



Government of Karnataka

BIOTECHNOLOGY



**INVEST
KARNATAKA
2016**

GLOBAL INVESTORS MEET

February 3-5, 2016
Bangalore Palace, Bengaluru



Foreword



Shri S.R. Patil

Honorable Minister for Planning and
Statistics, Information Technology,
Biotechnology and Science & Technology,
Government of Karnataka

“

*Karnataka contributes to over 1/3rd of the
BT exports and is home to over 50% of the
Country's Biotech companies.*

*Biotechnology has a greater role to play in
the lives of the people and in the economy.
State will take up policy initiatives towards
capacity building and providing the Biotech
related infrastructure on PPP mode.*

”

Foreword



Ms. V. Manjula

Principal Secretary, Department of
Information Technology, Biotechnology
and Science & Technology, Government
of Karnataka

“

Karnataka was the first to formulate a Biotechnology Policy in the Country. The State has successfully implemented several initiatives. Under the Millennium Biotech Policy-II, Biotech Innovation and Incubation Centres are proposed in Dharwad, Mysore, Mangalore and Bidar, in addition to the Bangalore Helix. The State has strategized capacity building through setting up of Biotech Finishing Schools. The Bangalore Bio Innovation Centre is expected to give a big boost to Innovation in the Biotech sector.

”

CONTENTS



1 Highlights

2 Sector Snapshot

3 Karnataka's Unique Advantage

4 Government and Policy Enablers

5 Investment Opportunities

Highlights



1

Karnataka is the Knowledge hub for Biotechnology Industry - with leading Institutions and Companies based in the State

- Highest number of Biotech Companies in India are located in Karnataka.
- State has a thriving ecosystem which continues to drive Biotechnology sector's growth in the country
- **Bengaluru is the No.1 Biotech city with total revenues of USD 2 bn**
- Karnataka is a popular destination for Start-ups in Biotechnology such as Criyagen Agri & Biotec, Theramyt Novobiologics, Anthem Biosciences, Mir Life Sciences and many more
- Karnataka holds a pre-eminent position in terms of housing Internationally recognised Research and Development institutions such as IISc, JNCASR, NCBS, NIMHANS, CFTRI, IBAB, CHG, IABT and so on

Karnataka is committed to creating enabling infrastructure, skill development and network opportunities through a holistic policy framework

- Millennium Biotech Policy II 2009 formulated to provide incentives, logistics support and funding support to make Karnataka globally competitive in Biotechnology sector
- Bio-Venture Funds to promote innovation and to support product development
- Bio Innovation Centre has been established with state-of-the-art laboratory facilities
- Bengaluru is a leading knowledge hub with leading establishments in Science and Technology, Research and Development
- Karnataka State Industrial Policy provides additional incentives for production facilities
- First Multi-Sector Startup Policy in the country aiming towards a globally competitive startup ecosystem through strategic investment and policy interventions leveraging the robust innovation climate

Investment Opportunities for Biotechnology sector

Agriculture Biotechnology, Vaccines & Antibiotics, Waste transformation, Synthetic Biology , Biofuels and Bioremediation are some of the potential areas for investment

Five Bio Innovation Clusters & Biotech Parks with investment of USD 20 mn plus proposed







Sector Snapshot




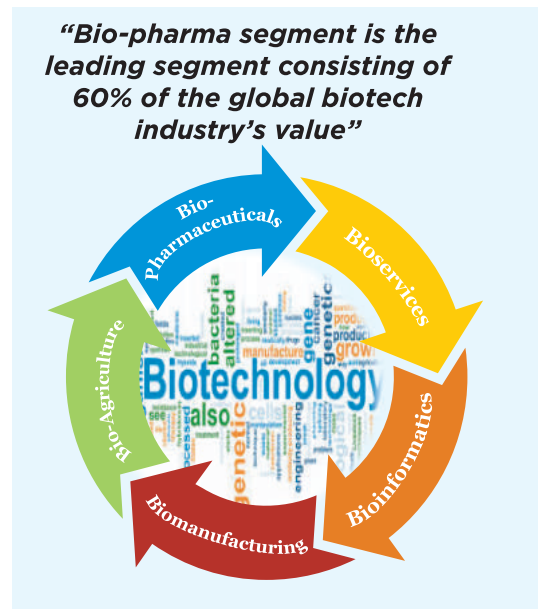
2

Global Biotech Industry is growing at a fast pace through continuous research and development

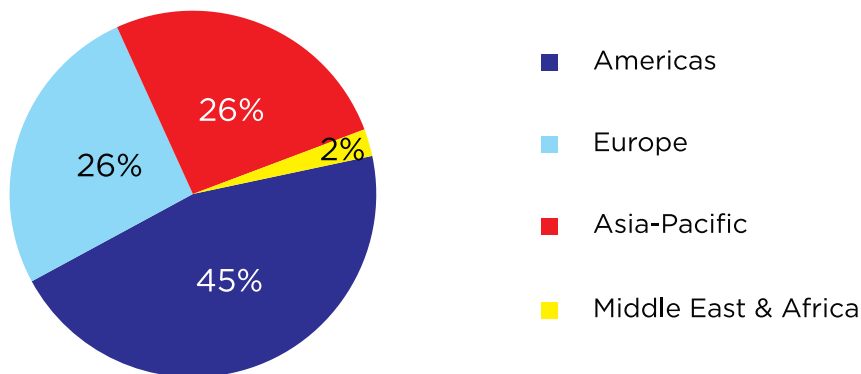
 Net income jumps 231% in 2014 to historic high of USD 14.9 bn

 In 2014, Biotech companies spent USD 35.4 bn on R&D which was 20% higher than in 2013

 Demand for drugs will be driven predominantly by emerging markets by 2020

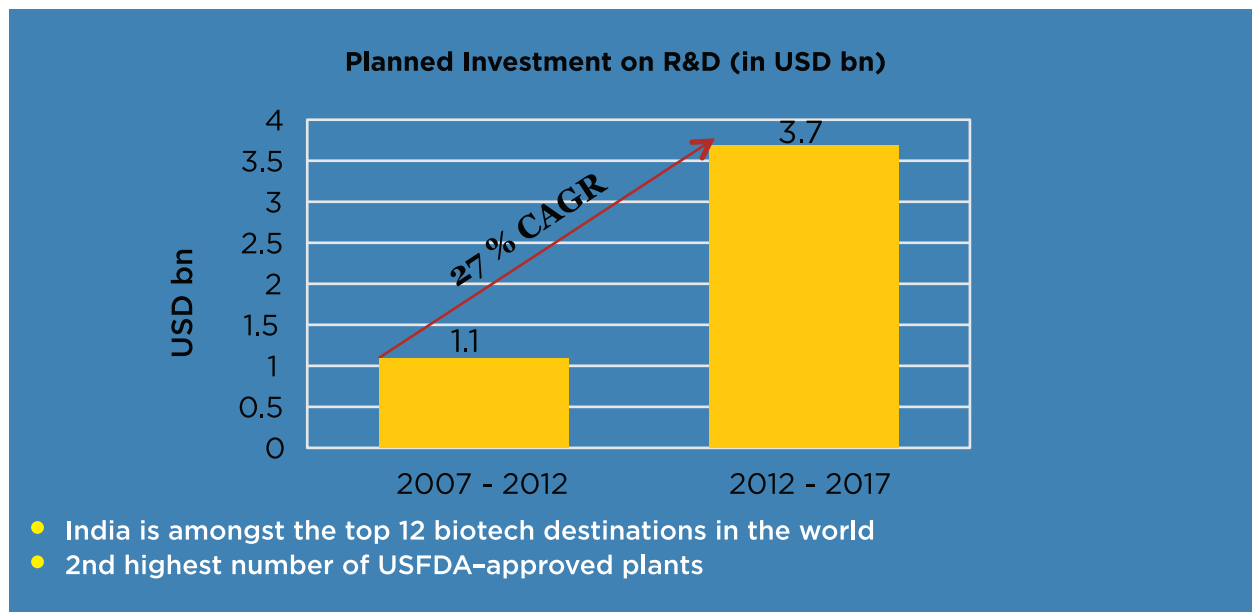
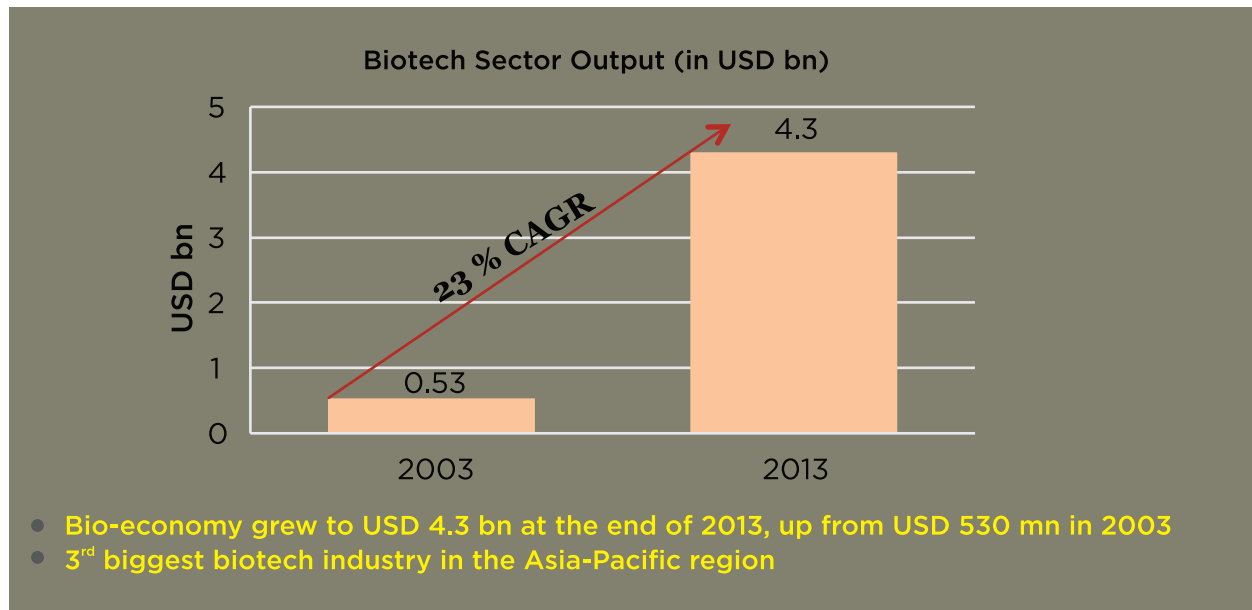


Geographical segmentation of the biotechnology market



Source: TNGIM 2015, industry reports
 Source: PRNewswire, EY-beyond-borders-2015

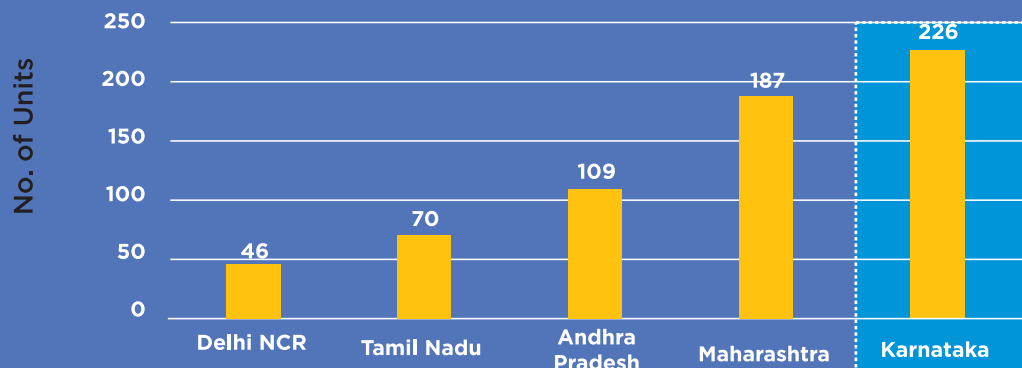
India is a major Biotechnology Hub in Asia Pacific Region growing at CAGR of 23% over last decade



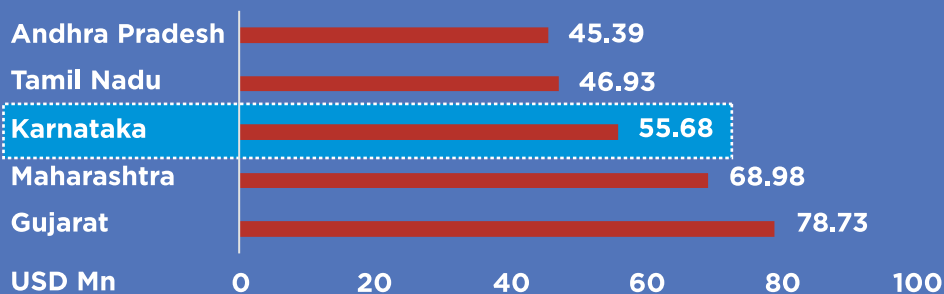
Source: IBEF report, Aug 2015

Karnataka is the leading State in India in Biotechnology Sector

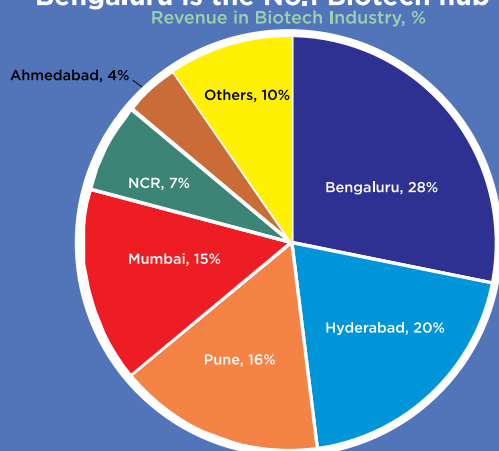
Highest Number of Biotech Companies in India are located in Karnataka (2014)



3rd highest R&D expenditure in India (2014), USD mn



Bengaluru is the No.1 Biotech hub with total revenues of USD 2 bn in 2013-14



Total Indian Biotech revenue-
USD 4.19 bn

Source: Karnataka-The Biotech hub of Asia-Feb 2014, Economic Survey of Karnataka 2014-15



Karnataka's
Unique Advantage

3

Karnataka's Unique Advantages

“Knowledge hub for biotechnology industry”

“Driving more than 30% of the national revenues in biotechnology”

“Number of startups in Bengaluru increasing at 30% annually”

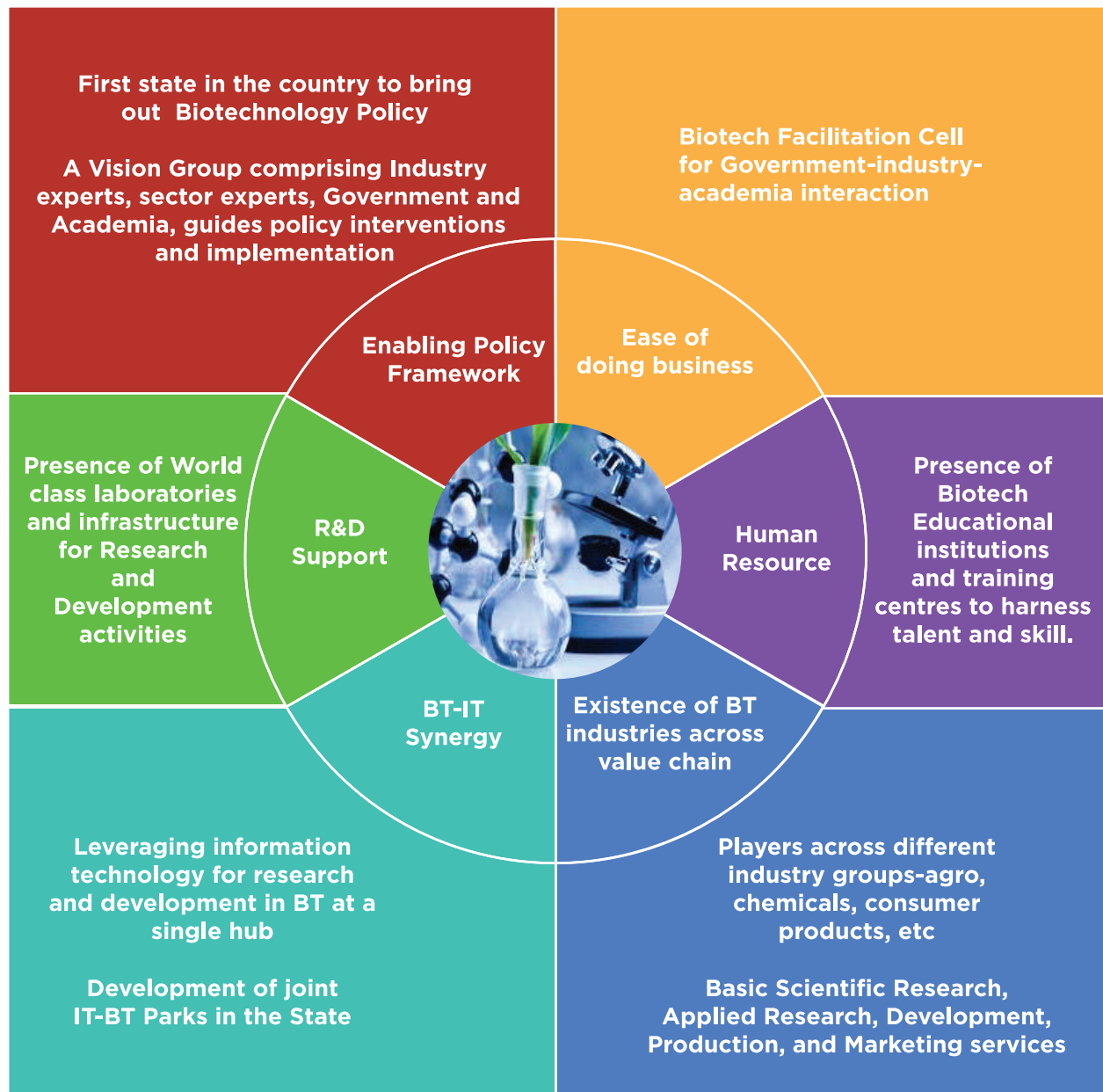
“Employing more than 19,000 highly qualified professionals”

Biotech Hub of India
“more than 50% of India's biotechnology companies located in Karnataka”



Source: Karnataka-The Biotech hub of Asia- MM Activ, Feb 2014, Economic Survey of Karnataka 2014-15

Karnataka has a thriving Biotechnology ecosystem which continues to drive sector's growth in the country



Karnataka is the Knowledge hub for Biotechnology sector

Biotechnology Finishing Schools (BTFS)

- 12 schools have been established for Post Graduate Diploma (8 BT Domains)
- Capacity for 300 Trained Students/year
- High percentage of job placement

Centre for Human Genetics (CHG)

- To address existing lacunae in research and education including rare genetic disorders
- Conducts advanced courses and workshops for scientists and clinicians

Institute of Bioinformatics and Applied Biotechnology (IBAB)

Centre of Excellence functioning since 2001 offering courses for PG (300 Students TD*), M.Sc (80 Students TD*), PhD (4-10 pursuing) and modular courses

Leading Institutions in Karnataka

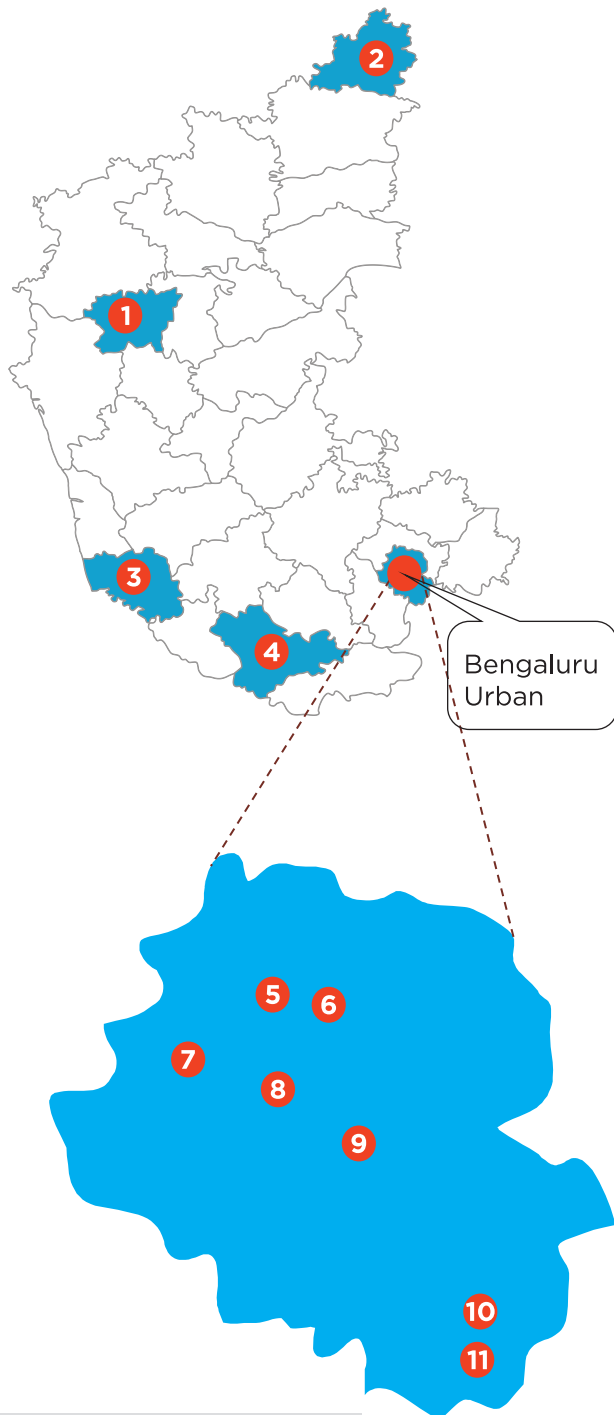
- Indian Institute of Science, Bengaluru
- National Centre for Biological Sciences, Bengaluru
- Central Food Technological Research Institute, Mysuru
- Jawaharlal Nehru Centre for Advanced Scientific Research, Bengaluru
- Institute for Agriculture Biotechnology, Dharwad
- National Institute of Mental Health and Neurosciences, Bengaluru
- Indian Institute of Horticultural Research, Bengaluru
- University of Agricultural Sciences-Bengaluru, Dharwad, Raichur, Shivamogga
- Karnataka Veterinary, Animal & Fisheries Sciences University, Bidar



* TD-Till date Passed out

CFTRI, Mysuru

Training and Research Facilities to enhance skill & talent



Premier R&D and training institutions is the USP of the State, providing critical advantage for Biotechnology sector's growth

1	IABT, Dharwad
2	KVASFU, Bidar
3	College of Fisheries, Mangaluru
4	CFTRI - CSIR, Mysuru
5	National Centre for Biological Sciences, University of Agricultural Sciences
6	Jawaharlal Nehru Centre for Advanced Scientific Research
7	Bengaluru International Exhibition Centre
8	Indian Institute of Science
9	Karnataka Biotechnology and Information Technology Services
10	IBAB, BBC, Centre for Human Genetics
11	Biocon Park

Leading Biotech Companies in Karnataka



36 key brands across four therapeutic divisions of Diabetology, Nephrology, Oncology and Cardiology

Biocon is the Only Asian Company to be ranked in Top 20 Global Biotech Employers for 2015

Biocon Ltd (BSE code: 532523, NSE: BIOCON) announced today that it has earned the distinction of being the only Asian Biopharma Company to feature among the top biotechnology employers in the world as ranked by Science magazine.[sic]

BusinessLine, November 03, 2015



Biosolutions for agriculture, bioenergy, biopharma, food and beverages, household care, leather, pulp and paper, textiles, and wastewater

Novozymes world's best science employer in 2015: Science magazine

Global biotech major Novozymes emerged as the best science employer in the world in 2015, according to the latest survey by Science Magazine. Novozymes was followed by pharmaceutical companies Regeneron Pharmaceuticals and Novo Nordisk to be ranked in the top three positions. Bangalore-based biotechnology company Biocon was ranked 13th in the list.[sic]

Business Standard, November 05, 2015



Genome Research and Clinical Applications
Products for biological systems research
and for diagnosis and treatment of disease



Develops transgenic cotton and rice for insect protection using its proprietary gene constructs and transformation protocols Bt Cotton, Bt Rice



Drug discovery in four therapeutic areas- Metabolic Diseases, Inflammatory Diseases, Pain/Neurodegenerative Diseases, and Neglected Diseases; Pharmaceutical and Agro Development services



Products and services that include medical imaging and information technologies, electronic medical records, medical diagnostics, patient monitoring systems, drug discovery, and biopharmaceutical manufacturing technologies



Baby care, Health care, Skin care and Hair care products (creams, lotions, shampoos, powder, oil, etc)

Karnataka is also a popular destination for Startups in Biotechnology

In the genes: Incubating the stuff of biotech dreams

Banking on solid research output and entrepreneurial insight combined with a discerning talent pool, Bangalore is charting its own course in the growth story of India, cementing its place in a changing global order with a slew of disruptive technologies.

The Centre for Cellular and Molecular Platforms (C-CAMP) is carving out a niche with its Startup ecosystem which has funded 40 companies till date and will incubate 150 more in the next five years. C-CAMP adopts a multi disciplinary approach, which enables collaboration between lifesciences, engineering and businesses to find solution day-to-day problems.[sic]

Deccan Herald 18th Aug 2014

State to Set up venture fund, incubator complex for biotech start-ups: CM

With an assurance to set up a venture capital fund and an incubator complex in the city for start-ups in the biotechnology sector, Chief Minister Siddaramaiah launched the 15th edition of the Bangalore INDIA BIO here on Monday

Inaugurating the event, Mr. Siddaramaiah said the aim was to become a “bio-economic” centre of the world, and that bio-policy was being tweaked to enable an environment of growth. Bengaluru already accounts for 52 percent of all biotech companies in the country, he said.[sic]

The Hindu 9th Feb 2015

Bengaluru is a place for India's Best Innovative Biotech startups

Biospectrum 30th June 2015



State supported Networking and Collaborating Opportunities

Bangalore India Bio Summit



- **Bangalore India Bio brings together the Biotech fraternity to sketch the landscape for different areas-Bio Pharma, Bio Agri, Bio energy, Bio Services, etc.**
- **Successfully completed 15 editions since 2001**
- **Showcases the commitment of Government of Karnataka to promote Biotechnology in the State**
- **BT sector is a sunrise industry in the country and is slated to emulate the success of IT sector in the State**

16th Edition of Bangalore India Bio



9-11 February 2016 The Lalit Ashok, Bengaluru, India

Karnataka's Policy Enablers



4

Biotech Enabler - Millennium Biotech Policy II

Research labs to automatically come under green category

Fiscal incentives and concessions under Karnataka Industrial Policy 2014-19 being extended

Additional Incentives for Export Oriented MSME, Large, and Mega Projects, like 100% exemption from payment of Entry Tax

Five Biotech parks being established in different parts of the State

Anchor Unit Subsidy for first two manufacturing enterprises

Unique package of concessions for Mega Projects

Incentives for water harvesting/conservation measures, non-conventional energy to small and medium manufacturing enterprises

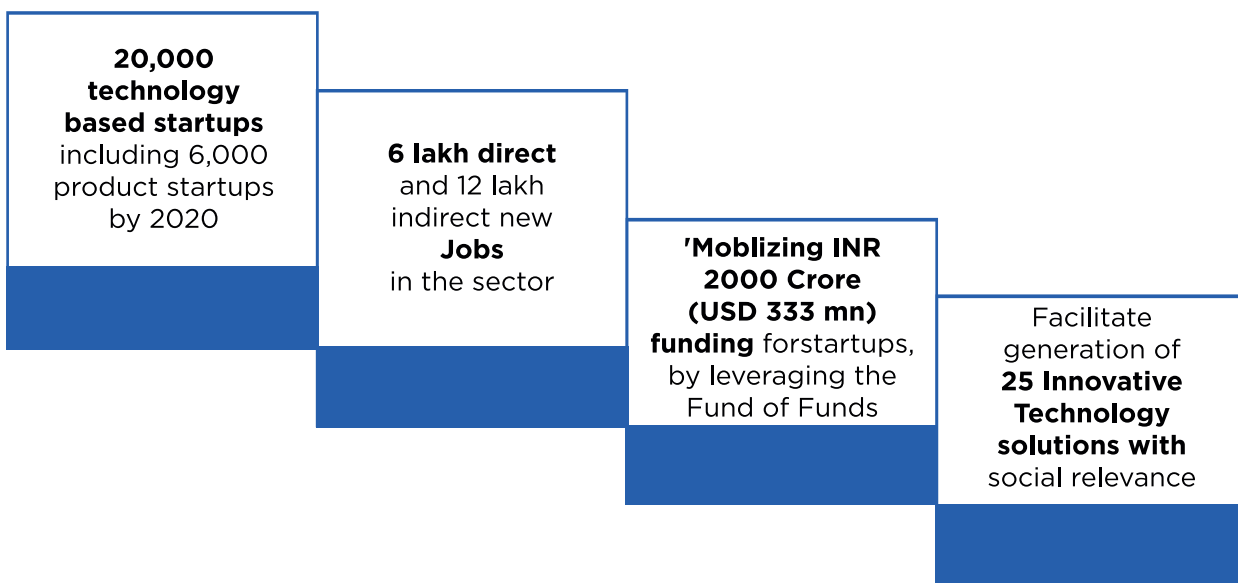
Single Window Clearance Mechanism for expediting approvals

Karnataka Startup Policy 2015-2020



Towards a world-class startup ecosystem through strategic investment and policy interventions leveraging the robust innovation climate

Goals



Strategies

Fostering strong partnerships between R&D institutions and Industry	Channelizing Innovation for Social Impact	Encouraging Entrepreneurship in Education through NAIN (New Age Incubation Network)
Providing early stage / Idea2PoC (Proof of Concept) funding	Promoting Capacity Building through exposure visits and workshops	Startup funding through Fund of Funds
Creating Incubation infrastructure through PPP	Providing State support in the form of incentives and concessions	Enablement through Startup cell, Startup Portal and Hotline

Bio-Venture Fund and Incubation Centres with state-of-art laboratory facilities

Establishment of Bio-Venture Fund	Promote R&D and Innovation	Government support
	<ul style="list-style-type: none"> • To convert laboratory findings to reproducible products • Support early stage biotechnology companies 	<ul style="list-style-type: none"> • Bio-venture fund of INR 500 mn being set-up in partnership with a professional VC firm • 26%-Government 74%-Financial Institutions
Creating an impact		
Fostering entrepreneurship and developing new products - Pharmaceuticals, Nutraceuticals, Med Tech, Clean Tech		

Bangalore Bio Innovation Centre



Bangalore Bio Innovation Centre (BBC)
25 fully furnished suites providing laboratory facility to promote innovation driven R&D startups

Investment Opportunities



5

Areas of Investments in Biotechnology



Agri Products

- Biotech Crops (Pulses, Cereals, Plantation Crops)
- Aerobic Rice (water saving)
- Sugarcane-Alternative Products

Pharma

- Vaccine technologies
- Drug Discovery (new antibiotic and other natural entities)
- Synthetic Biology



Environment

- Conversion of Waste to useful products
- Bioremediation

Energy

- Biofuels
- Marine Biology



Bio Innovation Clusters proposed at four locations with investment of USD 20 mn each

Agri Biotech Park, Dharwad

- ✓ Area - 30 acres for Field Trails
- ✓ Investment - USD 15-20 mn
- ✓ R&D on Gene construction, Drought Tolerance, Anti-phyto pathogenic genes etc.
- ✓ Collaborator - UAS, Dharwad

Animal BT Park / Vivarium, Bidar

- ✓ Area-20 acres
- ✓ Investment-USD 20 mn
- ✓ R&D in Disease diagnosis, Vaccine Production, Embryotransfer, Bioinformatics, Stem Cell Techniques etc
- ✓ Collaborator - KVAFSU, Bidar

Currently operational

Bangalore Bio Innovation Centre (BBC)

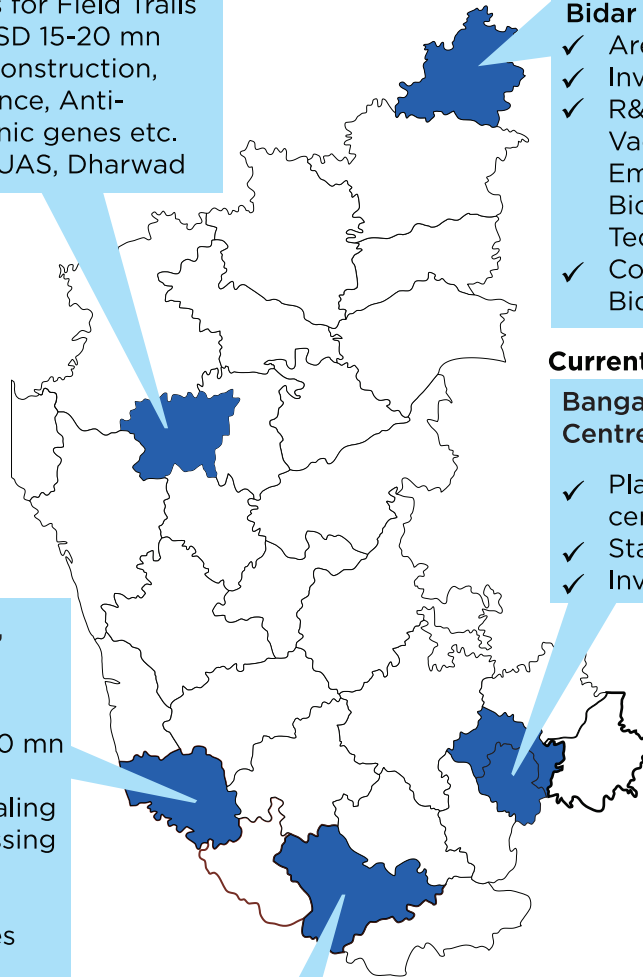
- ✓ Planned for 5 Incubation centres
- ✓ Status-Ready to occupy
- ✓ Investment-USD 20 mn

Marine Biotech Park, Mangaluru

- ✓ Area-18 acres
- ✓ Investment-USD 20 mn
- ✓ R&D on DNA sequencing, up scaling technology processing waste utilization
- ✓ Collaborator-The College of Fisheries / KVAFSU

Nutri / Nutraceutical and Phyto-Pharmaceutical Park (N2P2), Mysuru

- ✓ 14 acres in Mysuru
- ✓ Investment-USD 20 million
- ✓ R&D facility to develop various nutrition and phyto pharmaceuticals
- ✓ Collaborator-CFTRI, Mysuru



Investment Facilitation

- **Karnataka Biotechnology & Information Technology Services (KBITS)** was established in the year 2000
- KBITS provides secretarial services to the State Level Single Window Clearance Committee and State High Level Clearance Committee, for speedy clearance of the Information Technology and Biotechnology Projects in the State
- KBITS administers incentives and concessions to Information Technology and Biotechnology companies
- KBITS is the single point of contact on behalf of the State Government for providing all basic information to investors to facilitate the establishment of Information Technology and Biotechnology Industries in the State





Government of Karnataka

Contact Details

Principal Secretary to Government

Department of Information Technology,
Biotechnology and Science & Technology.

VI Floor, 5th Stage
M.S.Building, Ambedkar Veedhi
Bengaluru - 560 001
E-mail : secy-itbt@karnataka.gov.in,
itbtsec@gmail.com

Managing Director

Karnataka Biotechnology & Information Technology Services

BMTC- Central Offices Building
TTMC 'B' Block, 4th Floor,
Shanthinagar, KH Road,
Bengaluru 560 027
E-mail : itdir@bangaloreitbt.in, mdkbits@gmail.com





**INVEST
KARNATAKA
2016**

GLOBAL INVESTORS MEET

3rd to 5th February 2016



Commissioner for Industrial Development,
Chairman of Karnataka Udyog Mitra
Email: commissioner@karnatakaindustry.gov.in
Phone: 91-80-22386796

Log on to: www.events.investkarnataka.gov.in