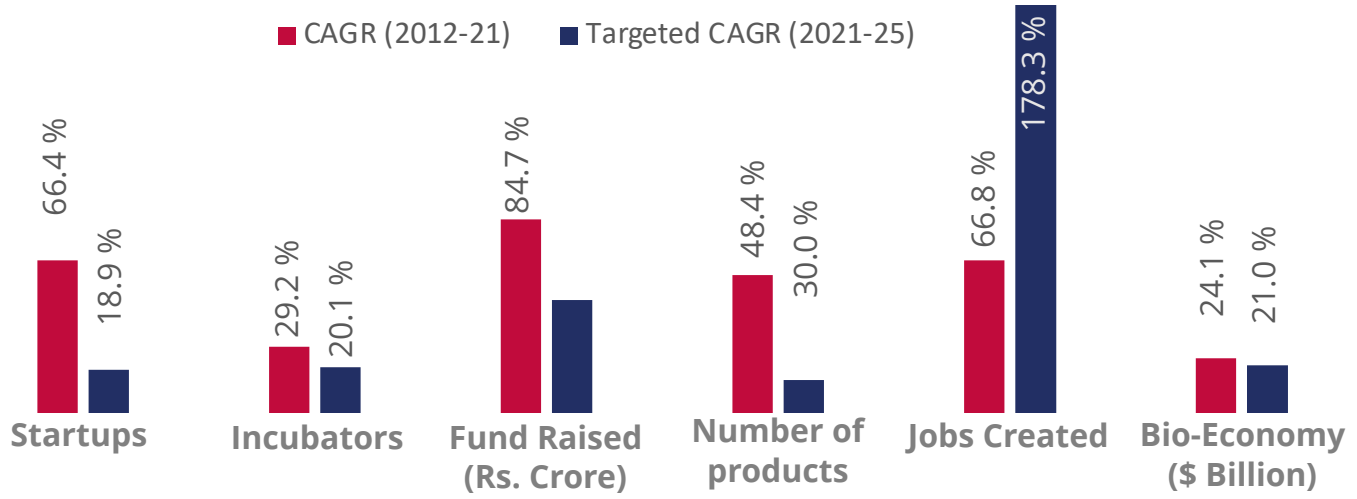
Source: IFC Projections (rounded off)

Indian Biotech Landscape

- Indian Biotech Industry has grown more than seven folds in last decade.
- Startups grown hundred folds and BIRAC Incubators ten folds.
- According to the Annual Survey of Industries, the average wages for total employees has increased by almost 4.72% annually.
- If the Income growth remains the same and there is a 60 times increase in jobs creation in the Biotech sector there would be a 72 times increase in Income generation. It would take annual generation of income from $61 million to $4.46 billion.

	2012	Multiplier	2021	Multiplier	2025 (Target)*
Startups	50	100x	5000	2x	10000
Incubators	6	10x	60	2x	125
Fund Raised (Rs. Crore)	10	250x	2500	5x*	12500*
Number of Products	10	70x	700	2x	1200
Jobs Created	250	100x	25000	60x	1500000
Bio-Economy ($ Billion)	10	7x	70	2x	150

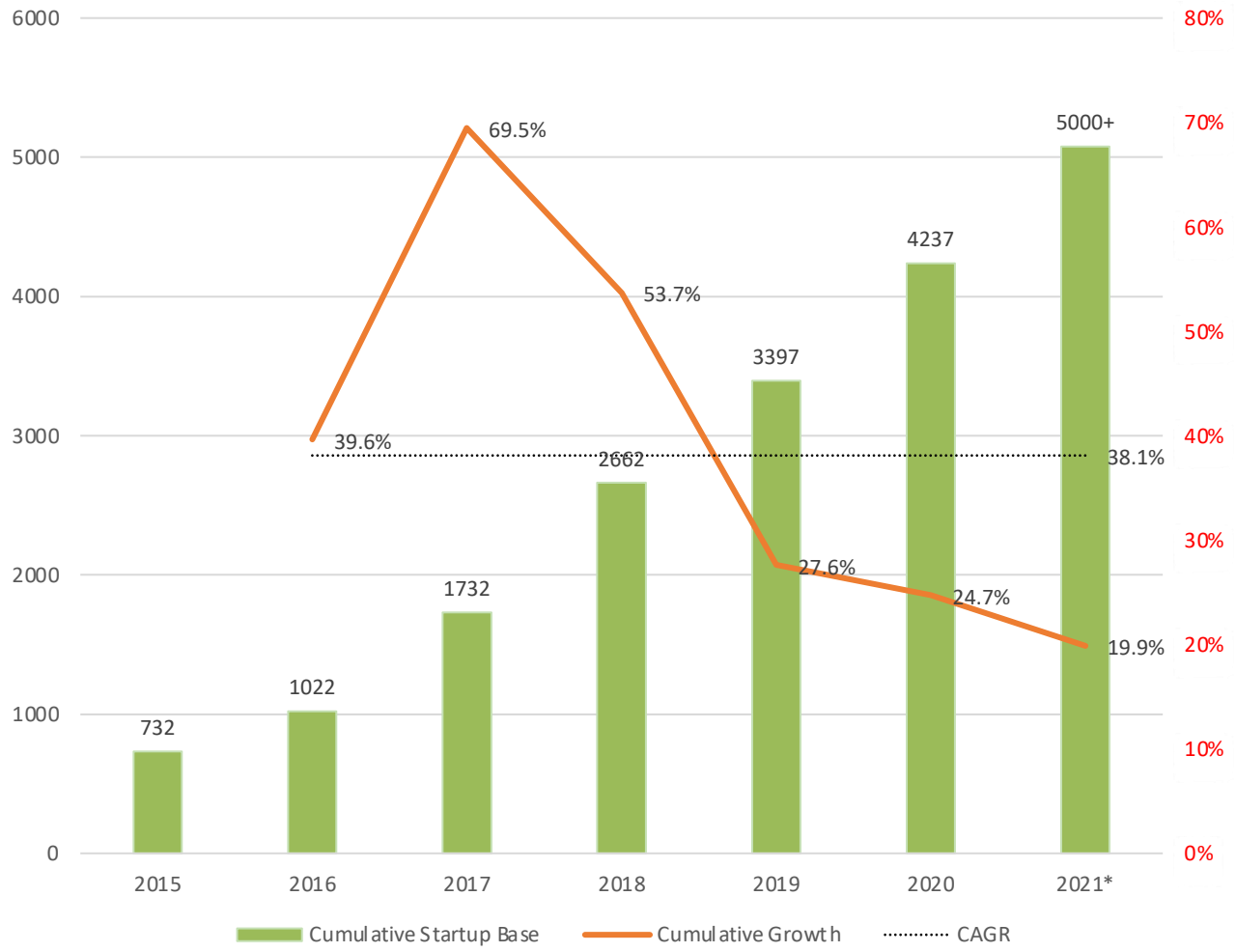
	2021	Multiplier	2025 (Target)*
Jobs Created	25000	60x	1500000
Income Generation ($)	61 Million	72x	4.46 Billion



*Projected figures

Biotech Startups

Flourishing in India



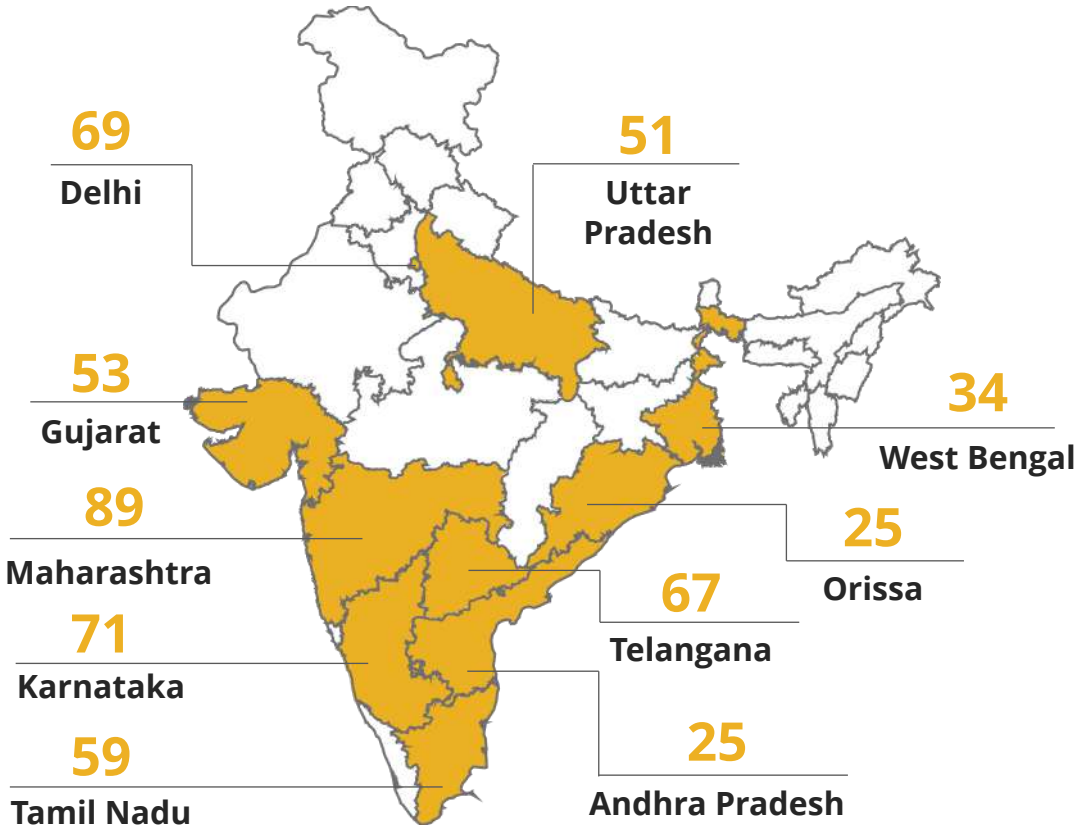
01 Biotech startups have grown annually at **38.1% CAGR** over last seven Years.

02 Year-on-Year growth of Startups peaking in 2017 with **69.5% growth**.

03 Even during the pandemic years **800+ new startups** added each year in 2020, 2021

SCALING INDIA'S START-UP ECOSYSTEM:

Maharashtra, Karnataka, and Delhi are Driving India's Start-up Ecosystem

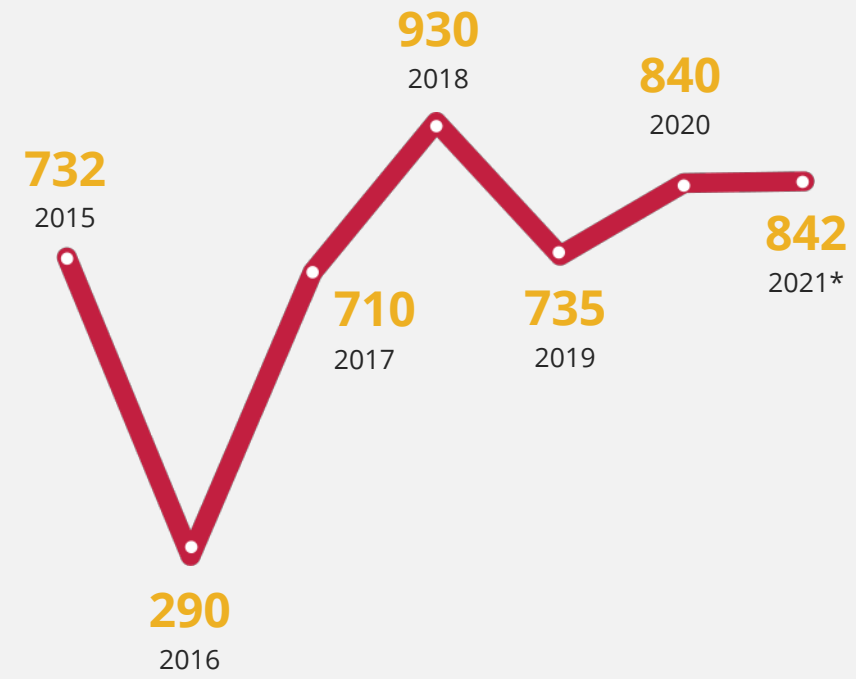


Total New Start-ups registered in 9-months, 2021 - 842

Maharashtra – 10.6%, Karnataka – 8.4%, Delhi (NCR) – 8.2%, Telangana – 8%, Uttar Pradesh – 6.1%, Tamil Nadu – 7%, Gujarat – 6.3%, West Bengal – 4%, Andhra Pradesh – 3%, Orissa – 3%, Others 35.5%

Source: ABLE IBER 2021

- The start-up ecosystem has seen a boost in the past five years, with the number of start-ups in India consistently rising from 2015 to 2021.
- Maharashtra had the highest number of registrations in India between January and September of 2021, followed by other states such as Karnataka, Delhi, Telangana, and Tamil Nadu. These states are pivotal in driving India's start-up ecosystem.



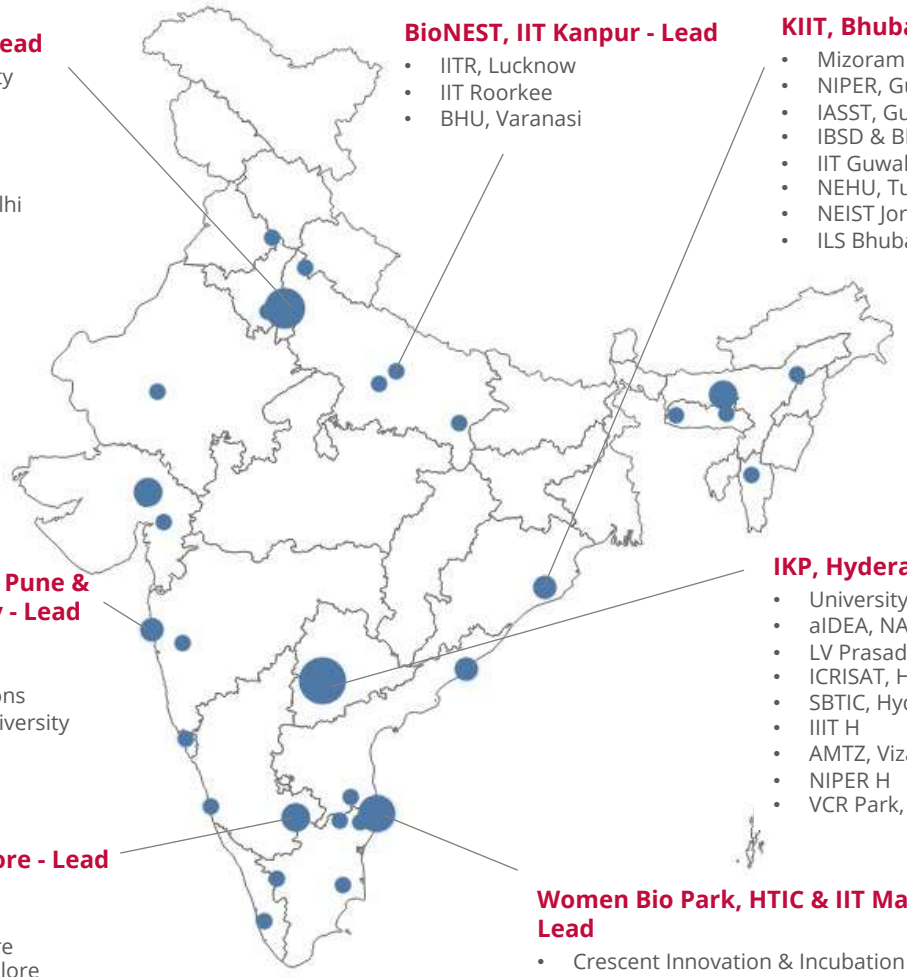
BIRAC's BioNEST network:

Propelling biotech startup ecosystem | Creating Pipeline of Incubatees

FITT, IIT Delhi - Lead
- Panjab University
- ZTM-BPD, IARI
- DPSRU, Delhi
- CEIIC, Delhi
- RCB, Faridabad
- University of Delhi
- Indigram Labs
- AIIMS Delhi
- IIT Jodhpur

BioNEST, IIT Kanpur - Lead
- IITR, Lucknow
- IIT Roorkee
- BHU, Varanasi

KIIT, Bhubaneswar - Lead
- Mizoram University
- NIPER, Guwahati
- IASST, Guwahati
- IBSD & BRDC
- IIT GuwahatI
- NEHU, Tura Campus
- NEIST Jorhat
- ILS Bhubaneswar



Venture Center, Pune & SINE-IIT Bombay - Lead
- GSBTM
- PERD Centre
- SRISTI Innovations
- Ahmedabad University
- BITS Pilani Goa
- RiiDL, Mumbai
- NIPER, Ahmd

IKP, Hyderabad - Lead
- University of Hyd
- aIDEA, NAARM, Hyd
- LV Prasad Eye Institute, Hyd
- ICRISAT, Hyderabad
- SBTIC, Hyderabad
- IIIT H
- AMTZ, Vizag
- NIPER H
- VCR Park, Vizag

C-CAMP, Bangalore - Lead
- IIHR, Bangalore
- BBC, Bangalore
- MSMF, Bangalore
- IKP Eden, Bangalore
- AJCE, Kottayam
- UAS Bangalore
- MAHE, Manipal

Women Bio Park, HTIC & IIT Madras- Lead
- Crescent Innovation & Incubation council
- VIT, Vellore
- SPMVV- Women Biotech Incubation facility
- SASTRA Tamil Nadu
- TANUVAS, Chennai
- SRIHER, Chennai
- PSG-STEP, Coimbatore

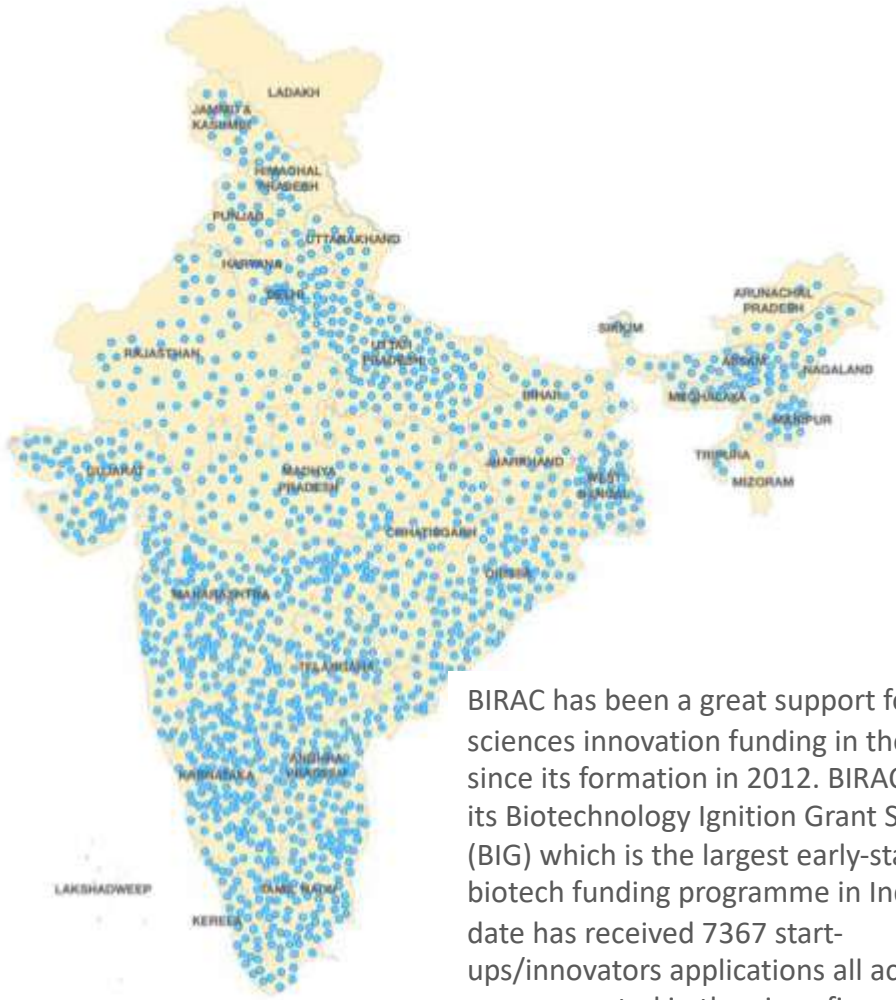
Biotech Startup Ecosystem

1500+ Incubatees	**60** BioNEST Incubators	**25000+** High-skilled
2500+ Trainings / Workshops / Seminars	**700+** Products / Technologies in market	**1,32,465** People benefitted through these events

Entrepreneurs PIPELINE for BioNEST incubators

10000+ BIG	**10000+** BIRAC Regional Centres	**15000+** BIRAC outreach events
3500+ SITARE	**250+** E-YUVA	**1,00,000+** Partners mediated sensitization workshops

Aspiring entrepreneurs spread across nation

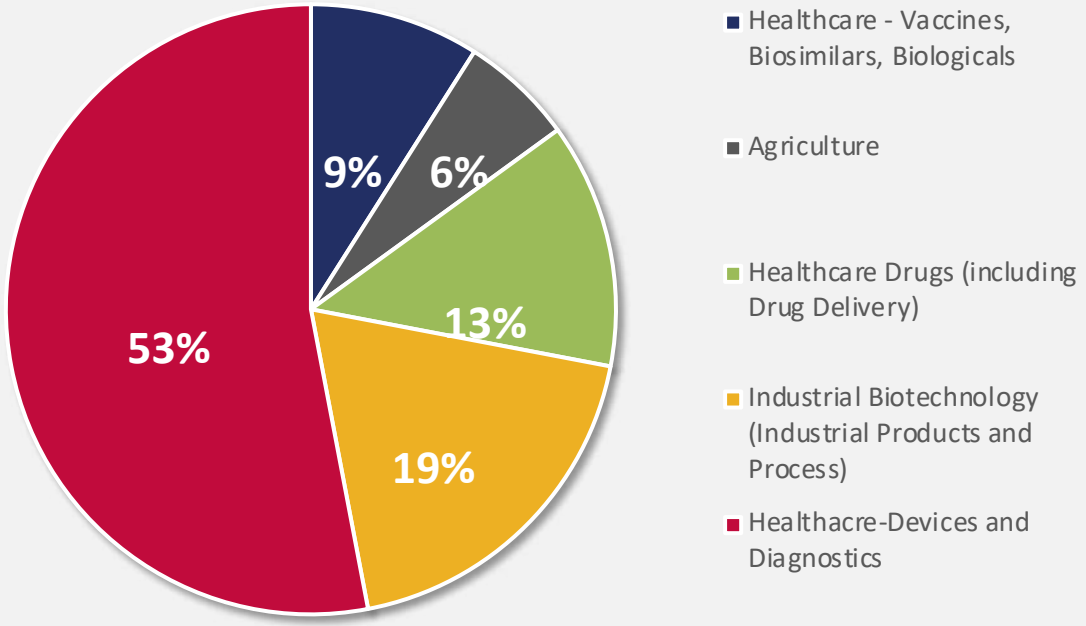


BIRAC has been a great support for life sciences innovation funding in the country since its formation in 2012. BIRAC through its Biotechnology Ignition Grant Scheme (BIG) which is the largest early-stage biotech funding programme in India till date has received 7367 start-ups/innovators applications all across India as represented in the given figure.

Proportional to inflow of applications

Male 75%

Female 25%

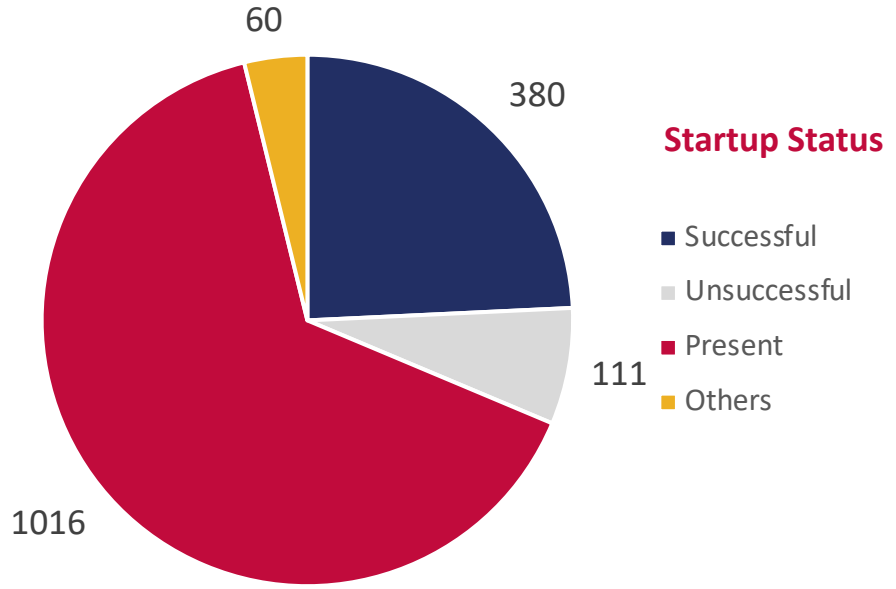


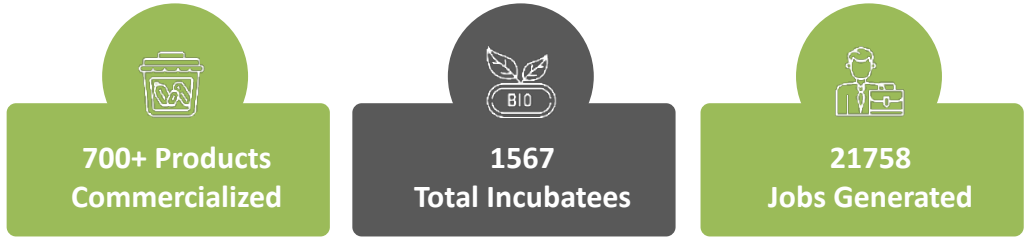
BIRAC inculcating a culture of biotech entrepreneurship

BioNEST Incubatee Status and Patents Generated

		Percentage of Total Startups
Total Incubatees	1567	-
Female Incubatees	418	26.7%
Startups in Revenue Generation Stage	444	28.3%
Startups with External Private Funding	374	23.9%
Start-ups moved Out of Country	25	1.6%

	Total	Average (per incubatee)
Market turnover of incubatee companies (Rs. Crore)	13143	8.38
Funds raised by incubatee companies (Rs. Crore)	49288	3.14





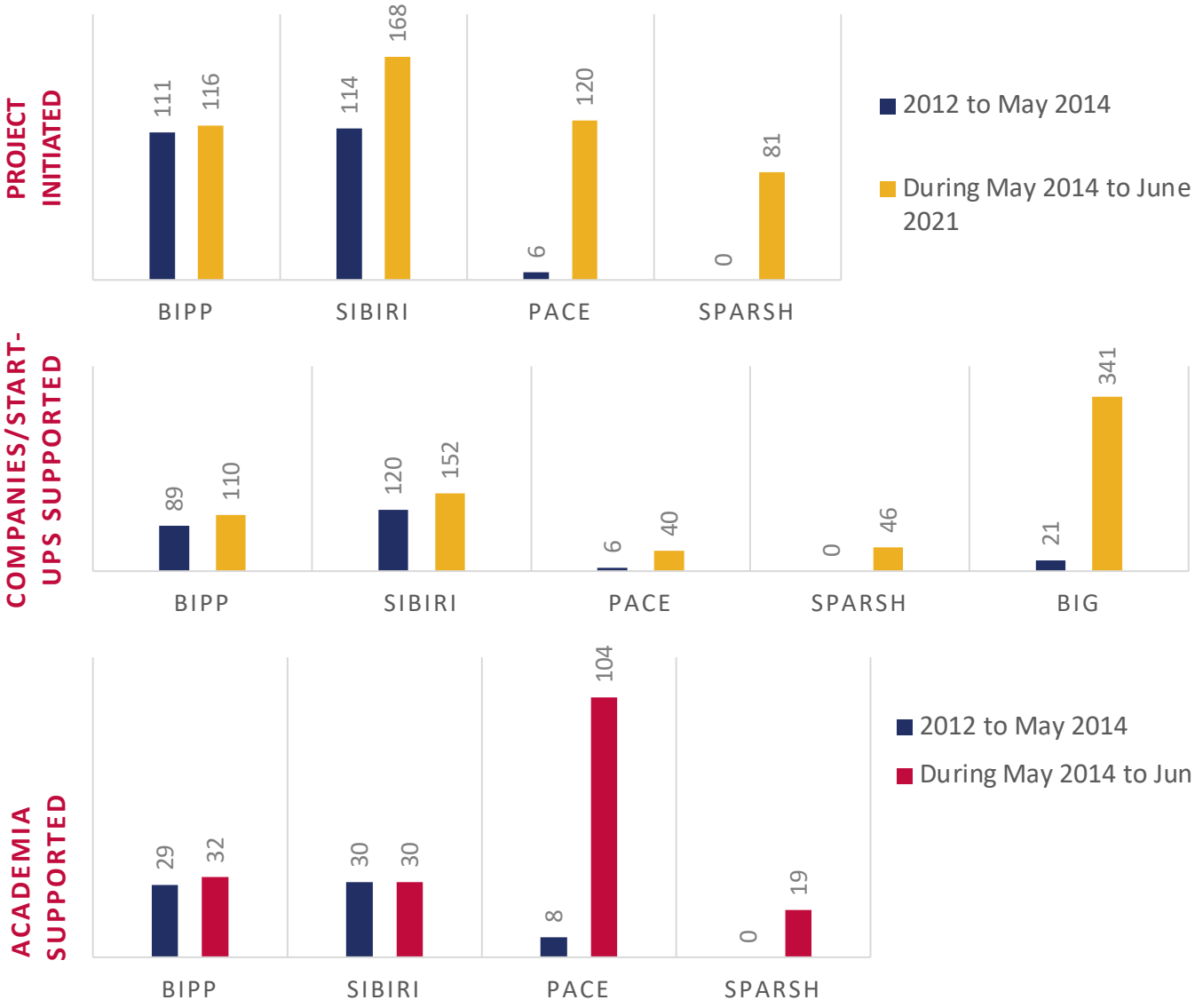
01 BIRAC through its BioNEST incubators has supported 1567 startups; out of which **24% percent startups graduated successfully.** 67% startups are at present housed at these centers.

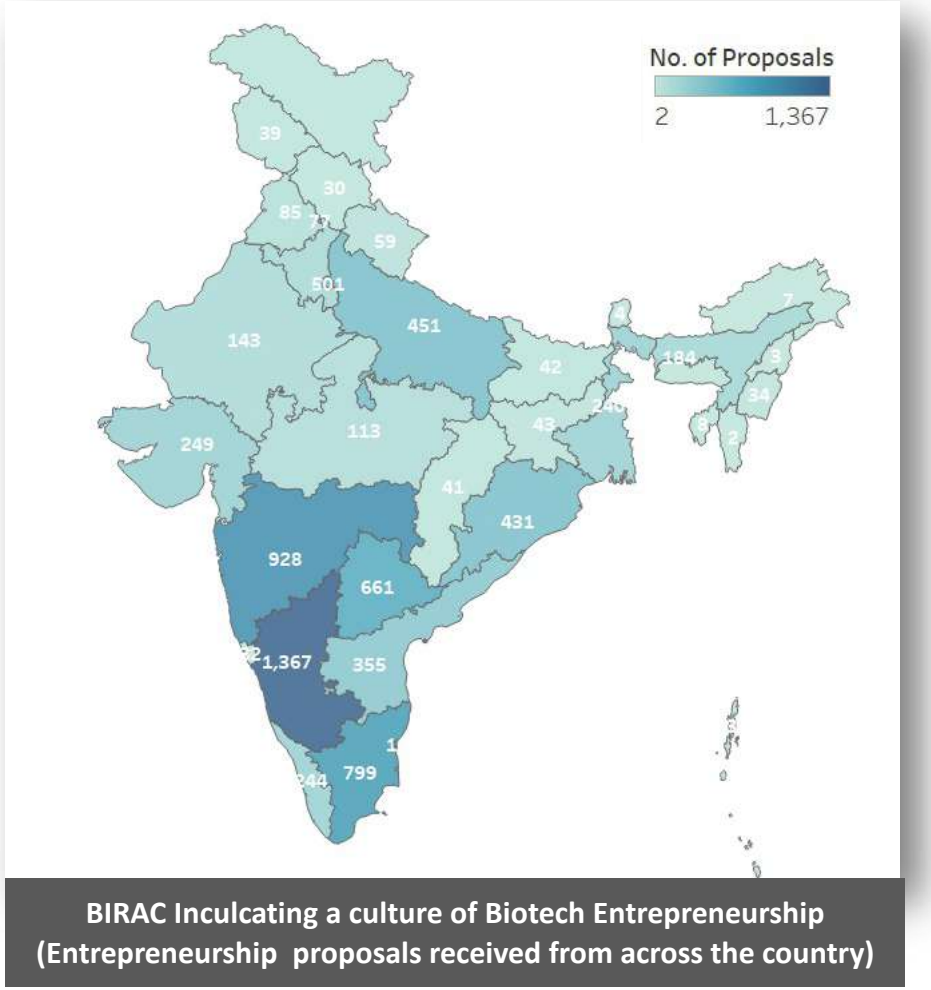
02 Startups incubated through the BioNEST incubators **have filed 1143 patents** out of which 603 have been granted.

03 Success of Biotech sector in securing patents also reflects in India's performance at Global Innovation Index published by WIPO**. India jumped from the rank of 52nd to 46th between 2019-21 period.**

04 BIRAC is driving gender diversity among entrepreneurs in India; with about **27% startups incubated are led by female founders / co-founders**

Scheme: Industrial and Entrepreneurship Development





BIRAC Inculcating a culture of Biotech Entrepreneurship (Entrepreneurship proposals received from across the country)

SCHEME:
Industrial and Entrepreneurship Development

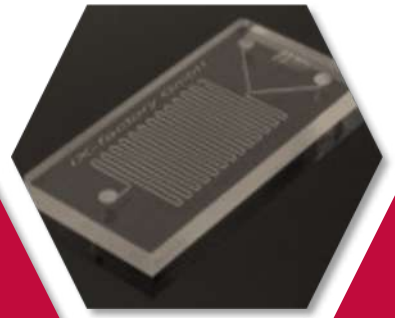
	Startup supported	BioNEST Incubators supported	Technology & products	Follow on Funding raised by Startups
2012 to May 2014	100+	12	<25	<25 cr
During May 2014 to June 2021	2500+	60	389	1489 cr

*Achievements both quantitative and qualitative in the form of support extended to Start ups, technologies developed, patents, publications, fellowships, awards, techniques and other tangible benefits rendered to public

MedTech Facilities Portfolio

C-CAMP

Microfluidics device prototyping



Yenepoya

Biological tissue printing and prototyping

IIT-Kanpur

Metal Prototyping and 3D printing

SAMEER

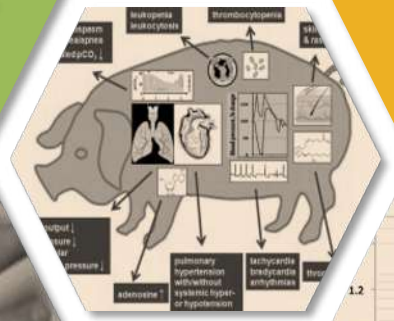
EMI/ EMC and Electrical Safety Testing

Netra

Plastics and metal prototyping for wearable devices

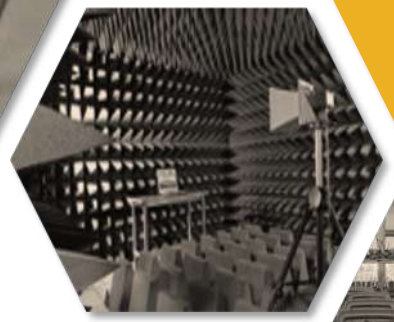
Palamur Bioscience

Porcine studies for medical devices



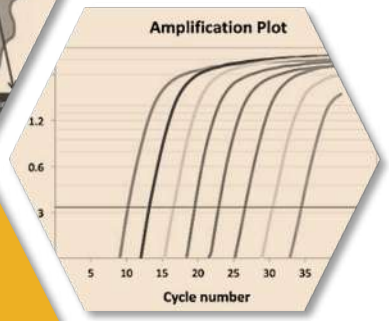
IIT-Kanpur

EMI/ EMC and Electrical Safety Testing



Huwel Lifesciences

Fluorescent primer/ probes



AMTZ CoMManD Consoritum

Medical Device Mfg. Facility

BIRAC supported Start-ups

Revenue

Companies with sale

> 50 Cr

Inactivated Japanese Encephalitis Vaccine (JEEV)- Biological E Limited

Rotavirus Vaccine (ROTAVAC) - Bharat Biotech International Limited

PTCA balloon catheters Sahajanand Medical Technologies Pvt. Ltd

> 10 Cr

Rasburicase – Tuly: Biosimilar to Rasburicase by Virchow Biotech Pvt Ltd

3nethra Neo: Neonatal Screening for Retinopathy of Prematurit by Forus Health Private Limited

AINA: Blood glucose, HbA1C, lipids, creatinine and Haemoglobin measuring device-Janacare Solutions Private Limited

BioUrja: Cost-Effective biogas solution

Accukine (Portable Compact Mobile Lab) by Accuster Technologies Private Limited

> 1-10 Cr

- Biosense Technologies Pvt. Ltd.
- Aristogene
- Scigenics Biotech Pvt. Ltd
- Vivira process technologies
- Nanoclean Global Pvt. Ltd.
- Dhiti lifesciences

- Fibroheal Woundcare Pvt Ltd
- Clensta
- Neurosynaptic communications
- Varuna Biocell
- AP Organics Pvt Ltd.

BIRAC supported Start-ups

Sectoral

Agritech

Bioprime Agri Solutions
Developing effective and affordable agri biologicals
Total sales: Rs. 3.4 Cr

Swasti Agro & Bioproducts
Swasti Agro is an Agri-Biotech startup that offers non toxic products for building disease resistance in crops and also an android application "Happy Group" for plant healthcare management

Urban Kisaan Hydroponics system
Selected for Y Combinator's winter 2020 batch. It has revenues of $1 million and has raised **$550,000.**

ATGC Biotech Pvt. Ltd
Development of a mating disruption product for management of pests

First-in-class Discoveries by Start Ups

Innaccel technologies Pvt Ltd.
(Earlier Coeo Labs Pvt Ltd)
VAPCare - an intelligent secretions and oral hygiene management systems to reduce chances of aspiration pneumonia in the patients who are on the ventilator for more than 48 hours

Hanugen Therapeutics Pvt Ltd
2O-methyl phosphothioate antisense oligonucleotide based exon skipping in patients with Duchenne Muscular Dystrophy (DMD) First of its kind in India

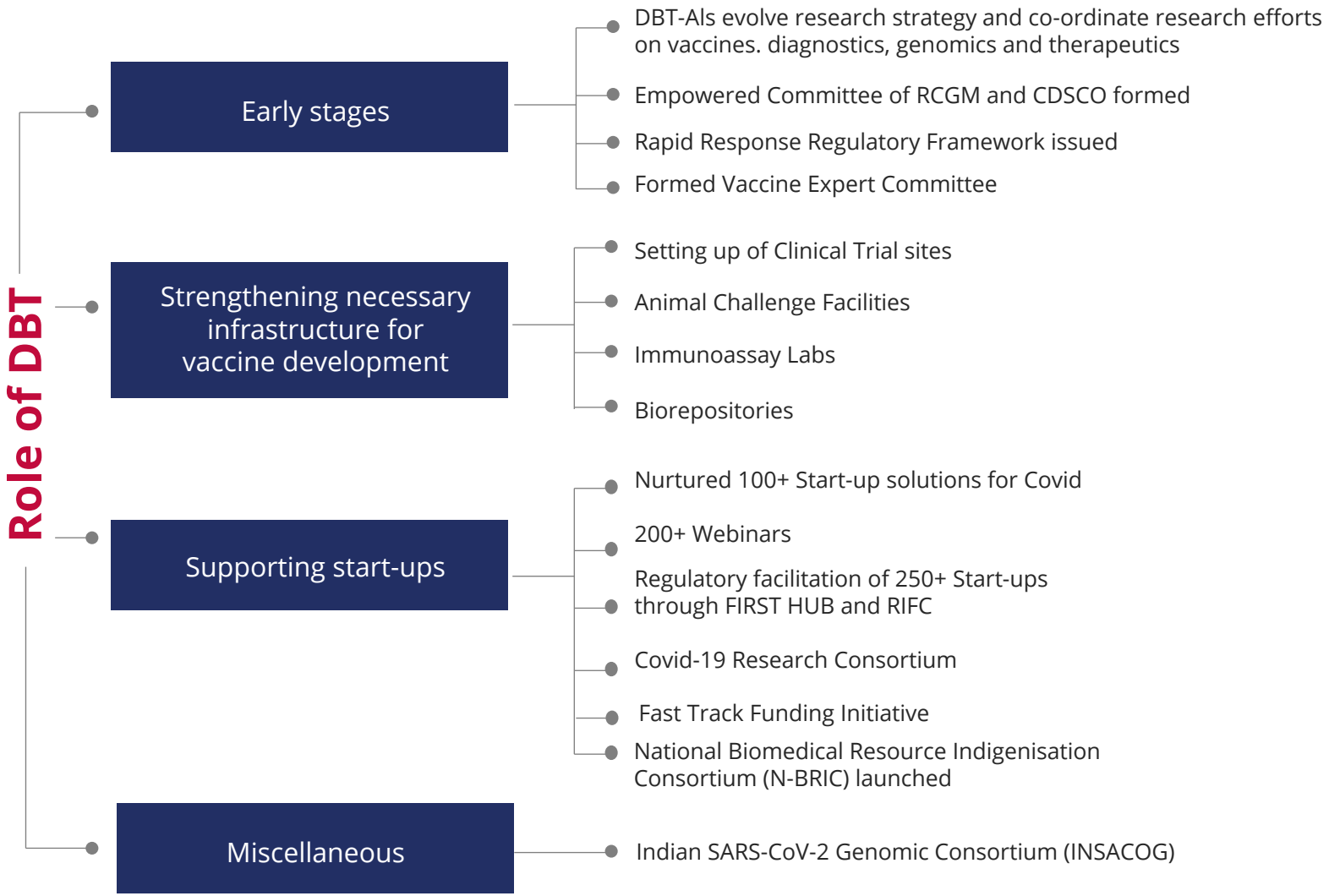
Aten Porus LifeSciences Pvt Ltd
First-in-Class Therapeutics for Niemann-Pick Type C Disorder, which is a rare, inherited, fatal disorder affecting lipid metabolism

Actorius Innovations and Research Pvt Ltd
OncoDiscover® Liquid Biopsy Technology

Pandorum Technologies Pvt. Ltd.
Proprietary technology platforms to design and manufacture functional human tissues

RESPONSE TO COVID-19:

Role of DBT and BIRAC



- The DBT took on an all-inclusive role to fulfill, ranging from facilitating research, streamlining regulation to enabling a supporting ecosystem as well as extending support to start-ups engaged in developing Covid solutions.
- DBT along with BIRAC also made accelerated efforts to facilitate regulatory support to start-ups through its FIRST HUB initiative. Since 3rd April 2020, representatives from ICMR, CDSCO, and other joined for special weekly sessions once a week to address the queries of start-up, wherein over 100 queries of the innovators and start-ups were handled. Regulatory facilitation of over 250 start-ups was also done through Facilitation of Innovation & Regulation for Start-ups and Innovators (FIRST) Hub and RIFC (Regulatory Information & Facilitations Centre) (DBT, 2021). *
- BIRAC solutions for In-Market Verticals ranged from diagnostic kits, ventilators, monitoring device, remote consultation, and PPEs to Vaccines and drug reporting.

***Source: IFC Analysis**

RESPONSE TO COVID-19

Through BIRAC Supported Start-ups, Academia and Industry

Initial Reach and Support

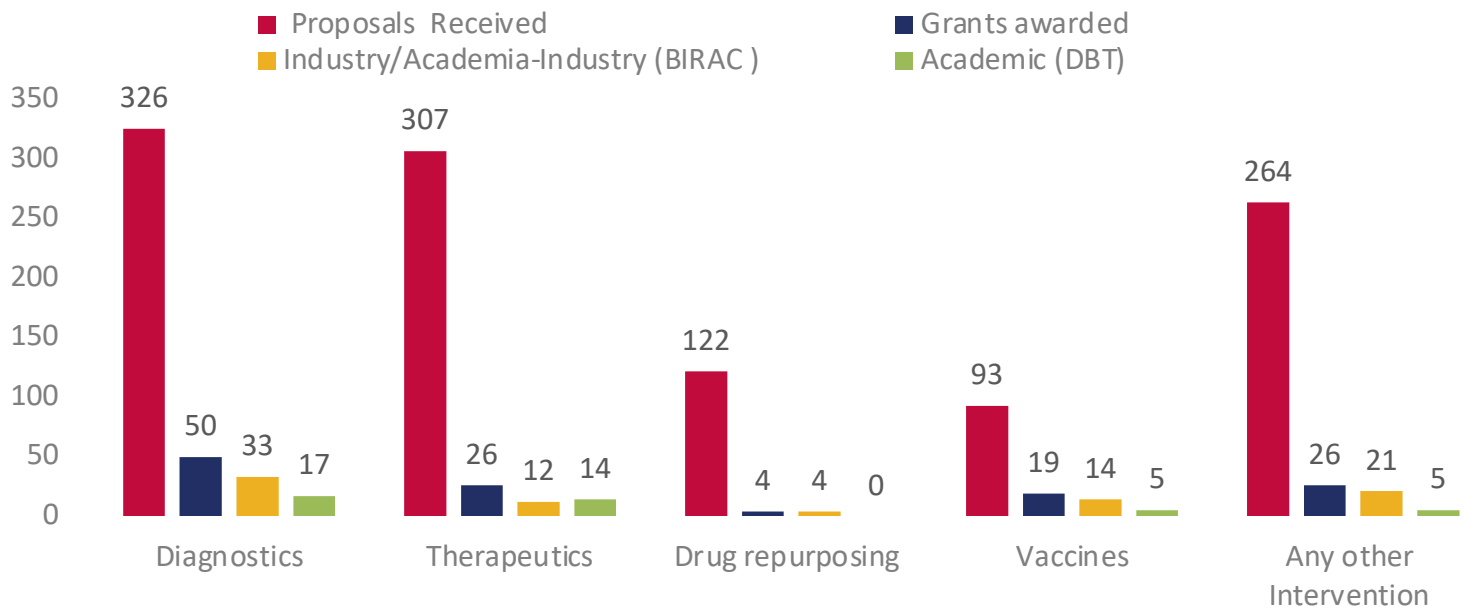
- Startup solutions for COVID 19 reached more than 130 markets
- More than 1000 Startup Solutions were Identified
- 3 New Funding Initiative for Covid was undertaken.

Extended Support

- Funding extended to more than 150+ beneficiaries.
- Regulatory Support extended to more than 200 start-ups.
- Network support provided for more than 100 start-ups.
- Over 250 webinars conducted.
- More than 2,600 start-ups benefitted from BIRAC's initiatives and support.

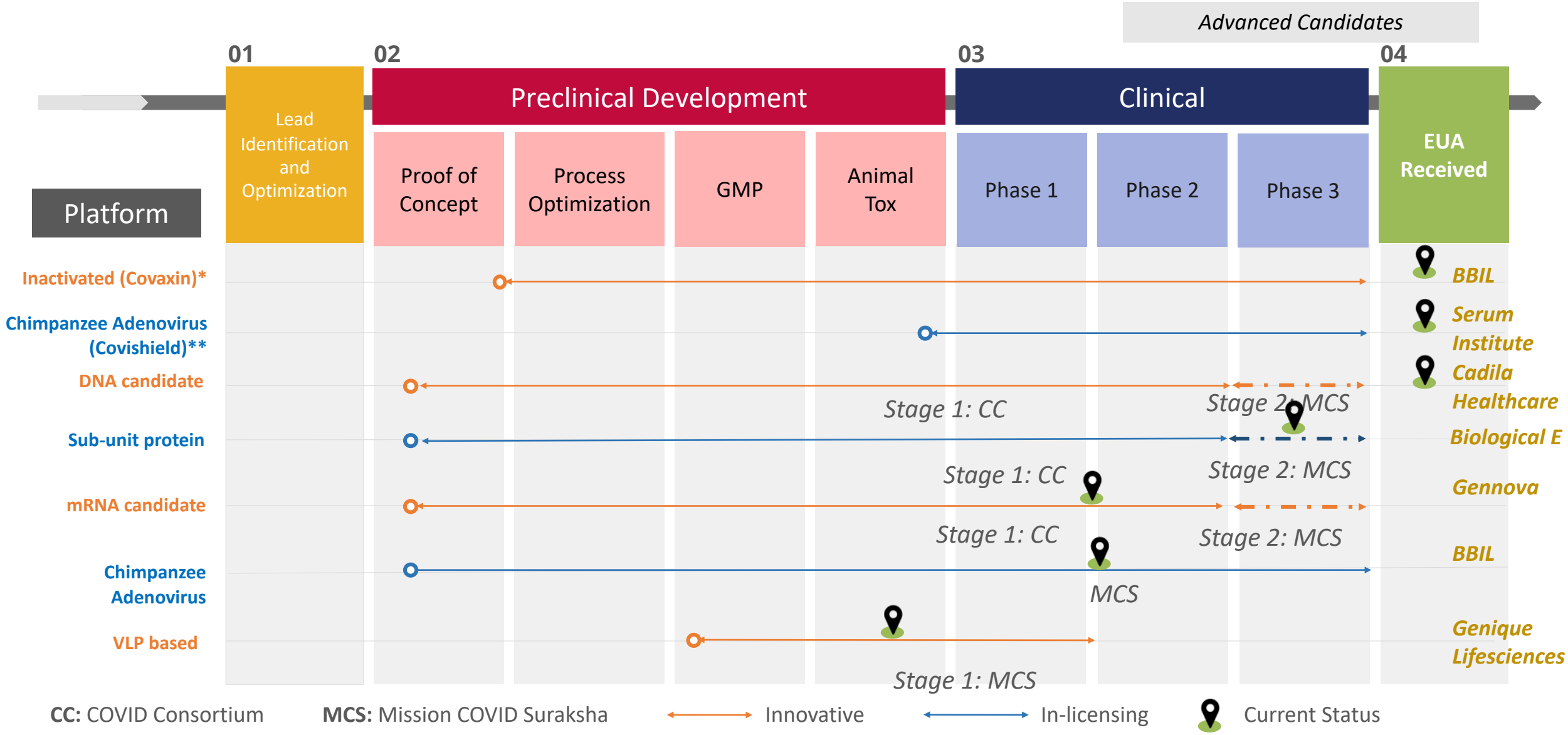
BIRAC has enabled a conducive business ecosystem by removing bottlenecks and improving regulatory practices that supports businesses. With the help of Network Support services, start-ups can retain and develop their productivity, while scaling their enterprises through better business networks.

Furthermore, **BIRAC's support to the research ecosystem** helped develop indigenous biomedical tools and insights that were paramount in the **prevention, identification and treatment of the COVID-19 pandemic**, thus paving the way for addressing challenges as a nation, through self-reliant solutions.



RESPONSE TO COVID-19

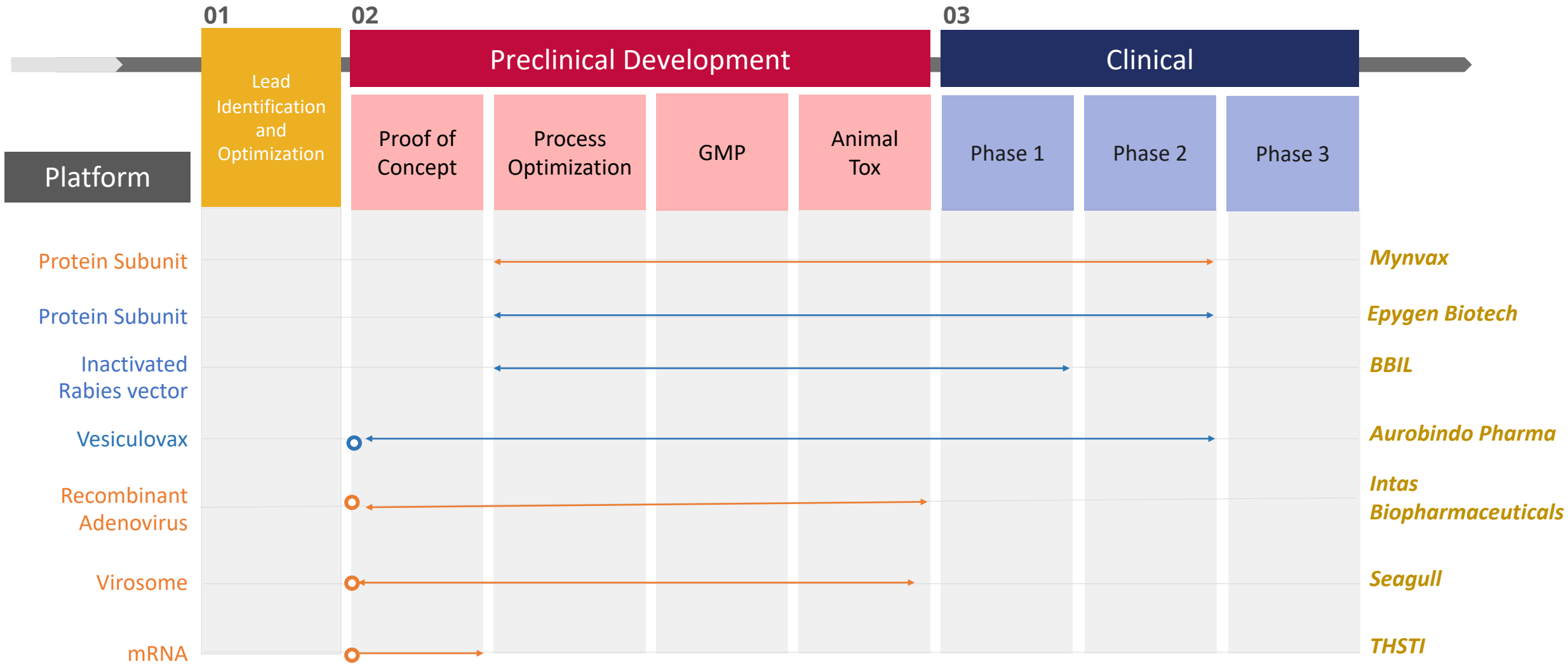
COVID Vaccines Portfolio



CC: COVID Consortium **MCS:** Mission COVID Suraksha Innovative In-licensing Current Status

*Supported by BIRAC for Manufacturing Augmentation **Supported by ICMR for Clinical Trial

COVID Vaccines Portfolio



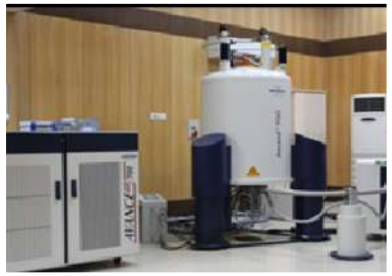
CC: COVID Consortium Innovative In-licensing

Biotherapeutic Facilities

Portfolio

Centre for Biopharma analysis (CBA)

High resolution mass spectrometry



Indian Institute of Chemical Technolgy, IICT

Higher order structural analysis

M.J. Biopharm Pvt. Ltd.

Microbial Platform cGMP manufacturing and PDL

Gennova Biopharmaceuticals limited

Mammalian Platform Process optimization and cGMP manufacturing

Syngene International Limited

Characterization
Physico-chemical cell

Institute of Microbial Technology, Chandigarh

Microbial cell line repository

Shilpa Medicare Limited

Mammalian platform cGMP manufacturing

National Centre for Cell Science, Pune.

Mammalian cell line repository

Medical Device Manufacturing Facilities

Facility

Ventilators

Kits Manufacturing

iLab

Probe Synthesis

NAE Kits

DBT-AMTZ National CoMManD Consortium

Common Manufacturing Facility

Mobile Diagnostic Laboratory - iLab

15,00 ventilators

0.2 million RT-PCR tests and 2 million Serology tests

Huwel Lifesciences

Fluorescent Probes for MDx kits

Products – VTM and NAE kits

Covid related BIRAC supported solutions- In-MARKET

DBT-AMTZ National CoMManD Consortium

- Common Manufacturing Facility
- 4500 basic and 1000 advanced ventilators manufactured
- 700 Lakhs RT PCR tests and 50 Lakh ELISA tests
- Mobile Diagnostic Laboratory - iLab

In-Market

- Diagnostic Kits
- Ventilators
- Monitoring Device
- Remote consultation
- PPEs
- VACCINES
- Drug Repurposing

Lateral flow test -Dhiti Life Sciences Pvt. Ltd

SENSIT Rapid COVID-19 Ag kit - Ubio Biotechnology Systems Pvt. Ltd.

PathoDetect-Mylabs Discovery Solutions Pvt Ltd

Automated RT-PCR machine – MyLab

Antigen, Antibody detection kits Ubio

Covid related BIRAC supported solutions

In Market

- Diagnostic Kits
- Ventilators
- Monitoring Device
- Remote consultation
- PPEs
- VACCINES
- Drug Repurposing

Suraksha Kit
by **Aarna Biomed**

Face Shields
Alpha Corpusles

Hybrid Multiply Face Mask
by **Parisodhana**

UpBeat
Monitra Healthcare

Hand Hygiene solution
MicroGo

Medical Oxygen Generators
Cistorn Systems

Specialty mobility healthcare platform with Clinical support
Ubiquare

Dozee
by **Turtle Shell**

Accurate TeleECG on mobile

Hand Cranked Defibrillator for Sudden Cardiac Arrest

Fetal Heart Rate Monitor

Hand Sanitizer for Public places

LungIQ: Precision Insights from Lung CTs

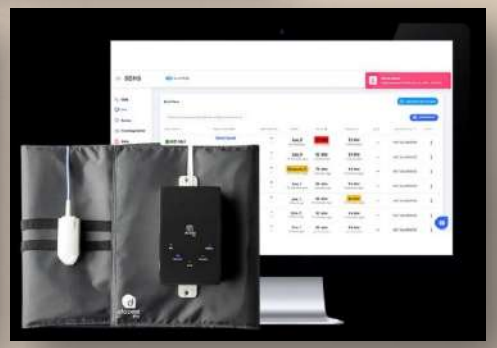
Point of Care Hand Held Multi-Analyte Diagnostic Device

Fetal Heart Rate Monitor

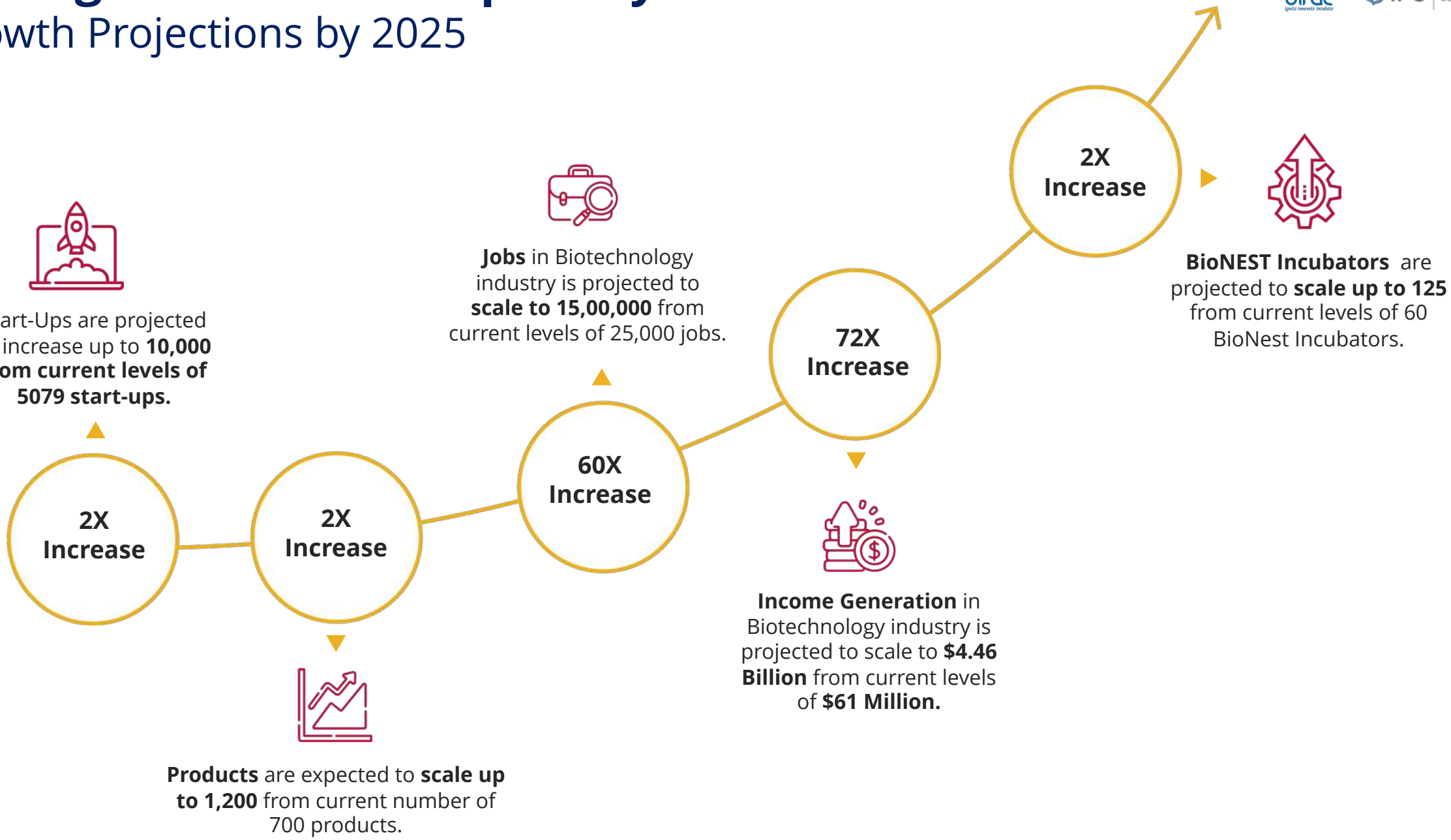
75+ test Portable Compact Mobile Lab and La-bike

Automated Secretion Management & Oral Hygiene System for Ventilated Patients

COVID-related Interventions



Scaling Biotech Start-up Ecosystem:
Growth Projections by 2025



STRATEGIC PARTNERSHIPS - Building an innovation ecosystem

FOR FURTHER INFORMATION
PLEASE CONTACT:

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Biotechnology Industry Research Assistance Council

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Lodhi Road, New Delhi – 110003
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