

Activities and achievements of

Bangladesh Council of Scientific and Industrial Research (BCSIR)

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Introduction

- BCSIR was established in 1973 under presidential ordinance with the aim of utilizing of indigenous resources for the development of Industrial sector leading to import substitution and export enhancement.
- The glorious journey of BCSIR was commenced in 1955 as a multidisciplinary research unit “East Regional Laboratories” of PCSIR. Since then this organization is being involved in performing scientific and industrial research achieving self-reliance in industrial development of Bangladesh.
- During this period BCSIR has expanded its domain to 3 full fledged multi-disciplinary regional laboratories, 8 mono-disciplinary institutes and 1 centre for pilot plant studies.

• Major area of research:

- | | | |
|---|---|---|
| <input type="checkbox"/> Food science & technology | <input type="checkbox"/> Microbiology | <input type="checkbox"/> Fibre and polymer |
| <input type="checkbox"/> Chemical metrology | <input type="checkbox"/> Mining, mineralogy & metallurgy | <input type="checkbox"/> Pulp and paper |
| <input type="checkbox"/> Bio- science & Bio-materials | <input type="checkbox"/> Nanotechnology | <input type="checkbox"/> Renewable energy |
| <input type="checkbox"/> Biogas technology | <input type="checkbox"/> Pharmaceutical chemistry | <input type="checkbox"/> Glass, ceramics & Building materials |
| <input type="checkbox"/> Leather technology | <input type="checkbox"/> Herbal medicine & natural products | <input type="checkbox"/> Soil & environmental science |

To develop new technology

- Generation and dissemination of scientific knowledge through R&D activities



- Achievements in last one year: 124 Research papers were published in different journals, 8 patents were achieved.

To support industrialization through innovation



- Technology development for industries
- Solving problems in industries through R&D



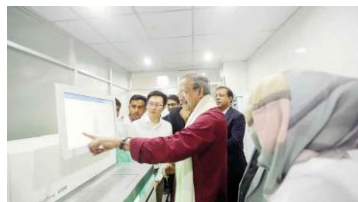
- Achievements in last one year: 12 industrial process were developed

To create new research facilities through establishing and upgrading new laboratory

❖ Genomic Research Laboratory

Objectives:

- Next Generation Sequencing (NGS) with the help of DNA sequencer by increasing the capability of genetic research.
- Identify biological problems in biology, computer science and information technology and identify and encourage genomic research.
- Developing and implementing genome-based technologies, especially gene therapy for primary diagnosis and treatment of various types of diseases.



❖ Establishment of Institute of Bio-equivalence Studies and Pharmaceuticals Science



❖ Modernization of Leather Research Institute

Capacity of LRI has been increased to meet the SDG (Clause 9.5).

The ongoing project will enable us to develop a world standard accredited leather laboratory. .



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To develop human resources of the country

- Fellowship for students at MSc, PhD and Postdoc. level
- Supervision of students' thesis from different public and private universities
- Provide training for industry people and quality regulating authorities



- ❖ Training for different industry personnel
- ❖ Theoretical and practical training for testing food quality for sanitary inspectors
- ❖ Training program on food processing, quality control and food safety for personnel from defence service
- ❖ Hands on training for young engineers and technologists
- ❖ Trained up unskilled manpower on light engineering
- ❖ And many more.....

- Achievements in last one year: 50 researchers got fellowships, 182 students completed their MSc and PhD thesis under the supervision of scientists of BCSIR, 10 training programs were organized where more than 200 people was trained up.

To popularize science and create science minded people by organizing events

- Organize Science Fair for students from School, College and Universities



- Achievements in last one year: Four science fairs were organized in distinct regional laboratories of BCSIR including its central office.

To be affiliated with national development

- ❖ Service agreement for
 - Testing waste water from **Rooppur Nuclear Power Plant**
 - Assessment of air, water and soil quality of **Dhaka Metro Rail Project**



To support business and commerce by providing analytical and testing service of goods

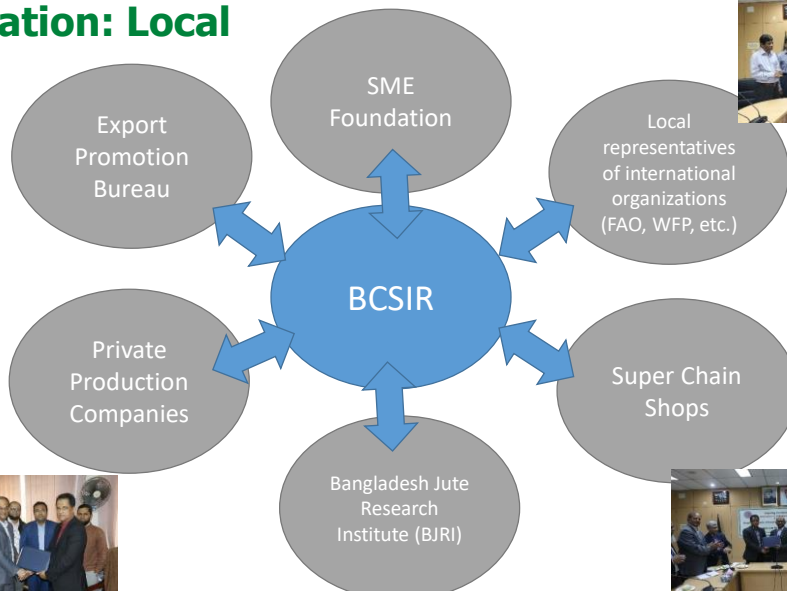
- Analytical services are provided to:

- ✓ Producers
- ✓ Traders (Export & Input)
- ✓ Consumers

- Achievements in last one year: 6466 Samples were analyzed and provide report to support business and commerce in the country

To create and maintain collaboration with national and international organizations

Collaboration: Local



To create and maintain collaboration with national and international organizations

Collaboration: International

• International collaboration:

- Council of scientific and Industrial Research (CSIR), New Delhi, India
- China National Pulp and Paper Research Institute (CNPPRI), China
- Nihon Kokudo Kaihatsu Co., Japan (designated as JDC)
- The Commonwealth Scientific and Industrial Research Organization (CSIRO), Australia
- Portuguese Institute Quality (IPQ)

✕ Modes of collaboration:

- + Joint R&D activities
- + Mutual exchange of scientists, knowledge and data sharing
- + Capacity building through training
- + Joint organization of Scientific workshop, seminar, symposium, and so many.



- Achievements in last one year: MoUs were signed with two international and 12 local organizations

To meet the goals of Sustainable Development (SDGs) through technology development

- Following Sustainable Development Goal are very much related to the activities of BCSIR:
 - SDG 2: End hunger, achieve food security and improved nutrition and promote sustainable agriculture
Nine technology has been developed on food and nutrition.
 - SDG 6: Ensure access to water and sanitation for all
A technology has been developed on water purification.
 - SDG 7: Ensure access to affordable, reliable, sustainable and modern energy
29650 biogas plants have been installed
 - SDG 12: Ensure sustainable consumption and production patterns
To maintain quality of Soil, water and air, BCSIR has signed an agreement with Nuclear Power Plant
 - SDG 13: Take urgent action to combat climate and its impacts
Biomaterial and biochemicals have been developed
 - SDG 17: Strengthen the means of implementation and revitalize the global partnership for sustainable development.
Signed MoU with four different countries

To support the Ministry of Science and Technology in formulation of science policy and their implementation

- BCSIR provides technical input to the Ministry of Science and Technology for formulation and implementation of policy for the advancement of this sector.
 - BCSIR also provides opinion and input for the bilateral and multilateral collaboration with other countries and organizations
- Achievements in last one year: More than 20 technical inputs and opinions were given to the ministry from BCSIR last year.

Cooperation

Interest collaborative research with other centre of excellences of COMSATS

- Nanotechnology
- Renewable Energy
- Food safety
- Essential oil and industrial surfactant
- Herbal Medicine and Medicinal Plant
- Biotechnology
- Biomedical
- Leather/shoe Technology
- Biomaterials, Biochemical and Bio fuel (bio refinery)
- Materials and metallurgical science and engineering

BCSIR Needs support

- ❖ Genomic Research
- ❖ Bio-equivalence Studies and Pharmaceuticals Science
- ❖ Biomedical
- ❖ Dielectric material (e.g. Magnetic material, Ceramic capacitor)

Thank you