

MINISTRY OF SCIENCE AND TECHNOLOGY
Demand No 87
Department of Biotechnology
1. Industrial and Entrepreneurship Development (CS)

| FINANCIAL OUTLAY (Rs. In Cr.) 2019-20 | OUTPUTS 2019-20 | | | OUTCOME 2019-20 | | |
|--|---|---|---------------------------|---|---|--|
| | Output | Indicator(s) | Target 2019-20 | Outcome | Indicator(s) | Target 2019-20 |
| 280.2 | 1. Funding for development of bio clusters and connecting startup ecosystem | 1.1 No. of Bio clusters developed | 2 | 1. Stimulate regional R&D efforts leading to interdisciplinary projects | 1.1 No. of users using facilities in clusters | 150 |
| | | 1.2 No. of technologies transfer offices set up | 5 | | 1.2 Technologies commercialized | 13 (including technologies out licensed) |
| | | 1.3 No. of Bio-connect offices set up | 6 | | 1.3 International collaborations Signing of new MOUs Exchange program | 5 2 5 |
| | 2. Supporting high risk innovation research | 2.1 Number of on-going research projects under PPP program (cumulative) | 400 | 2. Human Resource Development | 2.1 Number of professional trainings under various schemes/programmes/ workshops for high end skills | 3000 |
| | | 2.2 Number of Academic Institutes supported | 100 | 3. Products/ technologies developed. IP filed | 3.1 Number of Affordable Products/Technologies/Early Stage Technologies developed(at 5% success rate) Total no. of patents filed | 19 (including 10 early stage technologies) 40 |
| | | 2.3 Number of Companies supported | 300 | | 3.2 No. of incubatees | 500 |
| | 3. Building the | 3.1 Number of incubators | 50 | | 3.3 Startup generating follow-on | 25 |

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| | Startup ecosystem and creating high end infrastructure, training and capacity building. | supported & facilities developed (high end instrumentation) | | | funding (>10 Lakhs) | |
| | | 3.2 Number of Regional Entrepreneurship Development Centres (cumulative) | 05 | | | |
| | | 3.3 No of workshops conducted | 125 | | | |
| | | 3.4 Number of Start-ups & Entrepreneurs supported through biotech parks/incubators | 50 | | | |

2. Biotechnology Research and Development (CS)

| FINANCIAL OUTLAY (Rs. In Cr.) | OUTPUT 2019-20 | | | OUTCOME 2019-20 | | |
|-------------------------------------|--|--|-------------------|---|---|-------------------|
| 2019-20 | Output | Indicator(s) | Target 2019-20 | Outcome | Indicator(s) | Target 2019-20 |
| 1474.97 | a) Sub Scheme Name: Research and Development | | | | | |
| | 1. Basic Research in Modern Biology, Bio systems& Bioprocess Engineering, Nano-Biotechnology, Genetic Engineering & Technologies and Bioinformatics: Knowledge Generation & Discovery Research, New Tools and Technologies | 1.1 No. of ongoing projects supported | 212 | 1. Basic Research in Modern Biology, Biosystems & Bioprocess Engineering, Nano-Biotechnology, Genetic Engineering & Technologies and Bioinformatics: Enhanced research and innovation in sciences | 1.1 No. of manpower trained in current year | 1574 |
| | | 1.2No. of new projects supported | 21 | | 1.2 No. of Publications | 720 |
| | | 1.3 No. of workshop/training organized | 116 | | 1.3 No. of Patent filed | 24 |
| | | | | | 1.4 No. technologies/software/ database developed/ transferred/commercialized | 25 |
| | 2. Medical Biotechnology: Support investigator- | 2.1 No. of Ongoing Projects | 543 | 2. Medical Biology: Advancements in the areas of medical biology | 2.1 No. of Manpower trained in current year | 745 |
| | | 2.2 No. of new projects supported | 25 | | 2.2 Total no. of publication | 312 |

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| | initiated frontier research & innovation in Modern Biology | 2.3 No. of workshop/training organized | 14 | | 2.3 No. of patents filed | 16 |
| | | 2.4 No. of New Facilities established | 8 | | 2.4 No. of process/product/technology developed/transferred/commercialized | 10 |
| | | 2.5 No. of Ongoing Industry-academia collaborative projects | 10 | | | |
| | 3. Bio-resources, Clean Energy and Environmental Biotechnology: Support capacity building, research & development | 3.1 No. of Ongoing Projects | 120 | 3. Bio-resources, Clean Energy and Environmental Biotechnology: Capacity building and scientific advancements | 3.1 No. of Manpower trained in current year | 300 |
| | | 3.2 Number of new R & D projects, Network programs, platforms, facilities supported | 50 | | 3.2 Number of publications | 200 |
| | | 3.3 Number of symposium/ brainstorming/ training program/ workshop organized | 8 | | 3.3 Number of Patents filed | 10 |
| | | | | | 3.4 Number of research leads developed (varieties/breeds/technologies / products, processes, diagnostics, vaccines) | 20 |
| | | | | | 3.5 Number of research leads transferred or commercialized (varieties/breeds/technologies / products, processes, diagnostics, vaccines) | 4 |
| | 4. Agriculture biotechnology and allied areas: Support R&D Scientific advancements | 4.1 Number of ongoing projects supported | 250 | 4. Agriculture biotechnology and allied areas: Capacity building Developing new technologies to enhance crop and | 4.1 No. of Manpower trained in current year | 420 |
| | | 4.2 Number of new R & D projects, Network programs, platforms, | 82 | | 4.2 Number of publications | 120 |

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| 2019-20 | Output | Indicator(s) | Target 2019-20 | Outcome | Indicator(s) | Target 2019-20 |
| | | facilities supported | | livestock productivity | | |
| | | 4.3 Number of symposium/ brainstorming/ training program/ workshop organized | 10 | | 4.3 Number of Patents filed | 2 |
| | | | | | 4.4 Number of research leads developed (varieties/breeds/technologies / products, processes, diagnostics, vaccines) | 8 |
| | | | | | 4.5 Number of research leads transferred or commercialized (varieties/breeds/technologies / products, processes, diagnostics, vaccines) | 4 |
| | | b) Human Resource Development | | | | |
| 5. Human Resource Development (HRD): Provide support to star colleges, PG teaching programs, STP training programs, JRF, RA | 5.1 No. of colleges supported under star college scheme | 42 | 5. Creating skilled human resource | 5.1 No. of Students opting for PG courses from STAR Colleges | 500 | |
| | 5.2 No. of modules/SOPs developed for UG depts. | 100 | | 5.2 No of students got placement after receiving BITP | 150 | |
| | 5.3 No. of PG students trained | 800 | | 5.3 No of persons got placement after availing JRF/RA fellowship | 50 | |
| | 5.4 No. of STTP training programs conducted | 15 | | | | |
| | 5.5 No. of students trained under BITP | 500 | | | | |
| | 5.6 No of DBT-JRF fellowships awarded | 275 | | | | |
| | 5.7 No of DBT-RA fellowships awarded | 70 | | | | |

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| 2019-20 | Output | Indicator(s) | Target 2019-20 | Outcome | Indicator(s) | Target 2019-20 |
| | 6. HRD: Provide support to researchers for undertaking innovative research & development activities in field of biotechnology Recognize and nurture researchers | 6.1 Total number of projects/women scientists supported under BioCARE | 50 | 6. Generation of knowledge and highly trained manpower for teaching and R&D | 6.1 Generation of knowledge and highly trained manpower for teaching and R&D | 5 |
| | | 6.2 No. of Ramalingaswami Re-entry fellowships awarded | 75 | | 6.2 No. of Ramalingaswami Re-entry fellows absorbed as permanent faculty in India (including past fellows) | 20 |
| | | 6.3 No. of Tata Innovation fellowships awarded | 5 | | 6.3 Total No. of publications | 200 |
| | | 6.4 Innovative Young Biotechnologist Award | 14 | | | |
| | | 6.5 National Bio-Science Award for Career Development | 10 | | | |
| | | 6.6 National Women Bio-Scientist Awards | 3 | | | |
| | | 6.7 Biotech Product, Process Development and Commercialization Awards | 3 | | | |
| | | 6.8 Distinguished Biotechnology Research Professorship Awards | 5 | | | |
| | 7. HRD: provide financial assistance for conference, travel, exhibition and Popular Lectures | 7.1 No. of CTEP activities a) Conference b) Travel grants c) Popular Lectures d) Exhibitions | 50 450 15 10 | 7. HRD: Biotechnology outreach | 7.1 No of students/ researchers participated | 500 |
| | | | | | | |

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| | | a) tier-II and b) tier III cities | 5 | | | |
| | c) Biotechnology Research Resources, Facilities and Partnerships | | | | | |
| | 8. Research Resource Service Facility Programme | 8.1 No. of New Institute / University supported under this scheme | 05 | 8. Research Resource Service Facility Programme | 8.1 Number of Manpower trained | 2575 |
| | | 8.2 Support provided for creation of infrastructure (ongoing + new) | 03 | | 8.2 Number of Publications | 725 |
| | | 8.3 No. of facilities supported (ongoing + new) | 15 | | 8.3 No. Of JRF/ SRF, RA, Scientist Trained | 100 |
| | | 8.4 Lab upgradation (ongoing + new) | 10 | | 8.4 No. of Scientists and Researchers Utilized the facilities | 10 |
| | | 8.5 Number of BTIS-Net Centre supported (ongoing) | 150 | | 8.5 <i>No of database created</i> | 63 |
| | | 8.6 No. of trainings/workshops conducted (bioinformatics) | 110 | | 8.6 No of R & D project using this facility | 10 |
| | | 8.7 Details of facilities supported (Super Computing facility) | 1 | | | |
| | | 8.8 Number of e-journals available on shared network | 1000 | | | |
| | | 8.9 Number of institutions accessing shared research resources such as DeLCON | 28 | | | |

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| | d) International Cooperation | | | | | |
| | 9. International cooperation: Research and Development activities | 9.1 New International Partnerships forged in current year | 3 | 9. International Cooperation: Increased collaborative research in Biotechnology | 9.1 Number of researchers trained in current year | 138 |
| | | 9.2 Joint International call for proposals announced in current year | 6 | | 9.2 Technologies developed /transferred / commercialized in current year | 3 |
| | | 9.3 No. of new International collaborative research projects funded in current year | 30 | | 9.3 Number of Publications (peer reviewed) in journals in current year | 73 |
| | | 9.4 No. of on-going International collaborative research projects in current year under International collaborative research projects | 103 | | 9.4 Number of Patents in current year | 9 |
| | | 9.5 No. of workshops organized/ supported current year | 54 | | | |
| | | 9.6 No .of Scientific exchanges/ visits organized in current year international collaborative research projects | 52 | | | |
| | 10. International cooperation: Capacity Building & | 10.1 No. of fellowships/awards in current year under: DBT-BMGF-BIRAC | 20 | 10. Biomedical Research Career Programme (DBT-WT/ India Alliance): | 10.1 Numbers of researchers coming back to India from overseas with this support | 5 |

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| | Human Resource Development | 10.2 No. of fellowships/awards in current year under: Newton Bhabha PhD placement programme | 30 | Enhanced opportunities for Indian scientists to return to/continue working in India and pursue viable and productive biomedical research careers. | 10.2 No. of BRCP fellows continuing with positions in Indian Institutions after completion of fellowship | 40 |
| | | 10.3 No. of fellowships/awards in current year under: The Khorana programme | 50 | 11. Biomedical Research Career Programme (DBT-WT/ India Alliance):Strengthening of India Alliance systems for high quality biomedical research | 11.1 High quality basic-clinical research partnerships developed through the programme | 3 |
| | | 10.4 No. of International (young investigators) short &long term fellowships is in current year under: EMBO/ HSFPO | 20 | 12. Biomedical Research Career Programme (DBT-WT/ India Alliance):Enhanced leadership position of India in areas of life sciences & biomedical research | 12.1 Total Number of publications in high impact journals | 120 |
| | | 10.5 No. of students/ Citizens trained in microscopy in current year | 2000 | 12.2 Total No. of patents filed each year | 02 | |
| | | 10.6 No. of women farmers trained in current year | 35 | | | |
| | 11. Biomedical Research Career Programme (DBT-WT/ India Alliance):Provide | 11.1 No. of fellowships/awards in current year under: Biomedical Research Career Progamme (DBT-WT/ India Alliance) | 72 | 12.3 Average Relative Citation Ration (RCR) of BRCP fellows | 1.5 | |

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| | financial & mentorship support to talented researchers for biomedical research (Human & Veterinary) | | | | | |
| | | 11.2 Number of researchers to whom fellowships have been released in current year for basic research under: a) Early careerFellowship b) IntermediateFellowship c) Senior Fellowship | 10 10 6 | | | |
| | | 11.3 Number of researchers to whom fellowships have been released in current year for clinical research under a) Early career Fellowship b) Intermediate Fellowship c) Senior Fellowship | 4 6 3 | 13. Biomedical Research Career Programme (DBT-WT/ India Alliance):Generation of highly trained manpower for teaching & R&D | 13.1 Numbers of people trained in the research environment created by these fellowships and grants | 190 |
| | | 11.4 Number of researcher to whom Collaborative Research Grants have been released in current year for inter-disciplinary research | 3 | | 13.2 Numbers of physician scientists supported by the programme | 78 |
| | | 11.5 Number of clinical research centres provided financial support in current year | 3 | | 13.3 Numbers of Research Managers trained through the programme | 15 |
| | | 11.6 Number of researchers to whom fellowships have been released in current year for Clinical Research Training Programme | 12 | | 13.4 Biomedical Research Career Programme (DBT- WT/India Alliance) fellowships : No. of post docs from outside India | 4 |

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| | | 11.7 Number of researchers to whom fellowship have been released for research management | 6 | | 13.5 Biomedical Research Career Programme (DBT-WT/ India Alliance) fellowships: No. of post docs who have continued in Indian Institutes | 65 |
| | | 11.8 Number of researchers to whom grants have been released for research management | 3 | | 13.6 Biomedical Research Career Programme (DBT-WT/ India Alliance) fellowships: No. of Ph.D and PGs mentored by BRCP fellows. | 160 |
| | | 11.9 Number of researchers to whom financial assistance has been released for travel under research management | 6 | | | |
| | | 11.10 Number of ongoing projects supported under: (a) Human biomedical research(b) Veterinary biomedical research | 206 | | | |
| | | e. Biotechnology Based Programme for Societal Development | | | | |
| | 12. Biotechnology Based Programme for Societal Development: Expansion of rural bio-resource complexes / Technology | 12.1 Number of Rural Bio-resource complexes / Technology demonstration centre / Units set up in Aspiration Districts | 9 | 14. Biotechnology Based Programme for Societal Development:: Generation of opportunities for self-employment | 14.1 Number of Self Employment Generated | 300 |

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| | demonstration centre / Units | | | | | |
| | 13. Biotechnology Based Programme for Societal Development: Diffusion of proven and field- tested technologies through demonstration, training & extension activities | Number of hands-on training/workshops/ awareness programmes provided in current year in area of agriculture & animal husbandry: (a) Rural development (b) Women (c) SC/ST | 40 20 30 | | 14.2 No of technological interventions introduced for application | 10 |
| | | | Number of beneficiaries | | | |