

## **Asian and Pacific Centre for Transfer of Technology**

### **Technology Facilitation Consultative Meeting to address the Challenges of COVID-19 Pandemic**

**23 August 2021  
(Virtual)**

#### **A. Summary of discussions**

- The Technology Facilitation Consultative Meeting brought together 55 participants from 8 member States of Economic and Social Commission for Asia and the Pacific (ESCAP), namely Bangladesh, India, Indonesia, Malaysia, Nepal, Philippines, Sri Lanka and Thailand. The participants included 17 female representatives. The participants included APCTT's national focal points, representatives from government agencies, R&D institutions, experts from medical associations and other relevant stakeholders nominated by the participating member States.
- The meeting was organized in collaboration with the Department of Scientific and Industrial Research (DSIR), Ministry of Science and Technology, Government of India. Welcoming the delegates, Dr Preeti Soni, Head of APCTT underscored the felt need for collaboration from the Member States for cross border technology facilitation to increase resilience and healthcare capacity to jointly address the COVID-19 pandemic. In his keynote remarks, Dr. Shekhar C. Mande, Secretary of DSIR, emphasized the need for strengthening technological cooperation and collaboration among member States to jointly combat the COVID-19 pandemic. Dr Mande suggested that India could offer innovative technologies, products, experiences and expertise to other countries address the crisis. Key technological innovations of India include non-invasive ventilators, oxygen production from air and repurposed medicines for COVID-19 treatment and response.
- The meeting deliberated on the needs and availability of reliable and cost-effective healthcare technologies for responding to the pandemic. It provided a platform for member States to identify opportunities of collaboration and explore modalities to share their technology, expertise and experiences.
- Representatives of participating member States discussed about the indigenous technologies and innovations developed to respond to COVID-19 pandemic such as nanotechnology solutions, sterilization products and ventilators. The representatives also highlighted some of the key areas where support is required and could be areas of potential collaboration. These include technology transfer for self-testing kits, oxygen generators, vaccine development, manufacturing of liquid oxygen and medical devices as well as capacity building to support innovation.

## Needs and availability of technologies

- The Genomic Lab of Bangladesh has identified 723 variants of COVID-19 out of which 36% are of interest. Cheaper molecular test kits and oxygen generators with new design and purification system have been developed. A single-dose mRNA vaccine is currently undergoing research phase. Comfortable masks and non-alcoholic sanitizers are already available in the market.
- The Council of Scientific and Industrial Research (CSIR), Ministry of Science and Technology, has developed many healthcare innovations to address the COVID-19 and has established a strong linkage with the industry. Key innovations and technologies are: (1) alternative RT-PCR test, Dry swab test, Saline gargle test; (2) clinical trials of various medicines and production of low-cost Favipiravir and Remdesivir; (3) ventilators, oxygen enrichment unit, oxygen concentrator system, make-shift hospital; (4) disinfectants (UV air purification & ozone air sampling); (5) identification of more than 30,000 genomes of COVID-19; (6) “Arogayapath” app for medical supply chain; and (7) “Kisan Rath” for aiding farmers & food tech innovation for front-line workers.
- Indonesia is making engaged in areas such as: (1) clinical trials of various herbal medicines; (2) portable ventilators, robots and air purifiers with license agreement with industry partners; (3) whole genome sequencing; and (4) recombinant fusion protein vaccine candidates for COVID-19.
- Key technologies and equipment developed in Malaysia include: COVID-19 mobile screening booths, anti-viral nano coating, UV LED disinfectant system integrated with fused nano silica used to purify air and increase safety indoors; nano filters for air-conditioners, nano PPE kits, nanocomposite healing gel & nano-fiber textiles, self-use rapid test kits. Malaysia has also launched NANOVerify Programme for testing of new nanotechnology products targeted for COVID-19 applications.
- Nepal Innovation center, a voluntary organization has worked for the development of low-cost PPE kits, and maintenance of hospital ventilators and medical equipment. A feasibility study for vaccine production is currently at the final stage.
- Philippines is supporting development of vaccines, medicines & drugs, diagnostic/test kits, and AI/ICT ICT-driven models and prediction studies. Key technologies developed in Philippines are (1) low-cost and affordable RT-PCR test kit; (2) portable, collapsible and smart specimen collection booths; (3) self-containing cubicle for disinfection; (4) SIBOL

personal protective equipment; (5) Apps for mapping COVID-19, i.e., ICD (Implantable Cardioverter Defibrillator) and OMIC technology; (6) Feasibility Analysis of Syndromic Surveillance using Spatio-Temporal Epidemiological Modeler (FASSSTER) for Early Detection of Diseases; and (7) Biosurveillance of COVID-19.

- Thailand is making efforts to develop and commercialize several technologies such as: (1) nasal spray COVID-19 vaccines; (2) portable sweat test for COVID-19 detection, plant-based vaccine, mRNA ChulaCov19; (3) probiotics for health and immunity improvement; and (4) i-wellness, stem cell therapy for prevention and recovering lung epithelium/tissue from infection. In addition, Thailand has approved the Asian Herb Andrographis to treat COVID-19 disease.

### **Potential opportunities for collaboration**

- The deliberations revealed interest among member States in specific technologies for potential collaboration. They include oxygen generators, supply and manufacture of medical oxygen, vaccine development, vaccine genome testing, traditional Ayurvedic medicines and ingredients, nasal spray for COVID-19 and usage of probiotics to produce immunity boosting medicines, nanocoating technology, rooftop farming and improving food supply chains, GMP (Good Manufacturing Practice).
- Modalities of gainful collaborations in these sectors will be explored further by Member States for collectively addressing the challenges of the pandemic.

### **B. Feedback from participants**

The meeting was received very well by the participants, which was corroborated through positive feedbacks. Around 91% of the responses received indicated that the deliberations in the meeting enhanced their knowledge and understanding about the issues related to technology needs and availability to address the COVID-19 pandemic. More than 90% of the responses received indicated that they found the presentations and deliberations by resource persons highly informative and insightful.