



EXPERT GROUP MEETING ON STRENGTHENING REGIONAL COOPERATION IN HEALTHCARE BIOTECHNOLOGY AND BIOMEDICAL SECTOR

By

Prof. Dr. Shahid Mahmood Baig (S.I)

Chairman

**Pakistan Science Foundation, Ministry of Science and Technology,
Government of Pakistan**

Introduction

PSF was established in **1973** through an Act of the Parliament, as an Autonomous Body under Ministry of Science and Technology (MoST) with the primary objective for **Promotion and Funding of Scientific Research** and related activities having bearing on socio-economic needs of the country

Strengthening Regional Cooperation: A Real Gap

- COVID-19 pandemic has emphasized the **importance** of science, technology and innovation (STI), particularly in healthcare sector.
- STI has been **crucial in developing response measures to the pandemic** including diagnostic kits, repurposing of drugs, developing vaccines, biomedical equipment and Personal Protective Equipment (PPEs) etc.
- During the pandemic, medical technologies have played a crucial role in the prevention, diagnosis and treatment of disease as well as patient rehabilitation.

Role of Biotechnology and Pandemic

- Considering the **enormous potential of biotechnology**, there is need to devise the **efficient biotechnology policy**, not only for short term but also for long term.
- Keeping in view the **limitations and potential of the technology**, its intellectual and justified use with a pre-planned, objective oriented research is thus indispensable.

Pandemic, Biotechnology and Pakistan

- The recent Covid-19 pandemic has clearly **exposed the limitations of institutional and research and development (R&D) capacity** in the healthcare sector of Pakistan.
- In addition, almost every year we face the outbreak of **Dengue fever**.
- Moreover, the burden of inherited diseases is higher in Pakistan than other countries due to local tradition of consanguineous marriages.
- The **local health care system** is neither very well established nor adequate to address these big health challenges due to **limited resources** and **lack of proper health and STI policy in place**.

R&D Institutions of Pakistan: A Snapshot

A number of R&D Institutions and Centers of Excellence focused on healthcare biotechnology and biomedical research have already been established in Pakistan

- National Institute for Biotechnology and Genetic Engineering (NIBGE)
- Dr. Panjwani Center for Molecular Medicine and Drug Research (PCMDR)
- National Institute of Health (NIH), International Center for Chemical and Biological Sciences (ICCBS) University of Karachi
- Center of Excellence in Molecular Biology (CEMB), School of Biological Sciences (SBS) University of the Punjab
- National University of Sciences and Technology (NUST)
- COMSATS University Islamabad (CUI)
- Ghulam Ishaque Khan Institute (GIKI)
- Lahore University of Management Sciences (LUMS)
- Aga Khan University, Karachi
- University of Engineering and Technology (UET)
- Pakistan Council of Scientific and Industrial Research (PCSIR) etc.

The Products

- Most of these institutions **have world renowned faculties** and equipped with state of the art facilities for R&D in the field of healthcare biotechnology and biomedical sciences.
- These institutions have **contributed significantly during the Covid-19** pandemic by performing **quality research** on the development of;
 - RT-PCR based diagnosis
 - Sequence based identification of viral variants
 - Vaccine production
 - Identification and trials of antiviral compounds
 - Manufacturing of ventilators and PPEs etc.

A Challenge

- The **gaps in our ability** to address such challenges have also been identified and there is a **dire need** to prepare ourselves in advance to combat any such pandemic and health emergency in future.
- **Regular and adequate financial support** to these R&D institutions and the brain drain have always been limiting factors to achieve the targets in time.

An Effort: Inevitable

- **Pakistan Science Foundation (PSF)** and **Higher Education Commission (HEC)** are the apex bodies to financially support the basic and applied research in the field of health care biotechnology and biomedical sciences in addition to natural, physical and social sciences, Engineering, and Computer and Information Technology in universities and centers of excellence in Pakistan.

Constraints: A Dilemma: Way Out

- However, due to **financial constraints**, both these apex bodies have **not been able to adequately fund some of the mega projects** like **large scale vaccine production** and/or to arrange any buy back guarantee to **attract the private sector industrial partners**.
- There is a big disconnect between the academia and industry to work together on important health issues.
- **International collaborations** also needs to be established and strengthened to execute the mega projects like large scale vaccine production for indigenous and global supply, drug discovery, establishment of genetic testing and provision of cost effective diagnostic services for disease prevention, improved treatment strategies and precision medicine.

A Path to be Followed: A WAY-OUT

- **Today's event** is a great opportunity to **promote multilateral cooperation in Healthcare Biotechnology and Biomedical Sector** in this region.
- This event is a **testimony** to the commitment that the member states shall continue to work in close synergy for the **socio-economic well-being of the people**.
- **We at Pakistan** are really eager to learn and get inspiration from the success and progress of the member countries role in the technological innovation.

Step Forward: Possible Strategies

- **Promote Industry academia linkages** for applied and product oriented research
- **Establishment of Start-ups and Incubators** supported by Venture Capital
- **Establish and strengthen international research collaboration** to share expertise and infrastructures for production of mRNA vaccines and most efficient and cost effective antiviral compounds.
- **The ESCAP and APCTT are the best platforms for coordination** and to establish state of the art healthcare biotechnology and biomedical sector in the Asia Pacific region.

A Note of Gratitude

- **At the end**, I extend my **sincere compliments to the organizers** for the coordination and bringing together the stakeholders to discuss and **further establish the healthcare biotechnology and biomedical sector in Asia Pacific region**.
- I am once again **grateful** to the organizers for providing me the opportunity to share my thoughts in this august gathering of stakeholders from Asia-Pacific countries.
- I look forward for a very fruitful outcome of this meeting.

I THANK YOU LADIES AND GENTLEMEN