ANNUAL REPORT

2020-21

TECHNOLOGY INFORMATION, FORECASTING AND ASSESSMENT COUNCIL

(An Autonomous body of Department of Science and Technology, Govt. of India)

TIFAC

Technology Information, Forecasting and Assessment Council (TIFAC)

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ANNUAL REPORT 2020-21

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Governing Council (2020-21)

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Shri Amitabh Kant Chief Executive Officer NITI Aayog New Delhi – 110 001	**Ex-officio Member**
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Shri Vishvajit Sahay Additional Secretary & Financial Adviser	**Ex-officio Member**

Department of Science & Technology New Delhi – 110016	
Dr Nalinaksh S Vyas Professor-Department of Mechanical Engineering, Indian Institute of Technology Kanpur – 208016	**Member**
Prof Chandrabhas Narayana Chemistry and Physics of Materials Unit Jawaharlal Nehru Centre for Advanced Scientific Research Bangalore- 560 064	**Member**
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Dr A K Srivastava Director-CSIR-Advanced Materials and Processes Research Institute Bhopal - 462 026	**Member**
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Executive Director TIFAC, Vishwakarma Bhawan Shaheed Jeet Singh Marg New Delhi – 110016	**Member Secretary**

Finance Committee	
Pradeep Srivastava Executive Director, TIFAC	Chairman
Shri Vishvajit Sahay Additional Secretary & Financial Adviser-Department of Science & Technology	Member
Nominee of Secretary, DST	Member
Shri Mukesh Mathur In-charge (Finance and Admin.), TIFAC	Member Convener

EXECUTIVE SUMMARY

TIFAC plays an important role in the country's technology space through technology foresight exercises, technology information services and demonstrating models of technology development through academia-R&D-industry interaction. In the process, TIFAC has shaped itself into a vibrant knowledge network. TIFAC activities encompass a wide array of technology areas and fill a critical gap in the overall S&T system of India through required technology intervention. TIFAC also prepares Technology Impact Statements, with a view to uncover the likely implications and consequences, both desirable and undesirable, of the existing as well as newly emerging technologies upon society, indicating to decision-makers, through generation of future-oriented scenarios, their short-term and long-term implications. TIFAC also has been actively supporting innovations and innovative technologies through patent support or extending soft loans.

With a technology perspective, TIFAC assessed, evaluated and defined the impact of the pandemic on Indian economy with a view to mitigate the widespread economic shock. Towards such efforts, TIFAC released the White Paper on "Focused Interventions for 'Make in India': post COVID -19". This white paper captured sector-specific strengths, market trends and opportunities in five (5) sectors, critical from a country's perspective that included healthcare, machinery, ICT, Agriculture, electronics and manufacturing, with reference to supply and demand, self-sufficiency and production capacity of technologies and products. In another follow up report, TIFAC brought out the issues which needs to be addressed for Atma Nirbharta in the API sector.

Post-release of the white paper, TIFAC organised a series of brainstorming workshops and prepared a comprehensive report titled "AAAN" as an Action Agenda for an Atma Nirbhar Bharat. This comprehensive action plan highlighted short/medium and long-term interventions in various identified sectors. The document defined overarching policy recommendations with reference to technological inputs, focusing towards Local to Global thereby reviving Indian economy, in identified domains of Innovation and Technology development, Technology Adoption/Diffusion, Boosting up Manufacturing and Productivity, Trade and Globalization, Internet Policy and Data Management & Education and Training. All these initiatives would give further momentum for Atma Nirbharta.

During the year twenty patents have been granted in the name of various institutions facilitated by PFC-TIFAC. TIFAC imparted one year training to 110 women scientists on IPR under the KIRAN IPR (WOS-C) 11th Batch. TIFAC has also facilitated startups and young entrepreneurs for scaling up of indigenous technology innovations under TIFAC-SIDBI Technology Innovation Programme (Srijan). One of the companies supported by Srijan got a contract from M/s. Serum Institute of India, Pune for supply of Single Use Bioreactors for the production of 'Covishield' vaccine and from M/s Bharat Biotech Ltd. Hyderabad for manufacturing of 'Covaxin' vaccine. TIFAC also initiated a new programme

on "Assessment of Technology Maturity for AatmaNirbharta (ATMA)", which aims at assessment of technology maturity and to create a technology portfolio.

TIFAC has been working with MSME clusters with R&D and technical support since last fourteen years towards upgrading their technological capabilities. This year, TIFAC reached out to five new MSME clusters across the country towards their comprehensive technology mapping namely Toys Cluster, Channapatana, Katkhal Sital Pati Cluster, Assam, recanut/Sal Leaf Plate Manufacturing Cluster, West Bengal, Apparel Manufacturing Cluster, West Bengal, Fisheries and Food & Spices Clusters, Manipur.

TIFAC celebrated its 34th TIFAC foundation Day on February10, 2021, during which two new initiatives of TIFAC—Shramik Shakti Manch (*SAKSHAM*)- a dynamic job portal for mapping the skills of Shramiks vis-à-vis requirements of MSMEs to directly connect Shramiks with MSMEs and facilitate enrollment of 10 lakh blue-collar jobs and *Seaweed Programme* for commercial farming of seaweeds and its processing for value addition towards boosting national economy were launched by Dr. V K Saraswat, Chairman.

For harnessing true potential of seaweeds, TIFAC has initiated steps for commercial farming of seaweeds and its processing for value added products in collaboration with the Ministry of Fisheries, GoI. In another pioneering effort, TIFAC has undertaken to demonstrate and validate the efficacy of new medical sensor devices towards tele-diagnosis. This project has been launched in collaboration with IIT Madras Pravartak Technologies Foundation, Ministry of Health & Family Welfare and C-DAC-Mohali.

TIFAC has strengthened its international reach. Recognizing the mutual benefits of scientific collaboration in a broad field of activities of global concern and interest, TIFAC has taken up a few projects of strategic importance with the International Institute for Applied Systems Analysis (IIASA), Laxeburg, Austria. To leverage the International linkages, a collaborative programme between TIFAC and High School of Economics, Moscow, Russia has been signed to understand the S&T needs of India & Russia in the area of science, technology and innovation policy, measurement and foresight, analysis of innovation systems, R&D and innovation strategies, and developing a strategic partnership on the basis of equality.

Further to emphasize, TIFAC will continue to proactively keep a close technology watch towards informing, assessing, prioritizing and nucleating requisite R&D efforts towards making our country Atma Nirbhar

(Prof Pradeep Srivastava)
Executive Director
TIFAC

ACRONYMS

AAAN: Action Agenda on Atma Nirbhar Bharat
AAQM: Ambient Air Quality Monitoring
AICTE: All India Council for Technical Education
AI: Artificial Intelligence
AIIMS: All India Institute of Medical Sciences
ALR: Augmenter of Liver Regeneration
APAR: Annual Performance Appraisal System
API: Active Pharmaceutical Ingredients
APMC: Agricultural Product & Livestock Market Committee
AQIS: AICTE Quality Improvement Scheme
AQM: Air Quality Monitoring
ASSOCHAM: Associated Chambers of Commerce
ATMA: Assessment of Technology Maturity for Atmanirbharta
BIS: Bureau of Indian Standards
BIPAP: Bilevel Positive Airway Pressure
BRICS: Brazil, Russia, India, China and South Africa
CGCRI: Central Glass and Ceramic Research Institute
CDAC: Centre for Development of Advanced Computing
CFD: Computational Fluid Dynamics
CFRI: Central Fishery Research Institute
CII: Confederation of Indian Industry
CIPAM: Cell for IPR Promotion and Management

CMT: Condition Monitoring Technologies
CNC: Computer numerical control
COVID: Coronavirus Disease
CPCB: Central Pollution Control Board
CPF: Contributory Provident Fund
CRIDA: Central Research Institute for Dryland Agriculture
CSA: Climate Smart Agriculture
CSIR: Council of Scientific and Industrial Research
CGCRI: Central Glass and Ceramic Research Institute
CSMCRI: Central Salt and Marine Research Institute
CVC: Central Vigilance Commission
DG: Director General
DHI: Department of Heavy Industry
DPIIT: Department for Promotion of Industry and Internal Trade
DPR: Detailed Project Report
DRDO: Defence Research and Development Organisation
DST: Department of Science & Technology
e-NAM: Electronic National Agriculture Market
EBTC: European Business Technology Centre
ED: Executive Director
EEZ: Exclusive Economic Zone
EFC: Expenditure Finance Committee
EI: Emission Inventory
EoI: Expression of Interest
ESI: Employees' State Insurance

EV: Electrical Vehicle
FCS: Flexible Complementing Scheme
FGD: Focused Group Discussion
FICCI: Federation of Indian Chambers of Commerce & Industry
FY: Financial Year
GAINS: Greenhouse Gas – Air pollution Interactions and Synergies
GC: Governing Council
GFC: Government Foresight Community
GI: Geographical Indicator
GIS: Geological Information Survey
GIZ: Deutsche Gesellschaft für Internationale Zusammenarbeit GmbH
GPS: Global Positioning System
GW: Giga Watt
GFR: General Finance Rule
GHG: Gren House Gases
GKVK: Gandhi Krishi Vigyana Kendra
GoI: Government of India
HAVC: Heating, Ventilation and Air Conditioning (HVAC) systems
HDPE: High Density Poly Ethylene
HSE: Higher School of Economics
GTWG: Global Technology Watch Group
ICAR: Indian Council of Agricultural Research
ICAR-KVK: Indian Council of Agricultural Research- Kisan Vikash Kendra
ICC: Internal Compliant Committee
ICT: Information and Communication technology
ICMR: Indian Council of Medical Research
ICRISAT: International Crops Research Institute for the Semi-Arid Tropics

IEI: Institution of Engineers (India)
IESA: Indian Energy Storage Alliance
IGP: Indo-Gangatic Plain
IIASA: International Institute for Applied Systems Analysis
IIMC: Indian Institute of Mass Communication
IIP: Indian Institute of Petroleum
IISF: India International Science Festival
IISER: Indian Institute of Science Education and Research
IISU: ISRO Internal System Unit
IIT: Indian Institute of Technology
IoT: Internet of Things
IP: Intellectual Property
IPR: Intellectual Property
IRDPP: Industrial Research & Development Promotion Programme
ISEC: Institute for Social and Economic Change
ISRO: Indian Space Research Organization
ISTM: Institute of Secretariat Training and Management
KIRAN: Knowledge Involvement in Research Advancement through Nurturing
KPO: Knowledge Process Outsourcing
KSCSTE: Kerala State Council for Science, Technology and Environment
LDN: Land Degradation Neutrality
LED: Light Emitting Diode
LINAC-NCDC: Laxmanrao Inamdar National Academy for Cooperative Research and Development - National Cooperative Development Corporation
LULC: Land Use and Land Cover
MAKUT: Maulana Abul Kalam Azad University of Technology

MESSAGix: The Model for Energy Supply Systems and their General Environmental Impact
MISTIC: Mizoram Science, Technology & Innovation Council
MMR: Maternal Mortality Rate
MoEF&CC: Ministry of Environment, Forest and Climate Change
MOSAICC: Modelling System for Agricultural Impacts of Climate Change
MoU: Memorandum of Understanding
MMR: Maternal Mortality Rate
MNC: Multi National Company
MPU: Mobile Processing Unit
MRI: Magnetic resonance imaging
MSME: Micro Small and Medium Enterprises
MSRAUS: MS Ramaiah University of Applied Sciences
NAC: National Advisory Committee
NAPCC: National Action Plan on Climate Change
NCAP: National Clean Air Programme
NCCSD: National Council for Climate Change Sustainable Development and Public Administration
NDC: Nationally Determined Contribution
NDVI: Normalized Difference Vegetation Index
NECTAR: North East Centre for Technology Application & Reach
NEDAC: Network for the Development of Agricultural Cooperatives
NEERI: National Environmental Engineering and Research Institute
NEST: Nature, Environment, Science and Technology

NGO: Non-Governmental Organisation
NIAM: National Institute of Agricultural Marketing
NIAS: National Institute of Advance Studies
NIFT: National Institute of Fashion Technology
NIIST: National Institute for Interdisciplinary
NIPO: National Intellectual Property Office
NIT: National Institute of Technology
NITI: National Institution for Transforming India
NM-QTA: National Mission-Quantum Technology Application s
NML: National Metallurgy Laboratory
NKN: National Knowledge Network
NKRC: National Knowledge Network Consortium
NRF: National Research Foundation
NRSC: National Remote Sensing Centre
OECD: Organisation for Economic Co-operation and Development
PCB: Pollution Control Board
PCC: Pollution Control Committee
PCCoE: Pimpari Chichwad College of Engineering
PCM: Phase Change Material
PFC: Patent Facilitating Centre
PG: Public Grievances
PHC: Public Health Centres
PIC: Patent Information Centre
PoI: Point of Interest
PM: Particulate Matter
PM-STIAC: Prime Minister's Science and Technology Innovation Advisory Council

PPE: Personal Protective Equipment
PPF: Public provident Fund
PPP: Public Private Partnership
PSA: Principal Scientific Advisor
PV: Photo Voltaic
QR: Quick Response
R&D: Research and Development
RCP: Regional Climate Projection
RISE: Research Institute of Sweden
RTI: Right to Information
RT-PCR: Reverse Transcription-Polymerase Chain Reaction
SAKSHAM: Shramik Shakti Manch
RFID: Radio Frequency Identification
RTU: Rajasthan Technical University
S&T: Science & Technology
SA: Source Apportionment
SAB: Strategic Advisory Board
SCADA: Supervisory Control and Data Acquisition
SCSTE: State Council for Science, Technology and Environment
SDAU: Sardar Krushinagar Dantiwala Agriculture University
SDG: Sustainable Development Goal
SEA: Solvent Extractor's Association
SHR: Self-Healing Road
SHWW:Sexual Harassment of Women at Work
SIAM: Society of Indian Automobile Manufacturers
SIDBI: Small industrial Development Bank of India
SIFJ: Steel Integrated Floating Jetty

SIIC:Start-up Incubation & Innovation Centre
SPARROW: Smart Performance Appraisal Report Recording Online Window
SPCB: State Pollution Control Board
STI: Science Technology and Innovation
STIP: Science,Technology & Innovation Policy
SUB: Single Use Bio-reactor
TA: Technical Assistance
TAP: TIFAC Academic Partner
T&D: Transmission and Distribution
TIFAC: Technology Information, Forecasting and Assessment Council
TDB: Technology Development Board
TDS: Tax Deducted at Source
TV: Technology Vision
U5MR: Under Five Mortality Rate
UBI: Union bank of India
UCoST: Uttrakhand State Council for Science and Technology
UAV: Unmanned Aerial Vehicle
UF: Ultra Filtration
UNIDO: United Nations Industrial Development Organization
UNIDO-FLCTD: United Nations Industrial Development Organization - Facility for Low Carbon Technology Deployment
URL: Uniform Resource Locator
USA: United State America
USD: United States Dollar
UT: Union Territory
UVC: Ultraviolet-C
VC: Venture Capitalist
VIT: Vellore Institute of Technology
WoC-C: Women Scientists Scheme
WWF: World Wide Fund
YSSP: Young Scientist Summer Programme

1.0 TIFAC INITIATIVES ON COVID-19

The crisis due to COVID-19 pandemic has compelled the entire world to think about new ways and means of economic activity, business model and particularly health infrastructure. Tackling the situation through country specific capabilities, resources and local skill became the need of the hour. It is pertinent to mention, that Indian economy had already experienced a significant slowdown over the last fiscal year, during which the economy grew at a six-year low rate of 4.7%. COVID-19 pandemic has impacted both demand and supply side elements of the economy, and crashed all hopes for any recovery in the year 2020. Lately across the Ravaging pandemic in 2020 as the globe faced shrinkages in connections and prospects of markets- the World has slowly started rebuilding the blocks under a New Normal perspective.

1.1 White Paper on Focused Interventions for 'Make in India': post COVID -19

TIFAC had taken an initiative to prepare the White Paper on *"Focused Interventions for 'Make in India': post COVID -19"*. The document is an attempt to suggest new models for recovery of Indian economy post COVID-19 based on our national priorities and technological strength. The road to recovery would traverse through measures like Policy support to unconventional strategies, leveraging new international partnerships in areas of strategic importance.

The White Paper has defined requisite technology impetus and policy imperatives for sectors crucial to Indian economy namely: Healthcare, Manufacturing, Agriculture, Electronics and ICT and suggestions on requisite policy recommendations for creating an enabling ecosystem for effecting the transformation. The white paper captures sector-specific strengths, market trends and opportunities that are critical from a country's perspective, with reference to supply and demand, self-sufficiency and production capacity of technologies and products. The impact of COVID-19 on sectors like: Apparel/Textiles, Auto, Aviation and Tourism, Building and Construction, etc have also been highlighted taking into consideration the factors like: labour availability, regular inward stock, critical inward stock, working capital availability, logistics and distribution efficiency. The white paper was released by Dr Harsh Vardhan, Hon'ble Union Minister for S&T, Earth Sciences and Health and Family Welfare on July 10, 2020.

Release of 'White Paper' by Dr Harsh Vardhan in presence of Dr V K Sarswat, Chairman TIFAC & Prof Pradeep Srivastava, ED, TIFAC

Media coverage

Some salient policy shift suggestions and recommendations in the white paper:

- Identify technologies in champion sector: Segment wise solution.
- Affordable Technologies development/downsizing/adoption for rural areas.
- Technology clusters across India for homogenous job creation.
- Identify 10 blockbuster technologies of mass impact.
- Develop incubation start-up highway.
- Create technology start-up exchange.
- Extensive application of Telemedicine for outreach to rural areas on a PPP model.
- Evolve technology platforms in solar technologies, e -vehicle, and agri-processing.
- Technology ready repository to be maintained.

1.1.1 Workshops organized

As a follow up of the release of the white paper, TIFAC organized a series of workshops to curve out action plans on each recommendation which are briefly summarized below:

ACTIVE PHARMACEUTICAL INGREDIENTS - STATUS, ISSUES, TECHNOLOGY READINESS AND CHALLENGES (JUNE 17, 2020)

Recommendations

- The technological and policy support to attain self-sufficiency in API was discussed in the meeting.
- Identified key APIs along with issues related to its indigenous production and readiness/ availability of the technology.
- Identified various reactions & processes required for indigenous production of APIs

INTERVENTIONS FOR AGRICULTURE AND FOOD PROCESSING SECTOR POST COVID-19 PANDEMIC (JULY 29, 2020)

Recommendations

- Creation of value addition and food processing facilities at the production level.
- Integration of weather forecasting with the agro-advisory services
- Augmentaion of bio-economy aspects of agriculture
- Promoting ICT services for providing agro-advisory services in the remotest parts of the country
- Rapid detection kit for control of spoilage and disease & pests at storage.
- Robust and transpaternt supply-chain mechanism using ICT driven technologies.
- Application of circular economy principles to agriculture focusing on resource conservation and soil fertility management

THEMATIC WORKSHOP ON 'BIOPHARMACEUTICALS, VACCINES & DIAGNOSTICS (AUGUST 18, 2020)

Recommendations

- A strategy to make India a self-reliant in the areas of biopharma, vaccines and diagnostics.
- Identification of innovative manufacturing, academia-industry collaboration and open innovation
- Development of platform technologies, establishment of the state-of-the art pilot manufacturing facilities, contract manufacturing, single window clearances, institutional skill development etc.

THEMATIC WORKSHOP ON 'MEDICAL DEVICES (AUGUST 18, 2020)

Recommendations

- To create an understanding on the needs of Indian medical devices industry
- Focus on initiatives, actions and needs and identifying suitable solutions to make India truly Atmanirbhar on front of product & services, technologies, requiste infrastructure, new policies and capacity building, investments etc.
- Emphasizing stronger interaction between academia and industry, more understanding and focus on designing of medical equipment and their validation
- Identified technologies like: robotics, Micro Electromechanical Systems (MEMS), 5G, 3D & 4D printing, implantable nanosensors, lab on chip, bionics, micropower, machine learning, drones etc.

INTERVENTIONS FOR AGRICULTURE AND FOOD PROCESSING SECTOR POST COVID-19 PANDEMIC (AUGUST 20, 2020)

Recommendations

- Indigenous development of following machines for higher efficiency precision manufacturing locally:
- CNC controllers for lathes, grinders, cutters, turn-mill machines with multi-tasking abilities for grinding, gear cutting, hardening operations etc.
- Promotion of 3D printing centres for prototyping and designing
- Support for indigenous production of precision plasma steel cutting system with robotics for 2D and 3D cutting job.
- Focus on developing C-type Machine to optimize machine structure and ribs distribution for stable machining precision on cutting.
- Dry gear hobbing and multiple diameter gear shaping machines with high cutting rates

POST COVID OPPORTUNITIES FOR INDIAN ELECTRONICS AND INFORMATION & COMMUNICATION TECHNOLOGY SECTORS (SEPT. 04, 2020)

Recommendations

- Development of indigenous technology for PCBA, display, battery etc.
- Manufacturing of routers, switches, optical fibres etc & peripheral electronic equipment for broad band connectivity.
- Initiatives for production of micro-electro-mechanical systems (MEMS) and sensors, light-emitting diode (LED) and flexible display technologies for 5G, IoT and IIoT.
- Semiconductor Manufacturing
- Develop an ecosystem for chip design and development in which start-ups, R&D institutions and academia can actively participate in association with Indian industry.

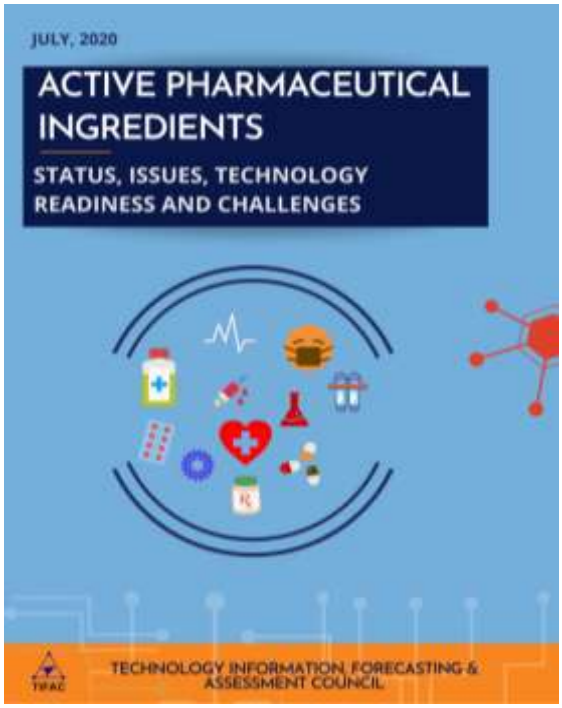
1.2 Report on Active Pharmaceutical Ingredients.

The pharmaceutical industry in India is third largest in the world, in terms of volume, behind China and Italy, and fourteenth largest in terms of value. It has a strong network of 3,000 drug companies and about 10,500 manufacturing units with a domestic turnover of Rs.1.4 lakh crore (USD 20.03 billion) in 2019, with exports to more than 200 countries in the world.

Despite a very strong base, due to low-profit margins and non-lucrative industry, domestic pharmaceutical companies have gradually stopped manufacturing APIs and started importing APIs, which was a cheaper option with increased profit margins on drugs. With the availability of cheaper APIs from China, the pharmaceutical industry relies heavily on imports. The imports from China have been increasing steadily and now stand around 68%. To address this, TIFAC has recommended policies to address the requirement of APIs in short & medium-term to make our country self-reliant.

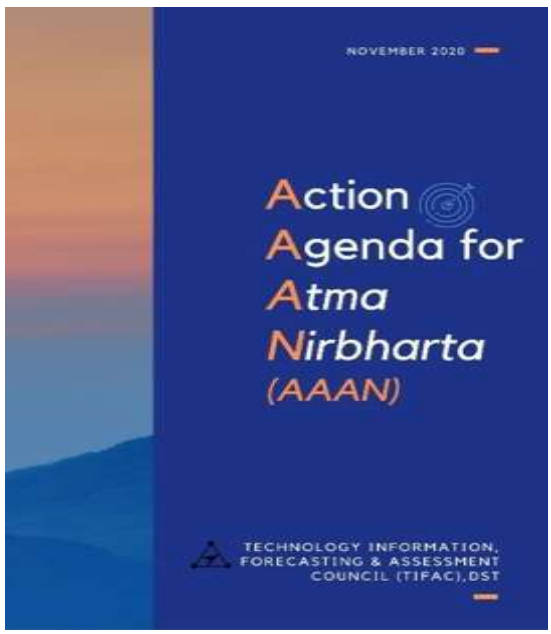
Indigenous production of **Active Pharmaceutical Ingredients (APIs)** needs to be scaled up to a level where the production is economically viable, says a report which identified a list of APIs that need prioritized manufacturing and the associated advantages.

The report titled '***Active Pharmaceutical Ingredients- Status, Issues, Technology Readiness, and Challenges***' was published & released by Dr Harsh Vardhan, Union Minister for Science & Technology, Health and Family Welfare and Earth Sciences at a virtual function on July 10, 2020. Dr V K Saraswat, Member, S & T, NITI Aayog & Chairman- TIFAC GC, Prof Pradeep Srivastava, Executive Director-TIFAC, Shri Sanjay Singh, Scientist 'G' and Shri Mukesh Mathur, In-charge (F&A), TIFAC were also present on the occasion.



Release of API Document

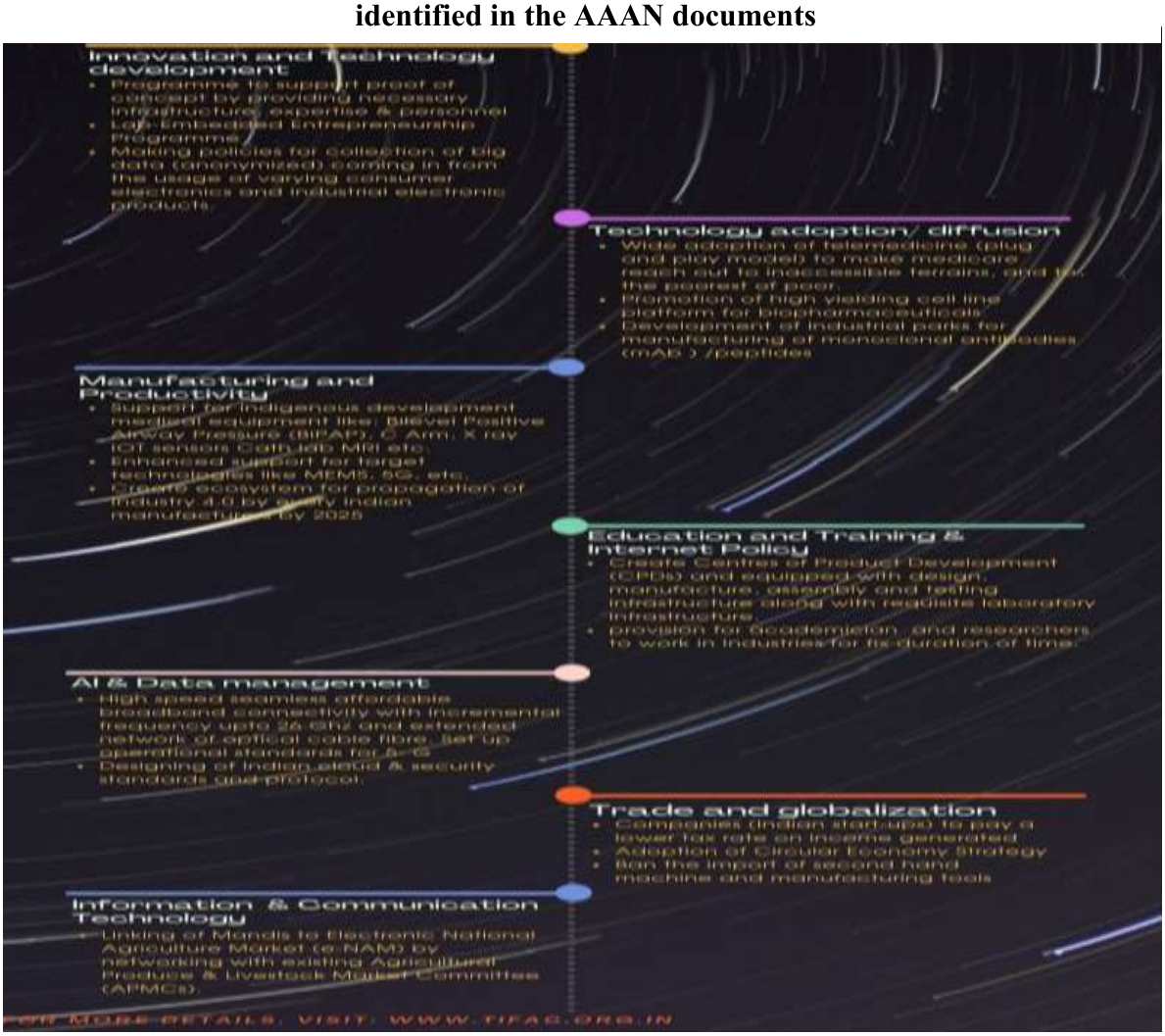
1.3 Action Agenda for AtmaNirbhar Bharat (AAAN) Document



As a follow-up of White Paper document, a need was felt for preparing a sector specific comprehensive action plan document towards bringing the Indian economy on track. Thus, TIFAC has worked with sector specific stakeholders extensively involving Industry, Academia, R&D Institutes and Policy makers and prepared the document titled 'Action Agenda for AatmaNirbhar Bharat (AAAN)'. The document was released by Dr Harsh Vardhan, Hon'ble Union Minister for S&T, Earth Sciences and Health and Family Welfare on 29th December 2020.

The AAAN document has been structured with reference to timeline, highlighting short, medium and long-term technology and policy interventions in key sectors (Healthcare, Machinery, ICT, Agriculture, Manufacturing, and Electronics). The recommendations are briefly summarised below:

Major Highlights of the follow-up workshops held in 5 sectors identified in the AAAN documents



The above recommendations are focussed to push the Make In India momentum bringing transformational changes in the working methodology and translate new technologies and products towards achieving "Atma Nirbharta ".

1.4 Shramik Shakti Manch (SAKSHAM) Portal

The COVID-19 pandemic and imposed lockdowns caused reverse migration of millions of Shramiks (blue collared workers) all across the country, leading to acute misery and hardship. TIFAC has taken up a project for development of a dynamic portal for mapping of skills of Shramiks vis-a-vis requirements of MSMEs and other industries. The objective of the project is to address the immediate need of these shramiks for their gainful employment and at the same time to support the MSMEs and other industries to learn about the region/district wise availability of skilled/semi-skilled shramiks as per their requirements. The portal (SAKSHAM) is to provide a platform to shramiks as well as industries, where the available skills can be highlighted and utilised by the industries on a need based rational approach. There is a WhatsApp Chat bot used with missed call service. The portal with the data (demand and supply) uses artificial intelligence based algorithm and logic being integrated with the system, so that it would not only provide region wise information on demand and availability of shramiks, but also analysis on skill match, skill gap, skill diary, recommendations on skill training programmes, etc.

TIFAC has filed an application for registration of SAKSHAM logo. The logo was designed by TIFAC as below:

1.4.1 Salient Features of SAKSHAM

- Dynamic portals for the following stakeholders:
  - ➢ Shramiks- the portal is built on WhatsApp chat where the Shramiks can chat with a bot and share their current work status and their supply of skills with preferred locations.
  - ➢ Industries- the portal is built as a web application for industry representatives to log in and see the availability of shramiks across India, while also sharing their requirements; with the option to connect with "relevant" shramiks based on their workforce hiring needs and the consent of matching shramiks for the same
  - ➢ Administrators and Policymakers-the portal is built as a web application for government representatives to see the spread of shramiks across India on a GIS dashboard, along with demand by industries, with skill evaluation done for each shramik based on which supply-demand mapping of skills were done. Also, the portal is able to show skill development needs across regions of India.
- Information collected from Shramiks and evaluation of skill proficiency for each shramik is being done:
  - ➢ A total of 65,000+ shramiks went through a complete skill evaluation process, with the full profile of their skill proficiency known. These have a higher

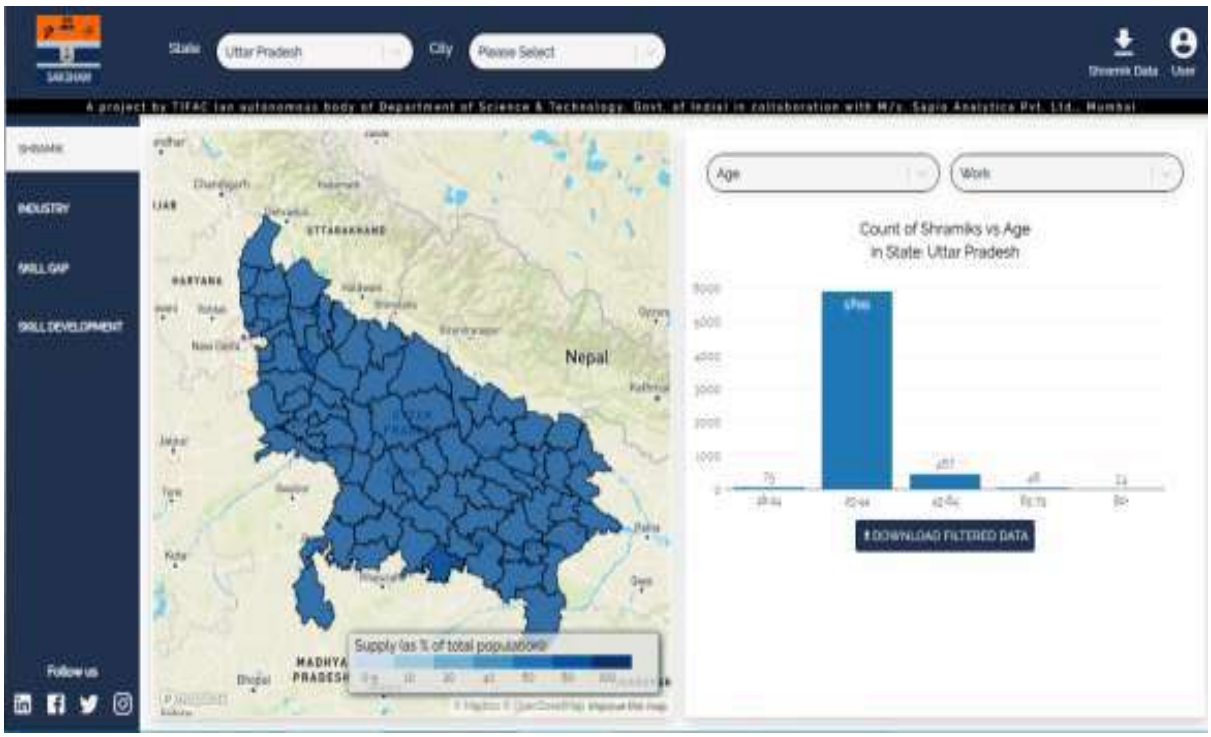
chance of placements with companies. These shramiks represent 719 unique districts of India, covering the entire country. The numbers are dynamic.

- A total 250,000+ shramiks registered representing 720 unique districts of India, covering the entire country. The numbers are dynamic.
- Hindi, English and Marathi were used as languages of communication.

- Information collected from companies and evaluation of their needs is being done, besides giving them opportunities to contact the relevant workforce:
  - Companies from all across India, representing 595 unique locations (based on PIN Codes) have registered
  - The language of communication with companies is English and through extensive use of graphical user interface
  - The total number of registered companies is dynamic and is more than 940. More than 90% are MSMEs, with around 50% identifying themselves as small enterprises.

- Pilot Mapping of Jobs is in progress.

  The portal has been developed and launched on pan India basis on the occasion of TIFAC Foundation Day on February 10, 2021. Phase-II of SAKSHAM is being planned to enhance its outreach to enable it to help in placement of blue collared workers.



(SAKSHAM Web Portal)

2.0 TECHNOLOGY FORESIGHT & VISION

Foresight and Vision division of TIFAC is primarily engaged in the preparation of technology vision documents, technology foresight reports, follow up actions on the recommendations of vision document, preparation of need-based reports, capacity building on technology foresight techniques and leveraging international cooperation with premier technology foresight institutes around the globe. The Technology Vision 2035 document brought out by TIFAC had identified several upcoming technologies and categorized them into four groups as per their readiness level. During the year, several foresight reports were prepared on the selected technology area to bring out insights on such technologies to facilitate policymakers, researchers and other stakeholders to make decisions for the adoption of such technologies.

2.1 Technology Vision 2035

TIFAC initiated an assessment study to compare the set goals in the TV 2035 documents versus real progress made so far with respect to the quality of life of Indian citizens. A brief account of the activities taken up during this year is presented below:

2.1.1 Retrospection Analysis

A study was carried out to understand the achievement made so far during the last 5 years against each target set to quantify the life of people in 2035. A summary of Indians' aspirations in 2035 w.r.t progress made and targets achieved are given below:

Table 2.1 :Indians' Aspirations in 2035 w.r.t Progress Made and Targets Achieved

S. No.	Indians' Aspirations by 2035 (Individual/Collective)	Progress Made/Target achieved so far
1	Zero School Dropout	Secondary School Drop out over 17% Upper primary (VI-VIII) and primary level drop out is 1.8% & 1.5% respectively.
2	**100% literacy, including knowledge of devices, instruments and machines**	**Rural Areas Literacy = 73.5% Urban Areas = 87.7% (2020)**
3	Primary health centre in every gram panchayat with remote access to specialities and super-specialities	24,855 PHCs in 2,50,000 Gram Panchayats (2019)
4	**Multi-speciality hospital in very district with air ambulance and trauma care services**	**304 Speciality & Super Specialities in 739 Districts (2020)**
5	Helipad in every panchayat	1,141 Civil Heliports out of 2,50,000 Gram Panchayats (2019)
6	**Zero Pedestrian fatalities**	**151,113 deaths and 451,361 injuries (2019)**

7	No Indian is undernourished	14% of the population are undernourished (2020)
8	**No Indian woman and child is anaemic for want of proper nutrition**	**66.4 % of Women 68.4 % of Children are anaemic (2019)**
9	Maternal mortality rate (MMR) of not more than 15 per 100,000	100 MMR per 100,000 (2020)
10	**Total power generation of 1000GW at the national level of which 50% be from renewable sources**	**384.11 GW Installed Power generation (38.41% of the target) out of which 37.30% from renewable (2020)**
11	Public transport within one km from home	22% Indians travel 2-5 Kms to avail public transport
12	**Zero slums**	**35.2 % Population are living in slums (2018)**
13	Ubiquitous internet connectivity	57.7% of Population is actively using internet (2021)
14	**Digital identity to all citizens lined with health, education, employment and services**	**99 % of adult population in India above age of 18 have a digital identity / Aadhaar Cards (2021)**
15	Zero wastage of food	up to 40% of the food produced in India is wasted (2019)
16	**U5MR not more than 6 per 1000**	**U5MR 35.73 per 1000 live births (2020)**
17	Average life expectancy of 80 years at birth	Life expectancy at birth for India: 69.89 years (2020)
18	**Transmission and distribution losses for electricity less than 3%**	**Over 20% T&D Losses for electricity (2021)**

2.2 Foresight Studies

TIFAC initiated several foresight studies and the following six studies are underway:

2.2.1 Climate Smart Agriculture

Considering the importance of the agriculture sector and its vulnerability to climate change, *Climate Smart Agriculture* has been taken up in TIFAC to prepare a detailed foresight report. The Report brings out a comprehensive analysis of the current and future vulnerabilities of the Indian agriculture system to climate change that identifies specific interventions/schemes/approaches needed to be taken up on a stand-alone basis or mainstreamed into the existing schemes of GOI. The study comprises mapping technologies according to the climate vulnerability map prepared by ICAR and subsequently revised in 2019, as per RCP6. The overarching objective of this study is to strengthen India's capacity in achieving NDC targets for the agriculture and land-use sectors through improved use of scientific information in sector planning and enhanced public and private sector engagement in accelerating CSA initiatives. The study is ongoing in consultative mode involving eminent experts from various sectors, i.e., public and private agencies.

The National Advisory Committee (NAC) has identified and documented an array of advanced technologies in Climate-Smart Agriculture across different sub-sectors of agriculture like, dairying, livestock farming and fisheries. The advanced technologies in the domain of CSA are categorised broadly as, Next-generation climate services for smart agriculture, Climate ready crops and varieties, Water Management Technologies for Climate Smart Agriculture, Nutrient Management for climate-smart agriculture, Climate-smart carbon and energy management, Protected cultivation & vertical farming; Climate-smart livestock production and Climate-Smart Fisheries and Aquaculture.

Formulation of strategies to upscale climate-smart agriculture and solutions to tackle upscaling, wider deployment and adoption of CSA technologies at the farm level has been decided based on the technologies identified under the study. The outcome of the study would help in the promotion of CSA and bring its potential to the notice of nodal ministries and line departments. It plays a significant role in formulating enabling policies, helping in projecting investments required and developing collaboration among stakeholders to boost CSA technologies through its promotion and investments for sustainable development in the agriculture sector.

2.2.2 Controlled release Fertilizers: Prospects, Problems and Policy

The growth of Indian Agriculture has been quite promising. However, it faces twin challenges, increasing production and productivity along with profitability of farming on one hand and maintaining the environmental security and sustainability through resource use optimisation on the other. Rampant use of soluble nitrogenous fertilisers is causing not only soil degradation but also increasing both air and water pollution. The most obvious solution is to apply fertilisers which supply nutrients as per the need of plants.

The speciality of Controlled release (CR) fertilisers lies in release of individual nutrient to match the respective nutrient uptake rates of a crop. The property of controlled release can be introduced by either providing a physical barrier between the nutrients and the soil which slows down the transfer to solution phase or by using chemical forms of nutrients that help in solubilising slowly. A coating can be applied on customised fertilisers to release the nutrients at a slow rate to match the individual uptake rates.

The study on *"Controlled Release Fertilizers: Perspectives, Challenges and Policies"*, captures global vis-à-vis national status of the research on Controlled release of fertilizers, types of CR fertilizers currently being used, probable scenarios to understand the impact of replacement of conventional fertilizers in different proportions by customized/controlled release fertilizers on crop production, farmer's income, etc. The report highlights brief recommendations in terms of future research areas and policy issues. It is expected that the policy issues and research agenda flagged in this report would receive consideration of Research Community, Government and Fertilizer Industry to initiate different programmes for large scale adoption of such types of fertilizers.

2.2.3 Self-Healing Roads

As a follow up to the release of the Technology Vision 2035 document, TIFAC has initiated a foresight study on the topic 'Self-Healing Roads (SHR)'. The SHR is one of the technologies identified in the Technology Vision 2035 document. The study aims to analyze various available materials having self-healing property for Indian roads w.r.t. strength, sustainability, longevity, cost effectiveness, environmental friendliness etc. The report would capture the need for self-healing roads, global and national R&D status, technology trends in the application of materials and methods of construction, technology gaps, life cycle and cost analysis, implementation plan and key recommendations. Report preparation is under process.

2.2.4 Current Trends in Telemedicine in India

Among a few priority areas identified in the White Paper titled "Focused Interventions for *'Make in India' – Post COVID-19* paper, "Telemedicine" has been identified as one of the important areas. A study on "Current Trends in Telemedicine in India" has been initiated to analyze current global and Indian trends in Telemedicine technologies, emerging future technologies trends, best practices, strategies, techno-economic feasibility and policy issues for development and deployment of advanced telemedicine technologies in India.

2.2.5 Vertical Farming v/s Horizontal Farming – a Comparative Analysis

A study on "Vertical Farming vs Horizontal Farming – a comparative analysis" was initiated in 2020 to analyse vertical farming technology in comparison with the conventional/horizontal farming by identifying the needs, constraints, implementation opportunities and possible alternative approaches and highlighting the potential of vertical farming technology as possible option for food and nutritional security in India. It gives a status of vertical farming technology in India and world, its impact on climate change. The study also provides information on Intellectual Property in vertical farming, market trends and entrepreneurship related information and growth projections.

Vertical farming ensues indoor farming by way of employing cutting-edge technologies. Now Vertical farms, which are multi-storey, are a reality and have taken up space in the heart of the world's prominent urban centres. If successfully implemented, vertical multilayer farms would lead to food production by providing safe, nutritious and a wide array of food sustainably. Vertical farming is focused on a reduce, reuse and recycle approach. Besides technological advantages, it has added environmental and social benefits. Some of the salient findings of the study are given below:

- Production of vegetables and leafy greens throughout the year independent of weather/climatic conditions.
- Reduction or no use of chemical pesticides and herbicides. Bio-control agents can be effectively used.
- Protection of crops from extreme external environmental conditions because the plants are grown in a controlled environment.
- The method of hydroponic techniques of cultivation helps in conservation of around 70% of water over conventional agriculture and water is recycled efficiently.

The study also infers that Vertical farming technology presently has limitations; it is predominantly used to grow fresh leafy vegetables, soft fruits and herbs, leafy greens and microgreens, even though it is being practiced by many industry experts as an innovative method that could replace arable farming in future to meet the demand of new food choices. In India, vertical farming is still in its nascent stage but has a potential to be speciality agriculture by growing foods such as microgreens, leafy greens and high value food crops. Though, it cannot replace mainstream arable agriculture but can make its place as an innovative form of growing foods. Advancement in technology and availability of materials will enable lowering down the capital investments and with the improvement of variety of crops to grow in vertical farming conditions will ease, vertical farming can become a more mainstream and remunerative option of growing food. A lot of new and advanced technologies will drive the vertical farming industry and with adoption of high-value crops combined with reducing capital investment, it will become more remunerative. The study report is under finalisation.

2.2.6 Technology Foresight Study on Micro Nano Manufacturing

Micro nano manufacturing based technologies would have cross-cutting impact and applications in all the key sectors and has direct relevance to the sectors identified in Make in India Scheme which includes automobiles, aviation, construction, defence manufacturing, electrical machinery, automobile components, space, textiles, food processing, electronics systems etc.

Micro nano manufacturing is also one of the emerging technologies prominently captured in both Technology Vision 2035 document and the technology roadmap on Manufacturing. Understanding its immense potential in Indian manufacturing system, a foresight study on Micro Nano manufacturing has been initiated in TIFAC.

The technology foresight study would cover sub areas such as Micro additive Manufacturing- (Metal/Polymer), Micro Machining, Micro/Nano finishing, Nano coatings etc. In each of the sub areas, the current status, competence in India, Institutions/Organisations dealing in this domain, processes, gaps in terms of technology, infrastructure and skill sets would be detailed. Further, future trends, opportunities and policy interventions have also been covered. The outcome of the report would be a useful feeder to DHI. The draft report is under finalisation.

2.3 Impact Assessment of TIFAC Reports

Since inception in 1988, TIFAC has been playing a crucial role in networking with various stakeholders in the technology domain by preparing several specialised reports related to Technology Foresight, Technology Assessment, Technology Vision, Techno Market Survey reports etc. These reports are used as a referral document by many stakeholders. Technology Vision 2020 and Technology Vision 2035 documents are two long-term foresight documents which have laid down the technology path for the nation.

Hon'ble Union Minister for Science & Technology directed TIFAC to assess the impact of such foresight reports, prepared by TIFAC in the last 10 years on Indian

economy, society and technology development. Accordingly, a study has been initiated with an aim to assess the impact of TIFAC Reports published since 2011. TIFAC study reports are mostly of two types: macro-focussed and micro-focussed. The impact is being assessed based on whether the study report facilitated in bringing out policy, product development, actions taken by other stakeholders etc. The impact assessment report is likely to be completed by October, 2021. The list of reports/studies undertaken for the impact assessment is appended below:

Table 2.2 : List of TIFAC Reports Being Studied for Impact Assessment Study

S.NO	TITLE OF REPORT
	IIASA Programme
1.	Greenhouse Gas and Air Pollution Interactions and Synergies (GAINS)-Model for Indian Cities *Development and Application of GAINS-City Model for Indian Cities* (National Environmental Engineering and Research Institute (NEERI), Nagpur)
2.	Modelling of Soil Nutrient Assessment Programme (SNAP): Developing a Decision Support System for Sustenance of Soil Fertility in Humid Tropics of Kerala (CWRDM, Kerala)
3.	Climate Change Adaptive Behavior for Sustainable Livelihoods (Institute of Rural Management Anand (IRMA), Ananad)
4.	Indian Perspectives on Global Energy Scenarios Till 2050 (Integrated Research and Action for Development (IRADe), New Delhi)
5.	Economics of Conserving Agro-biodiversity and Ecosystem Management: A Study In Indian Agro-climatic Sub-Zones *with Institute for Social and Economic Change (ISEC), Bangalore*
6.	Livelihood Issues for Sustainability of Water Management *Integrating hydrology, climate change and IWRM with livelihood issues: Development of methodology and a DSS for water-scarce Bundelkhand region in India* (NIH, Roorkee)
	Srijan Programme
7.	Solar PV - Technology Foresight for India
8.	Commercial Scale Food Processing Technologies pertinent to Malda Cluster- An attempt towards Rainbow Revolution
	TFAR Programme
9.	R&D Plan for the Technology Platform on Electric Mobility: National Mission for Electric Mobility
	Technnology Vision 2035 Programme
10.	Technology Vision 2035
11.	Technology Vision 2035: Technology Roadmap- Materials
12.	Technology Vision 2035: Technology Roadmap- Manufacturing
13.	Technology Vision 2035: Technology Roadmap- ICT
14.	Technology Vision 2035: Technology Roadmap- Transport
15.	Technology Vision 2035: Technology Roadmap- Water

16.	Technology Vision 2035: Technology Roadmap- Education
17.	Technology Vision 2035: Technology Roadmap- Medical and Health Care
	Bioprocess & Bioproducts Programme
18.	Methanol & DME Production Survey & Roadmap – Published in February 2018
19.	Methanol & DME Utilization Survey & Roadmap - Published in February 2018
20.	Seaweeds Cultivation and Utilisation- Prospects in India –Published in October 2018
21.	Spatial information system on biomass potential from crop residues over India using geospatial techniques
	MSME Programme
22.	Technology-Gap Study on Sarees Cluster
23.	Technology Gap Study on Rice Cluster
24.	Technology Gap Study on Jhula Cluster
25.	Technology Gap Study on Toys Cluster

2.4 Technology Foresight Study on Electric Mobility

TIFAC initiated several studies on electric mobility under the automotive and transportation sector aiming at catalysing and nucleating technology development reports. Activities under this programme involve the following:

2.4.1 Bottom up Model for Forecasting Penetration of Electric 2/3 Wheelers in India

TIFAC and NITI Aayog have jointly taken up development of an agent-based model to estimate the year-wise market penetration scenarios of electric 2/3 wheelers up to 2030. This will also result in a report with analysis of the implications of infrastructure and policy measures, taking into consideration readiness and future plans of the industry.

2.4.2 Wireless Opportunity Charging of Electric Buses Using Solar Energy

The basic idea of this study is to explore how electric public transport, wireless charging, opportunity charging and solar energy utilization can be combined to achieve sustainable transportation solutions with enhanced lifecycle benefits, reduced congestion, higher road utilization which will outline the implementation plan for a demonstration project integrating these technologies.

2.4.3 Impacts of Electric Mobility

This study focuses on analysis of various impacts of electric mobility such as projected future demand for critical materials considering state-of-the-art as well as emerging technology options, impacts on the distribution grid and electric power sector, economic and social impacts. A model has been developed for estimating the requirement of critical materials for various technology choices. Work has also been carried out on lifecycle analysis for various categories of electric vehicles. A draft report has been prepared on estimation of demands for the critical materials.

2.4.4 Electric Road Systems

Electric mobility needs to overcome issues such as “range-anxiety” and high vehicle cost, mainly caused by the limitation of present-day on-board energy storage

technologies. The Electric Road System is an emerging alternative concept which aims to address this issue by introducing technologies for transferring power to the vehicle when it is on the move. It evaluates various options for Electric Road Systems in Indian context. Analysis of technology readiness level and comparison of the technology choices and their application perspectives have been carried out.

2.4.5 Technology Foresight Study on Emerging Energy Storage Technologies

The objective of this study is a systematic analysis on various emerging energy storage technologies from Indian perspectives and to identify the priorities, challenges and expected impacts. The draft report discusses technology trends, patents analysis and technology readiness levels for various emerging energy storage technologies.

2.5 Thematic Foresight Studies

TIFAC, as per its mandate, has initiated following studies during the year 2020-21:

2.5.1 Technology Foresight study on Opportunities for Fruits and Vegetable Processing for North Eastern region of India

Technology Foresight studies were initiated for six sectors of Food Processing focusing on the North Eastern region of India. The study on "Opportunities for Fruits & Vegetables processing for North Eastern Region of India" was completed and the report was released on 10th February 2021, the TIFAC Foundation Day. The North Eastern Region accounts for about 5.1% of fruits and 4.5% of vegetables in the national scenario with 10 fruits recognized with G.I. tags. The report has broadly identified areas for technology interventions in fruits & vegetables processing in the North Eastern region and recommended a technology roadmap for North East in short, medium and long term to catch up with the national benchmark. The report also identified horticultural crops having good market potentials and technology solutions to convert into value added products with higher self-life.

Release of report

Based on recommendations in the report, preparation of detailed action plans towards demonstration of "Mobile Processing Unit (MPU)", a micro/small scale food industry fully equipped with processing equipment has been conceptualized for processing of fruits and vegetables on wheels at the doorsteps of medium and small holding farmers to reduce wastage and enhance income during glut of production.

2.5.2 Study on 'Techno-Economic feasibility Study on Indian Bamboo : A wood Substitute'

With over a hundred and thirty six recorded species, distributed across nine million hectares, India ranks only behind China in the diversity and dispersal of bamboo. Bamboo occurs naturally in all of India, except in Jammu and Kashmir. The most profuse areas are in the North East, the Andaman and Nicobar Islands, the Himalayan foothills and the Terai,

Chattisgarh, Jharkhand and the Western Ghats. The growing stock is estimated at 80.4 million tonnes, two thirds of it in the North East, and four fifths comprising three main species: Dendrocalamus strictus (53%), Bambusa arundinacea (15%) and Melocanna baccifera (15%).

The technological & economic feasibility for bamboo based construction materials and other products need to be established towards development of their value-added applications. Thus the study was taken up to prepare a '*Technology Dossier'* for the bamboo industry and research organizations in India to identify R&D priorities and also for providing directions towards cleaner, safer, more efficient & economic manufacturing options for the usage of Bamboo as wood substitute.

The study covers the technological & economic feasibility for bamboo based materials towards development of their value-added applications. The study has listed out the total no and type of bamboo species available in India and its location specially in north East, assessed the technical capabilities of major institutions/agencies working in the industrial applications of bamboo in North East and detailed out the various products including composites with potential demand in the domestic market for new applications. Various machines/equipment required for bamboo products manufacturing and International standards, reforms, policy changes needed are also covered in the report. The report was released on February 10, 2021, in the event of TIFAC Foundation Day.

2.6 DPR for National Mission on Quantum Technology Applications (NM-QTA)

Over 200 experts were consulted to provide input in preparing the DPR on NM-QTA. The EFC Memo submitted by DST along with DPR prepared by TIFAC is under circulation for concurrence of the concerned departments & agencies.

The DPR flesh out ambitious vision of the government in having identified quantum technologies as a priority area with Rs.8000 crores earmarked for its development in the annual union budget for 2020-21.

Different verities of Bamboo Species

3.0 NURTURING INNOVATION

TIFAC in its efforts nurturing innovation provides support including Intellectual Property Rights facilitation, scaling up of indigenous developed technology innovations by start-ups / MSMEs / young entrepreneurs through Srijan and Atma programmes.

3.1 Intellectual Property Rights (IPR)

The Intellectual Property Rights (IPR) Division of TIFAC continues to implement two programmes of DST, namely; Patent Facilitating Centre (PFC) and Women Scientist Scheme-C (WOS-C) popularly known as KIRAN-IPR. The scheme provides one year hands-on training on IPR to women scientists who were away from S&T due to domestic issues.

3.1.1 Patent Facilitating Centre (PFC)

The PFC was established by DST at TIFAC with four-fold objectives of creating IPR awareness and deeper understanding of patents and IPR in the country, facilitating filing, obtaining and maintaining patents on a sustained basis, providing patent information as an input to R&D and handling IPR policy matters. PFC provides full legal, financial and technical support in filing, prosecuting and maintenance of patents in India and abroad. PFC also conducts a number of workshops and training programmes on IPR. A regular patentability assessment, patent analysis and policy inputs are generated from time to time and on a case to case basis.

3.1.2 IP Facilitation/Filing

PFC continued its efforts of IP/Patent facilitation, filing and prosecuting on behalf of academic institutions and government R&D institutes. It has assessed and found 33 new cases patentable and accordingly processed them for filing through its panel of patent attorneys. In addition, four design registrations and two copyright cases were also processed for filing. The cost of filing these patents is borne by PFC-TIFAC and patent/IP applications are filed in the name of the inventing institute(s). PFC conducts thorough in-house patentability assessment for all the invention disclosures received by it. During the year, 20 patents were granted in India, details given in the Table-3.1 PFC facilitated filing and prosecution of these patents.

Table 3.1: List of the Patents Granted in India Facilitated by PFC

S. No	Patent Number	Date of Grant	Applicant	Title
1.	343590	07.08.2020	Tezpur University, Tezpur, Asam	Novel soil conditioners
2.	342782	29.07.2020	Indian Institute of Technology, Kharagpur	Method or apparatus to detect the micro-calcifications in X-ray images using nonlinear energy operator

3.	346112	04.09.2020	1. Anna University, Chennai and 2. University of Hyderabad, Hyderabad	Solution grown organic single crystal n- benzyl-2-methyl-4-nitroaniline and a method of growing thereof for terahertz applications'
4.	346678	14.09.2020	PEC University of Technology, Punjab	One pot synthesis of a new series of acyloxy-amide and acylamino-amide dihydropyrimidone derivates
5.	347173	20.09.2020	Indian Institute of Technology, New Delhi	A method of evaluation and grading of textile or fabric or garment appearance
6.	348017	28.09.2020	Rajagiri School of Engineering & Technology, Ernakulam, Kerala	High speed microprocessor design and implementation
7.	349459	16.10.2020	Bhavnagar University, Bhavnagar, Gujrat	Method for coating nano-magnetic particles with pharmacologically active substance
8.	349884	22.10.2020	Indian Institute of Technology, New Delhi	An apparatus and method for wireless personal area network and wireless body area network using magnetic coupling
9.	350155	27.10.2020	Punjab University, Chandigarh, Punjab	Novel nano emulsion/ self nano emulsifying drug delivery system for enhanced oral bioavailability of hydrophobic selective ß1-adrenoreceptor blocker
10.	352126	24.11.2020	Guru Nanak Dev University, Punjab	Aza-heterocycle based compounds as highly effective anti-inflammatory agents
11.	352616	27.11.2020	Indian Institute of Technology, Kharagpur	A low cost, portable and drift corrected semiconducting metal oxide gas sensor device and process for domestic and industrial applications
12	353566	14.12.2020	University of Delhi, Delhi	A sustained release and long residing opthalimic formulation
13	354372	23.12.2020	Panjab University, Punjab	validated hptlc and stability indicating hplc method for prasugrel hydrochloride
14	357666	03/02/2021	North Eastern Hill University, Shilong	Synthesis of bis(di-2-{(e)-4-hydroxy-3-[(e)-(p-tolylimino)

				mythyl]phenyl)diazenyl}benzoate) tetra-n-butyl distannoxane
15.	358408	11.02.2021	Amal Jyothi College of Engineering, Kanjirappally, Kottayam Dt., Kerala	Low Cost Pepper Separator
16.	360050	02.03.2021	Chaudhary Devi Lal University, Haryana	A process for preparing a hairy root culture extract of ficus religiosa l. having induced acetylcholinesterase inhibitory activity and composition thereof
17.	360290	04.03.2021	Indian Institute of Technology, Delhi	A hydro-power system
18.	361933	18.03.2021	Indian Institute of Technology, Kharagpur	A crestless bread baking oven
19.	362515	22.03.2021	Viswajyothi College of engineering & Technology, Ernakulum, Kerala	A hand held automated rubber tapping device for removal of bark from rubber trees
20.	362890	24.03.2021	Panjab University, Punjab	Cocrystals of aceclofenac

3.1.3 Training Programmes and Workshops

Due to the pandemic, all training and awareness activities were conducted online in webinar mode on TIFAC's Cisco WebEx platform. During the year, seven such programmes were organised besides regular talk by division officials in various programmes.

a) Training programme on IPR in association with DST, Government of Rajasthan for Universities in Rajasthan starting from April 16, 2020, to April 21, 2020.
b) Webinar Series "IPR through patent, copyright and trademark" being organized by TIFAC during June 23-26, 2020, in association with Goa State Council of Science and Technology, Goa.
c) A 2-day joint webinar on "Intellectual Property Rights" organised in association with Pushpa Gujral Science City, Jalandhar Kapurthala Road, Punjab during July 15-16, 2020.
d) A 2-day joint webinar on "Intellectual Property Rights" organised in association with Mizoram Science, Technology & Innovation Council (MISTIC), Aizawal, Mizoram during August 10-11, 2020.
e) A 4-day joint webinar on "Intellectual Property Rights: Fundamentals and its importance in present context" organised in association with Uttarakhand State Council for Science and Technology (UCOST), Deharadun, Uttarakhand during September 08-11, 2020.
f) A virtual session on "Race against Coronavirus" in association with European Patent Office and European Business Technology Centre (EBTC)

was organised on November 25, 2020. ED TIFAC and officials of IPR division presented the work done on Covid-19 related technologies in patent documents.

Virtual Session on "Race Against Coronavirus

g) A webinar series on IPR starting from January 18, 2021 to March 24, 2021 were organized with Patent Information Centre, Kerala. It had six components and each component was covered in different weeks during the said period:

- Overview of IPR,
- IPR Management in Biotechnology,
- IPR Management in Pharma,
- IPR Management in ICT,
- IPR Management in Agriculture and allied fields and
- IPR & Entrepreneurship.

IPR Division officials have conducted 2 to 3 sessions in each of the above programmes by delivering lectures or hands on sessions in house besides talks by invited faculty. In addition to the above programme, IPR Division Officials delivered more than 15 talks on IPR in different webinars as details given in invited lectures by TIFAC officials.

3.1.4 Film on Geographical Indication (GI)

A 20 minutes film was made based on GIs registered in India by PFC-PIC network. The film was showcased on the virtual platform at India International Science Festival, 2020.

3.2 Women Scientists Scheme (WOS-C) KIRAN-IPR

Women Scientist Scheme (WOS-C), KIRAN-IPR is a flagship programme of KIRAN Division of Department of Science & Technology (DST). Through one of its components- 'Women Scientist Scheme-C (WOS-C)'- it provides one-year on-the-job training in the area of Intellectual Property Rights (IPR) to women with science backgrounds. The PFC of TIFAC has been entrusted with implementation of WOS-C.

3.2.1 Completion of 11th Batch of WOS-C, KIRAN-IPR

In the eleventh batch of WOS-C, 110 women scientists successfully completed training out of 119 women scientists who joined for the training. This is the highest number of women who are trained in one single batch of WOS-C since its inception. During the pandemic and after the lockdown was announced, an online training was organized for women scientists of 11th Batch on April 8-9, 2020 by TIFAC along with EBTC (The European Business and Technology Centre) on patent analysis with special focus on COVID-19 related technologies. Four reports were prepared by women scientists clustered into 4 groups on COVID related technologies like Kits, Ventilators, Vaccines, etc.

A mid-term Patent Drafting workshop was conducted in online mode from July 6-17, 2020, which was attended by all 110 women scientists across the country. These women also prepared technology

scan reports using patent analysis in different technology areas during the training.

Despite the COVID pandemic, when people all over the world were losing their jobs, 36 women from WOS-C, 11th Batch got respectable jobs in the area of IPR. A **video** on the women scientists of 11th Batch, **"Stories of New Beginnings"** was prepared and released by Vigyan Prasar in which women shared their experience about the WOS-C programme and their journey.

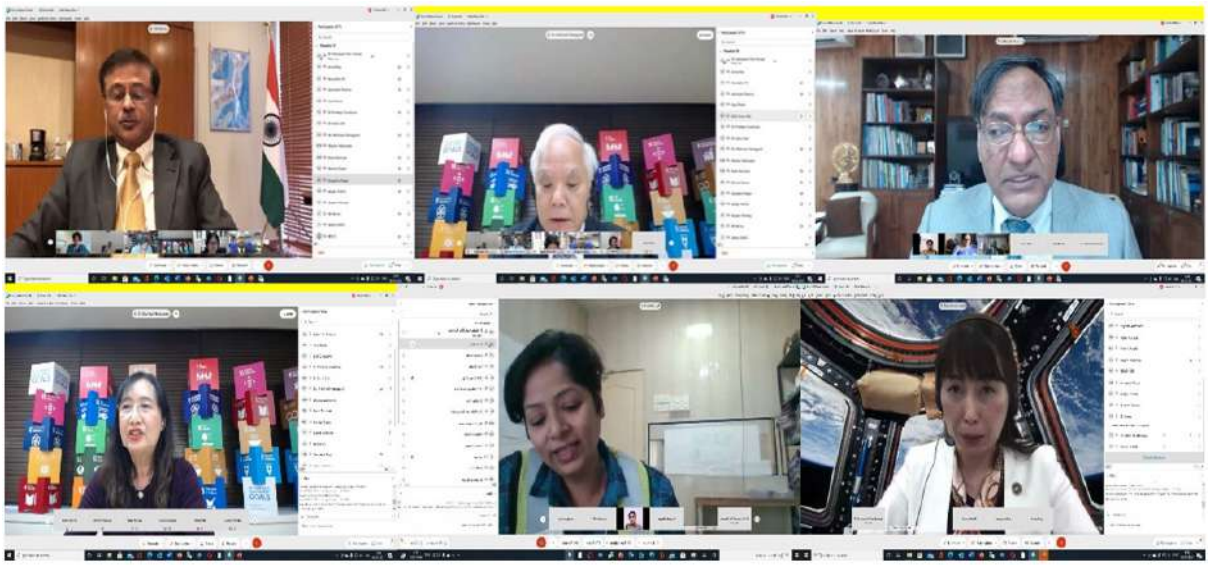
3.2.2 Preparation for 12th Batch

The process of selecting the examination agency through all India tender for the 12th batch onwards was completed. The formal sanctions have been received from DST to start 12th batch, preparation for twelth batch including preparation of advertisement, making the portal for receiving applications were in advanced statge at the end the financial year.

3.2.3 Celebration of International Women's Day on March 8, 202 1with Embassy of Japan

As sanctioned by DST, PFC-TIFAC celebrated the International Women's Day on March 08, 2021, through a virtual platform. It was a joint celebration by India and Japan. The event was co-organized by KIRAN Division, DST, Embassy of India, Tokyo, Japan and Japan Science & Technology Agency, Govt of Japan.

The main theme of the programme was "My Life Journey: Constraints and Hurdles v/s Inspiration and Support" in which women achievers, four each from India and Japan shared their experiences. Four short films on these women achievers were also prepared and screened during the celebration. It was attended by more than 600 participants from India and abroad.



Virtual session during Celebration of International Women's Day jointly by India and Japan organised by KIRAN Division, DST, Embassy of India, Tokyo, Japan and Japan Science & Technology Agency, Govt of Japan

3.2.4 Virtual session during Celebration of International Women's Day jointly by India and Japan organised by KIRAN Division, DST, Embassy of India, Tokyo, Japan and Japan Science & Technology Agency, Govt of Japan

On the occasion of International Women's Day, **a booklet consisting of 100 success stories of the Women Scientist Scheme (WOS-C) was released by Secretary, DST**. The booklet presents select stories of women who completed their training under the WOS-C component of this scheme and are now achieving greater heights in their careers. The booklet captures the lives of women who succeeded despite all odds in life. Besides the women's journey, the book includes details like qualification, specialization, present employment status, experience, and information about technical qualification in Intellectual Property Rights (IPR) attained by each woman after completing training.

E-Booklet on 100 Success Stories WOS-C

3.3 TIFAC-SIDBI Technology Innovation Programme (Srijan)

TIFAC initiated the Srijan programme in collaboration with SIDBI for a period of 10 years to facilitate scaling up of technology innovations by start-ups / MSMEs / young entrepreneurs. he programme duration in its first phase ended in October 2020.

25 innovations were successfully scaled up under the first phase of Srijan. A total turnover of Rs.361 Cr. was achieved by 21 Srijan supported entrepreneurs in the financial year 2019-20. Some of the innovations successfully scaled up under Srijan are as follows:

- Single use dynamic bed Bio-reactors for production of biologics and vaccines etc.

- 3-D printed medical grade patient specific surgical guides and implants for applications in hip and knee transplanting surgeries
- Herboliv - wild animals repellent cum crop growth promoter formulation to save farm crops from wild animal invasion etc.
- Extraction of highly precipitated silica from rice husk ash for applications in tyre industry
- E-waste processing technology to recover precious metals from discarded PCBs
- Automatic Dosa Making Machine and automatic Poori making machine to deliver hygienic food without direct human intervention
- Ultra filtration (UF) polymer membranes and ceramic membranes for applications in drinking water and waste water treatment
- Desuperheater to recover and use waste heat from industrial chillers and air compressors
- Symmetric hydraulic monoblock sectional control valves
- Powdered oil based mud products for applications in oil drilling operations in sub-zero conditions and remotely located rigs
- Robots for waterless cleaning of solar PV modules
- Hybrid Idler for conveyor belt system with higher self life, low friction and higher energy efficiency compared to conventional steel idlers
- Low cost polymer base coil edge protector to reduce transit damage of wired rod coils during rail or road transportation

TIFAC has been carried out assessment and technical appraisal of innovation based project proposals whereas SIDBI has been carrying out the financial appraisal of TIFAC recommended project proposals and managing the revolving fund to financially support scaling up of innovations. 8 new innovations were identified, assessed and technically recommended to SIDBI during the financial year and 3 ongoing projects were reviewed towards successful completion.

Based on its success and impact on connecting innovations to the market, the programme has been further extended for another 5 years up to 31st October 2025. TIFAC continued to facilitate scaling up of technology innovations by start-ups / MSMEs / young entrepreneurs. Summary of the technologies successfully scaled up, new technologies assessed, recommended and ongoing projects reviewed during the F/Y 2020-21 are as follows:

- No. of innovations successfully scaled up : 02
- No. of new innovations identified, assessed and technically recommended for scaling up: 08
- No. of ongoing projects monitored and reviewed: 03

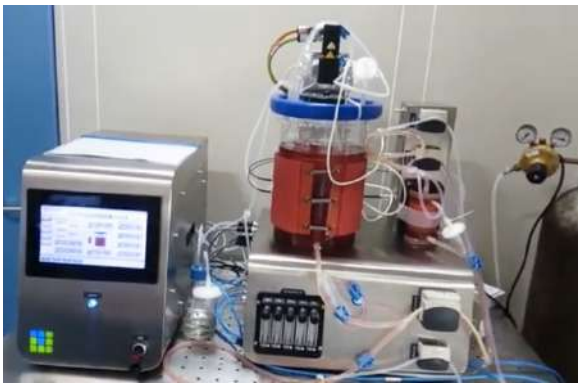
3.3.1 Technologies Successfully Scaled Up During the Financial Year 2020-21

TIFAC has successfully scaled up technology innovation of following two projects:

a. CellBRx Single Use Bioreactor for Efficient and Affordable Production of Biologics and Vaccines by M/s. OmniBRx Technologies Pvt. Ltd., Ahmedabad

Innovation & impact potential: The Innovative Dynamic Bed Single Use Bio-

reactor (SUB) technology incorporated with CellBRx bioreactors has scalability, higher efficiency and affordability. It offers very large surface area for adherent cell growth in small culture volume and innovative design offers mixing to ensure homogenous nourishment and mass transfer while scaling up. After successful trials, M/s Bharat Biotech Ltd. Hyderabad has offered contract manufacturing of 'Covaxin' vaccin e to the aforesaid company. The Company has also got a contract for supply of Single Use Bioreactors to M/s. Serum Institute of India, Pune for the production of 'Covishield' vaccine.



5L CellBRx system – Demo unit

b. Design and Manufacturing of Patient Specific 3D Printed Surgical Guides by M/s Jajal Medical Services Pvt. Ltd., Vadodara

Innovation & impact potential: The 3D patient specific guides and implants are developed using the scans received from surgeons and are further simulated virtually in Mimics software at the respective positions for analysis of the form, fit and functionality like stress, range of motion, other working principles etc. The developed 3D models are shared with the surgeons via online platforms for approval. Every product is customised and validated individually along with the prototype host bone models to check the form, fit and function of the customised solution. After freezing the 3D designs, the same is printed as per the requirement. These are plastic or metal-based printers using biocompatible materials for manufacturing of guides and implants.

The company has completed over 25-30 cases including patient specific surgical guides, anatomical models and customized implants and monitoring the feedback for the same from the surgeons. The Army Hospital (Research & Referral), New Delhi awarded the company a contract to deliver 50 numbers of patient specific surgical guides to be used for jaw reconstruction surgeries. The developed technology can significantly increase the affordability of products due to its cost effectiveness in comparison to imports from leading medical manufacturers in the USA.

3.3.2 New Innovations Assessed and Technically Recommended to Addres the Upsurge Covid-19

TIFAC has completed peer review and technology assessment of eight technology innovations projects received under Srijan Programme. The brief details of projects technically recommended to SIDBI are as follows:

a. Development of an Indigenous, High-End, Portable and Invasive Mechanical Ventilator by M/s Nocca Robotics Pvt. Ltd., Mumbai incubated at SIIC-IIT, Kanpur

Innovation: The IoT enabled Ventilator Management System would allow the doctors to monitor and control the ventilator settings remotely which is of

utmost importance for the safety of the healthcare professionals in the current pandemic. The device would incorporate an expiratory flow filter (UVC based) to prevent the hospital staff and environment from the viral and bacterial load released by the patient. It would also be capable of working with medical air-line + oxygen as well as ambient air + oxygen, thus, providing the versatility to operate under a variety of circumstances.

b. Intelligent Waterless Solar Panel Cleaning Robot by M/s. Aegeus Technologies Pvt. Ltd., Bangalore

Innovation: The unique air wash technology clubbed with two robotic products, i.e. Unicorn and Shreem would eliminate the need of water or harmful chemicals for cleaning the solar panels mounted on the ground as well as rooftop installations. The developed smart robots would be IOT/Cloud connected with artificial intelligence and machine learning capabilities to deliver the tasks. The developed products would be modular in design and could be customized for different panel configurations for Indian installations with uneven surfaces and undulation and solar farms irrespective of the size and geography.

c. Modular Floatation Solutions for Multiple Industrial Requirements with Enhanced Life and Stability by M/s Acquafront Infrastructure Pvt. Ltd. (AIPL), Incubated at SIIC, IIT Kanpur

Innovation: The unique design of steel integrated floating jetty (SIFJ) would overcome the challenges of existing HDPE based fixed jetties, i.e., seasonal and tidal variations in water levels which become unsafe during adverse climatic conditions. In case of existing HDPE infrastructure, the debris is collected alongside the jetty which causes foul smell for a longer duration until the debris is manually removed from the side. The innovative SIFJ structure would reduce the accumulation of debris by allowing it to flow with the water due to the vacant spaces between the floating modules. The SIFJ would infer a modular construction such that smaller modules of 6 m^2 could be assembled together to make a larger platform as per the requirement. The modular design would make it a one stop solution for various applications like passenger docks, pump pontoons, solar grid and floating restaurant structure as per the customer's requirement.

d. Scale up of ZUPPA Temp2Cloud by M/s. ZUPPA Geo Navigation Technologies Pvt. Ltd., Chennai

Innovation: The technology platform would help to measure and record the human body temperature at large public places and offices for compliance during and post pandemic phase. The platform would be enabled with a blue-tooth dongle device to measure human body temperature with a click of a button on the phone APP and it could also be paired with any mobile phone/laptop. The App would automatically link the QR code of Govt. issued ID like Aadhar/driving license/office ID etc. along with GPS location of the person screened to automatically upload the data at cloud-based resources. The developed dongle could be controlled with the smartphone via an APP and it would not require LCD screens and other electronic subsystems. The technology will help the offices/regulatory bodies to maintain the database for further analysis and

compliance purposes leading to data driven management of the Pandemic.

e. Recycling of Electronic Waste & Lithium Ion Batteries and Recovery of Cobalt, Lithium, Nickel, Copper and Manganese Salts by M/s ADV Metal Combine Pvt. Ltd., Durg with CSIR-NML, Jamshedpur

Innovation: The CSIR-NML, Jamshedpur has developed a technology package for scientific solution for treatment of used Li ion batteries of mobile phones. The Li ion batteries contain Co (15-30%), Ni (3-5%), Li (5%), Cu (10%), Al (20%), Mn (1-3%) which could effectively recover Cobalt as Cobalt Sulphate from mix batteries for various application in paint industry, poultry feed, cattle feed etc.

f. Manufacturing of Phase Change Materials (PCM) Based Products like, 24x7 solar Dryer for Farm Produce and Space Heating Applications by M/s Pluss Advanced Technologies Pvt. Ltd., Gurgaon

Innovation: The Phase Change Materials (PCM) would be deployed for various unique applications like vegetable/fruits drying, space heating and HVAC applications by exploiting the thermal storage properties of PCM in the temperature range of -33°C to +85°C. The novelty lies in capturing the solar thermal energy in developed PCMs and then recycling the captured thermal energy in a novel way to provide round the clock operations. The Aagun dryer would be designed in a way to provide a constant temperature of 40 to 55°C for drying to avoid higher temperatures that are not desirable for its impact on the colour and texture of dried stuff. Further, PCM integrated room heating systems would be capable of providing thermal comfort in high altitude areas where temperature during night falls to as low as -20°C. The system will work for 24 hours by maintaining the room temperature in the range of 15-30°C throughout the day and night.

g. Commercialization of Ceramic Servo Accelerometer by M/s. Aeron Systems Pvt. Ltd., Pune

Innovation: The Ceramic Servo Accelerometer technology has been developed by IISU, a wing of ISRO and deployed in over 20 space missions. The servo-based accelerometers are closed loop devices, gravity referenced, that ensures excellent accuracy, long-term stability and zero drift over time.

This technology will be used for guidance of fighter aircrafts, space launchers, missiles, and UAVs. ISRO has licensed the technology to the Company for commercial production.

h. Agricultural Dehydrator and Cardamom drying technology by M/s. Carpro Technologies Pvt. Ltd., Coimbatore

Innovation: The innovative dryer would enable uniform drying from the bottom layer to the uppermost layers while retaining high oil content and low moisture content in the dried cardamom thereby retaining the desired physical parameters like colour, taste and aroma. By retaining the volatile content, farmers will get extra dry yield than other existing methods.

The technology is expected to reduce the processing cost by 80% and processing time by 50%. The developed machine could also be configured for drying fruits

and vegetables by enhancing their shelf life.

3.3.3. Ongoing Projects

TIFAC reviewed the physical and financial progress of the following two ongoing projects towards their successful completion:

a. Herbal Formulation to Keep Away Wild Animals from Browsing Farm Lands and also to Promote Crop Growth by M/s. Provimi Products Pvt. Ltd., Erode

Project status: Around 50 quintals of raw materials have been processed to make fermented herbal formulation and around 19,500 Litres of Herboliv have been produced. The company has partnered with ICAR-KVK, Myrada (Erode) for providing technical support to the project in terms of field demonstrations and KVK has been documenting the efficacy of Herboliv+ in terms of crop yield, pest control, rodent/wild boar control under the National Level Agriculture Project. Initial results indicated that herboliv has helped farmers to produce residue free paddy and reduced crop damages by 70% due to rodents and wild boar, peacock by 95% and 10-15% additional crop yield. ICAR-KVK, Hanumangarh district of Rajasthan have tested the efficacy of herboliv to protect the cotton crop from desert locust swarm and have observed very positive antifeedant efficiency of Herboliv+.

This is first of its kind of field trial in the country and herboliv has effectively protected the crops from desert locust swarms without any crop damage.

a. UF Ceramic Membrane with Module/Filter Unit for Fluid (Water Purification, Oil, Waste Water, Dairy Etc.) Filtration Application by M/s. Need Innovation, Kolkata

Project status: Design, installation and commissioning of furnace were under progress. The company has developed 03 products of ceramic membrane based on the configuration and pore size in the range of 0.1 micron, 0.3 micron and 0.03 micron. The Ceramic Membrane developed by Need Innovation has been tested and certified by many clients e.g. Bharatiya Reserve Bank Note Mudran Ltd., Emerald Jewel Industry India Ltd., Praj Industries, Durgapur Chemicals Ltd., Konark Fixtures Ltd., Synergy Carbide, Ahmedabad, Treo Engineering Pvt. Ltd., AgriLife Hyderabad, Infinite Bio, Daurala Sugar Factory, National Dairy Research Institute etc.

UF Ceramic Membrane

3.4 Assessment of Technology Maturity for AatmaNirbharta (ATMA)

TIFAC initiated a new programme on "**Assessment of Technology Maturity for AatmaNirbharta (ATMA)**", which aims at assessment of technology maturity and to create a technology portfolio. Under the programme, technologies with high commercial/societal value developed and patented by public-funded institutions/ organizations would be examined and ranked on the basis of their degree of maturity. Assessed technologies could serve as a feeder to various government funding and facilitating programmes as well as VCs/ Seed Fund, etc. Selected technologies would be supported for making business plans, mapping market potential, scouting, regulatory approvals, pilot/field testing, etc. to make them market ready to be aligned with the goal of AatmaNirbhar Bharat.

4.0 TECHNOLOGY SUPPORT

TIFAC has been playing a significant role in Industry segments in a bid to commercialize and establish new innovation in Technology by providing Technical and R&D support to technologically homogeneous MSME clusters. TIFAC provides support to small industries through internships, clusters etc.

4.1 MSME Cluster Programme

MSME Program of TIFAC, ongoing since 2006, aims to provide R&D and technical support to MSMEs, in select technologically homogenous clusters through a methodological approach based on establishing and leveraging academia-industry interaction. The program focuses on harnessing and leveraging the knowledge and expert base available with the proximate academic and R&D Institutions to reach out with technical support to the MSME industries.

The Program has covered more than forty-six clusters across the country and has further evolved to augment the innovation support to the MSMEs by linking engineering students also with the MSMEs through the MSME Internship Scheme.

4.1.1 Ongoing Studies

Following five Technology Gap Analysis Studies have been ongoing in the Five (5) MSME clusters:

a. Technology Gap Analysis Study for the Toys Cluster, Channapatana

The study focuses on the toys cluster situated in Channapatana, Karnataka and is being carried out in collaboration with M.S. Ramaiah University of Advanced Sciences (MSRUAS), Bangalore as knowledge partner. The cluster houses more than 250 units/enterprises of micro and small scale manufacturing/producing *wooden toys, natural fibre toys/articles, educational aids* etc. The turnover of the cluster is around Rs.20 crore. The cluster markets toys nationally and internationally including in countries like France, Australia, Netherlands, Germany, USA etc. The manpower (around 3,000) are mostly engaged in design, manufacturing/processing, printing and packaging. The main issues of the cluster are continued usage of traditional technology/methods of manufacturing toys, lack of innovation in material, designing and application, lack of market platform etc.

MSRUAS would identify gaps in products manufacturing technology and would recommend technology interventions action plans for upgrading the cluster's technological base.

b. Technology Gap Study for Katkhal Sital Pati Cluster of Katkhal Hialakandi, Assam

The cluster houses around 227 units involved in producing a variety of products mainly mat, file covers, hand bags etc. The turnover of the cluster is around Rs. 45 lakh with no exports. The articles are produced only for local consumption. Around 1,000 people are involved in the cluster directly or indirectly with most of them either uneducated or having only basic education level. Traditional methods and tools are being used by the workers in the cluster

which are inherited from earlier generations. The cluster is neither aware nor exposed to new technologies for increasing productivity and quality.

The main issues consist of low production rate due to lack of machineries and inadequate resources and need for accessing wider markets. The study being carried out with NIT, Mizoram as the knowledge partner will present the status of technology used in the cluster, evaluate the technology status of the processes as well as the products produced in the cluster and identify the existing gaps in technology and areas for improvement.

c. Arecanut/Sal Leaf Plate Manufacturing Cluster – Bishnupur, West Bengal

The study is being carried out by Maulana Abul Kalam Azad University of Technology (MAKAUT) Govt. of West Bengal, in association with faculty of IIT Kharagpur. Currently, the cluster is producing only low value products. The study is to explore the possibility of producing value added items with technological interventions.

The study would also survey other such similar clusters across the country so that the value added products developed, can also be replicated at other clusters. As a part of the study, few prototypes of the value added items would also be made. There is great potential for utilizing the chemically treated leaves to replace plastics.

Survey of the cluster, costing of the present products and their testing have been completed. Development of better remunerative products is ongoing.

d. Apparel Manufacturing Cluster - 24 North Parganas, West Bengal

The study is being carried out by Maulana Abul Kalam Azad University of Technology (MAKAUT) Govt. of West Bengal. Once a vibrant cluster, presently in view of the intense competition, there is need for an infusion of updated technologies for bringing in efficiency and competitiveness. The study is mapping the present status of the indigenous machineries in use, bringing out the shortcomings in terms of design, productivity & pricing vis -a -vis the imported machines which hinder their adoption by the units. Study will also prepare a plan for designing of the machineries with cost estimates and identified stakeholders.

e. **Fisheries Cluster – Manipur & Food and Spices Cluster – Churanchandpur, Manipur**

Manipur is rich in fresh water fish diversity. Different varieties of fishes such as Grass Carp, Silver Carp, Rou/Mingal, Kamal Carp, Katla etc. are found in abundance. Some of the indigenous fishes of Manipur are Pengba, Nagamu, Porom, Ngakra etc. There is ample opportunity for the food processing industry of dry fish and smoked dry fish. Manipur also produces a rich variety of fruits, vegetables, cereals, pulses, spices, etc. suitable for processing and having potential for export.

There is a need for an assessment of Integrated Development of the region, harnessing the potential and exploring the feasibility option for commercialization as well as marketing. The study by NIT Tripura will take an aggregate look at the fishery sector as well as agricultural

products. It will prepare an integrated development plan for improving production, production of value added produce along with a viable plan for commercialization and marketing, leveraging the potential of the region.

4.1.2 Completed studies

Final report submitted for the following Two (02) clusters:

a. General Engineering Cluster, Coimbatore, Tamil Nadu

The study was carried out by P S G College of Engineering Coimbatore. Coimbatore is the city known as "Manchester of South India" as well as "Pump City of Asia". The cluster consists of several industries like Pumps and Motors, Wet Grinder, Textiles, Auto components etc. The focus of the study was to highlight the technological gaps in energy, productivity and environment in the General Engineering Cluster of Coimbatore. From these segments, pumps and motors, foundries and textile machinery manufacturers were considered for the study.

The major challenges in terms of energy, productivity and environment pertain to electricity, availability of skilled labour, availability of raw materials, lack of training in energy efficient practices, lack of awareness of practices to improve productivity and lack of funds to invest in renewable energy, energy efficient technologies etc. The key recommendations were a) targeted energy audit and saving programs, b) motivating MSMEs towards energy efficiency by optimum use of plants and adopting modern technology, c) organizing awareness and training programs to cater to requirements of skilled manpower etc.

b. Textile and Garment Manufacturing Cluster, Erode, Tamil Nadu

The study has been carried out by NIFT-TEA College of Engineering, Tirupur.

Erode is famous for its Agricultural produce and Woven Fabrics & Rugs. Erode is one among the Traditional Textile Business Hubs of Tamil Nadu. City is well known for Textile Products of Handloom, Power Loom and Readymade Garments. Products such as Cotton Sarees, Bed Spreads, Carpets, Lungies, Printed Fabrics, Towels, Dhotis are Marketed in Retail as well as bulk. The key recommendations are: a) weaving - to explore innovation opportunities in Handloom machines and products, handlooms & power looms can be replaced with Automatic Looms of Rapier & Projectile types, Air Jet / Projectile looms can be used for higher production, b) skill development programs to train manpower to use different types of dying techniques including natural dying etc.

c. Bioceramics

More than 15 crore Indians suffer from knee problems and around 4 crores need knee replacement. Yearly around one lakh and twenty thousand knee replacement surgeries are performed in India besides seventy thousand hip replacement surgeries. With increasing average age this number is set to grow further. Estimated Indian market size of the knee replacement is of Rupees 850 crores and expected to grow rapidly. It has been estimated that around 70 % of the requirement is currently met through imports. Some of the critical technological areas which

require attention are: state of the art designing approach, controlled and precise traditional machining and advanced coating techniques.

In view of the emerging requirement of bioimplants and our heavy dependence on imports, the study has taken a look at the current national capability for producing such implants. The study has also identified the gaps in our competency and accordingly drawn a plan for prioritized R&D. The study was carried out in close association with CSIR- CGCRI, Kolkata.

4.1.3 Study in Advance Stage

Draft study reports had been submitted for the following two (02) MSME clusters

a. Utensil clusters, Bihar and West Bengal

The clusters at Vaishali, Bettiah, Pareb in Bihar and Mahishadal Purba in West Bengal have about 110 units. These clusters are very traditional and community based. These clusters are engaged in manufacturing metal based articles like Thali (dish), Bati, Bela, Ghara, Lota, Diya, different types of god and goddess idols and others.

The units continue to use conventional and indigenously developed technologies. The product range has also remained the same over several decades. The technologies used are inefficient and lead to lower productivity, excessive wastage, poor/inconsistent quality and high degree of pollution. The study being carried out by IIT Patna, is focusing on major Technical Challenges: Inefficient furnaces, over machining, quality issues, waste management, improper storage system etc.

b. Surgical Dressing Manufacturing Cluster, Chatrapatti, Rajapalayam, Tamilnadu

Chattrapati, Rajapalyam was a tiny village in Tamilnadu, not known by many in India two three decades ago. But within a short span of time it is developing fast as one of the important industrial towns in Tamilnadu and now known as Bandage City. About 408 industries are functioning in around 25 km distance from Chatrapatti. The industry employs more than 50,000 employees directly and indirectly. The total turnover of the cluster is about Rs.400 crore and export is of about 200 crore approximately.

The main products are Surgical Gauze and medical dressing cloth, Cotton woven fabric, Diapers, Gauze balls, Hygiene products used in operation theatres. The cluster technology is being studied by NIFT TEA. Some of the issues being highlighted include: Unexplored product categories / markets, low productivity, lack of systems to improve quality, poor utilization of tools, problems of wastage, pollution, lack of trained manpower etc.

4.2 TIFAC Academic Partners (TAP) Programme

Academic Institutions have played a significant role in reaching out to the MSME clusters with technical and R&D support. TIFAC under the MSME program has reached out to more than 45 clusters across the country so far. Post COVID-19, for India to be “AtmaNirbhar” and also to meet the emerging spurt in demand in view of the changed Governmental public procurement guidelines, it is imperative that MSMEs be infused with appropriate efficient technologies. Accordingly the program has

now been further evolved to establish TIFAC Academic Partners (TAP) at different parts of the country to focus on proximate MSME clusters and reach out with appropriate requisite technological support.

The TIFAC Academic Partners would be Academic Institutes of excellence having a strong track record of outreach to MSMEs, innovation support and technology development. The proposed role, deliverables, methodology etc under the program are as below:

Role of TIFAC Academic Partners

- Reaching out to proximate MSMEs
- Assessing technology needs of MSMEs, especially in context of local strengths and requirements.
- Exposure of MSMEs to current technologies and manufacturing practices.
- Skilling people.
- Hand Holding & Mentoring with absorption of adoption of technology. Organizing awareness and undertaking requisite capacity building.
- Aligning its initiatives with those of Skill India and Make in India towards pursuing the larger goal of "AtmaNirbhar Bharat".

Deliverables

- Technology Mapping of proximate MSME Clusters
- Exposure of proximate MSME Industries to current technologies and techniques
- Imparting requisite skilling
- Providing need-based stimulus

It is proposed to identify five different Academic Institutions at different parts of India: East, West, North, South and Central.Accordingly, EoI were requested from Academic Institutes across the country desirous of establishing TAP Centres and the proposals are under evaluation.

4.3 Bioprocess & Bioproducts

Programme aims towards carrying out systems study in the field of bioprocess & bioproducts and supporting R & D in niche areas. Under the program, technology development projects were supported earlier in the areas of biotransformation & enzymatic processes for API, nutraceuticals, phyto-chemicals, value-added bioproducts, bio-energy & biofuels, etc. Several specialized reports in the area of bioproducts, biomass assessment published and spatial information systems for biomass and bioenergy mapping have been developed.

4.3.1 Studies Completed

a. Detailed Project Report (DPR) for launching Seaweed Programme

Seaweeds, macroscopic marine algae are a source of nutrition, rich in protein, vitamins and minerals. Around 10,000 species exist worldwide, of which India possesses 844. Out of global seaweed production of ~30 Million Tonnes valued at USD 11.7 billion, China produces ~50%, Philippines ~30%, followed by Indonesia, whereas India's share is merely ~0.01-0.02%.

However, India having a coastline of nearly 7500 kms and an Exclusive Economic Zone (EEZ) of nearly 2.17 million Km2, has a huge untapped potential of seaweed farming and at the same time employment opportunities.

There is also a substantial scope to convert raw material into value added products. Looking at the immense potential of seaweeds towards its contribution to the national economy, employment generation & positive impact on the environment, a Mission oriented towards technology development is planned to be launched. Accordingly, preparation of DPR for the proposed Mission has been undertaken.

The DPR covered the objectives, global market & Indian potential of seaweed, techno- economic analyses of seaweeds farming (near sea shore & land based farming), market value of products from fresh seaweeds and the roadmap for implementation of the Seaweeds Programme.

b. Spatial Information System on biomass potential from crop residues over India using geospatial techniques' with National Remote Sensing Centre, Hyderabad.

The spatial information system of biomass potential from crop residues (named BHUVAN-JAIVOORJA) developed under this project is an effective tool to assess the availability of biomass and land resources along with logistics support from user defined fetch areas. This web portal facilitates planning/establishment of tailor made biofuel/biomass plants for better utilization of surplus biomass resources.

The portal displays: Spatial distribution of crop specific bioenergy potential from its residue, spatial distribution of the total bioenergy potential from the selected crop residues, spatial map of the growing areas of the selected crop and spatial clusters or zones of high bioenergy potential from crop residues. The portal also highlights:Land Use Land Cover (LULC) map, major rivers and surface water bodies, administrative boundaries, road network, The BHUVAN geo-portal is a useful tool for online visualization, annotation, delineation. Under its spatial query module, one can draw a Point of Interest (POI) over the map, delineate a fetch area and calculate the amount and type of biomass available & bioenergy. It can also provide the information about the nearest town/railway station/petrol pump along with map and statistics of LULC over the fetch area, which is useful for the bioenergy production plant to set up. Project successfully declared completed in June, 2020.

c. Characterisation of major agro-residues biomass in India with CSIR-IIP-Dehradun & CSIR-NIIST- Thiruvananthapuram

The major objective of the aforesaid study included collating information from secondary sources on the defined parameters for all the identified crops from each of the different agro-climatic zones of our country. Data collected is catalogued, statistics analysed and organised into a searchable database for each parameter. Final completion report was evaluated by the Expert Committee in June 2020, and it was declared completed.

The study has created a database of 195 agricultural residue samples including *rice straw, wheat straw, corn stover, sugar cane bagasse, cane trash, cotton stalk, pigeon pea, ground nut, mustard, castor, rice husk and wheat husk*. Broadly, the report covered the data for Biochemical composition, proximate & ultimate analysis obtained from secondary sources by using standard methodology for characterisation. The details of parameter for each crop residues included number of

data points, samples for which location known, geo-coordinates, cultivar information and Variability in data (%) for Cellulose, Hemicellulose, Lignin, Ash, Extractives, Moisture Content, Bulk density, Total Organic Carbon, Calorific Value, Crystallinity etc.

4.3.2 Study Ongoing

Mapping of appropriate technologies based on local biomass for conversion to biofuel

Characterisation/raw material specific technologies for conversion to biofuels would be mapped under this report. The report would complement the earlier report on biomass characterization. Terms of Reference have been finalised and the draft report is under preparation.

4.3.3 Other Recent Initiatives

a. Mapping of technologies for value-addition of seaweeds

Considering the significance of seaweed in the blue bioeconomy, the study explored potential applications/ economic uses of seaweed, comprehend the current scenario of global & domestic seaweed sector, examined the status of seaweed value-addition industries/ products & analysed the R & D trend in value-addition technologies developed in India, formulated recommendations within different time frames i.e. short, medium and long-term for establishing a self-sustainable seaweed value-addition industry in India.

4.4 Seaweed Programme

The programme is being implemented in collaboration and convergence with the other programmes of the Ministry of Fisheries, GoI to tap the immense latent potential of India with respect to seaweed. TIFAC to nucleate, and facilitate the above. The proposed activities included the following :

a) Harmonization of seaweed cultivation technologies with respect to geo spatial location/mapping
b) Post-harvest technology optimization & standardization of technologies for new value-added products.
c) Support development of start-ups with innovative technologies with seaweed culture and products.

Collaboration is being sought with Central Inland Fisheries Research Institute (CIFRI), Kolkata, Central Salt and Marine Chemicals Research Institute (CSMCRI), Bhavnagar and Ministry of Fisheries, new Delhi

4.5 Demonstration for Telemedicine (plug & play) Project

With an objective of reaching out to people living in inaccessible and inhospitable terrain with quality medical care, TIFAC, in consultation with Ministry of Health, has conceptualized a scalable pilot demonstration telemedicine project (PLUG and PLAY model) to provide quality medical care to underprivileged women and children of SC and ST living in remote areas at affordable costs. The project aims to demonstrate the efficacy of cutting-edge technologies using wearable sensor based on reaching out to people living in such areas with tele diagnostic medical care. This is the first time in India that Tele diagnostic care would be provided under medical services. The monitoring would be done of the following parameters: ECG, Heart Rate, Blood Pressure, Digital Stethoscope, Temperature, SPO_2, Blood Sugar, Lipid Profile, Hemoglobin & Fetal Doppler.

The key activities would be:

- Reaching out to target population through representatives of Academic Institutions with the help of a platform created by C-DAC.
- Examining the patients in a phased manner with wearable /gadgets/android based apps etc and recording / transmitting data/information through the gadgets to the cloud.
- Presenting the data/ information through cloud to pool of doctors.
- Analysis by doctors
- Conveying the advice/ analysis of doctors and their prescription to the target population.
- Health data management and mapping with the individual UAID of the population
  Coordination with local health authorities would be tried to be established to bring synergy.

The services in scope include:

1. Level 1: e-diagnostics

2. Level 2: e-Counselling (Therapeutic monitoring)

3. Level 3: e-Health Data management (Level 1&2)

The project jointly launched with IIT Madras Pravartak Foundation, would be implemented in association with C DAC Mohali.

5.0 INTERNATIONAL LINKAGES

TIFAC has collaborated with various international institutions/agencies for carrying out activities related to system analysis & modelling in socio-economic sectors, sharing IP knowledge, training and facilitating cooperation in science, technology and innovation policy etc.

5.1 India-IIASA Programme

India-IIASA Programme focuses on undertaking collaborative research projects among scientists from Indian S&T organizations/academic institutions with IIASA researchers in the areas on mutual interests and organizing training workshops.

The Programme also offers opportunities for young Indian researchers to work at IIASA under the **'Young Summer Scientist Programme (YSSP)'** and Postdoctoral Programme, which help strengthen their skills in advanced systems analysis and research techniques.

5.1.1 Capacity Building Initiative

This is well acclaimed IIASA programme running since 1977. This provides an opportunity to young researchers from all National Member Organization countries to research on a theme related to IIASA's ongoing research on issues of environmental, economic and social change. Through this, young scientist joins an IIASA programme (June-August every year) and experiences at first hand, interdisciplinary cooperation in an international setting. This year, two YSSPers from India had undergone training at IIASA.

5.1.2 Collaborative Studies (On-Going)

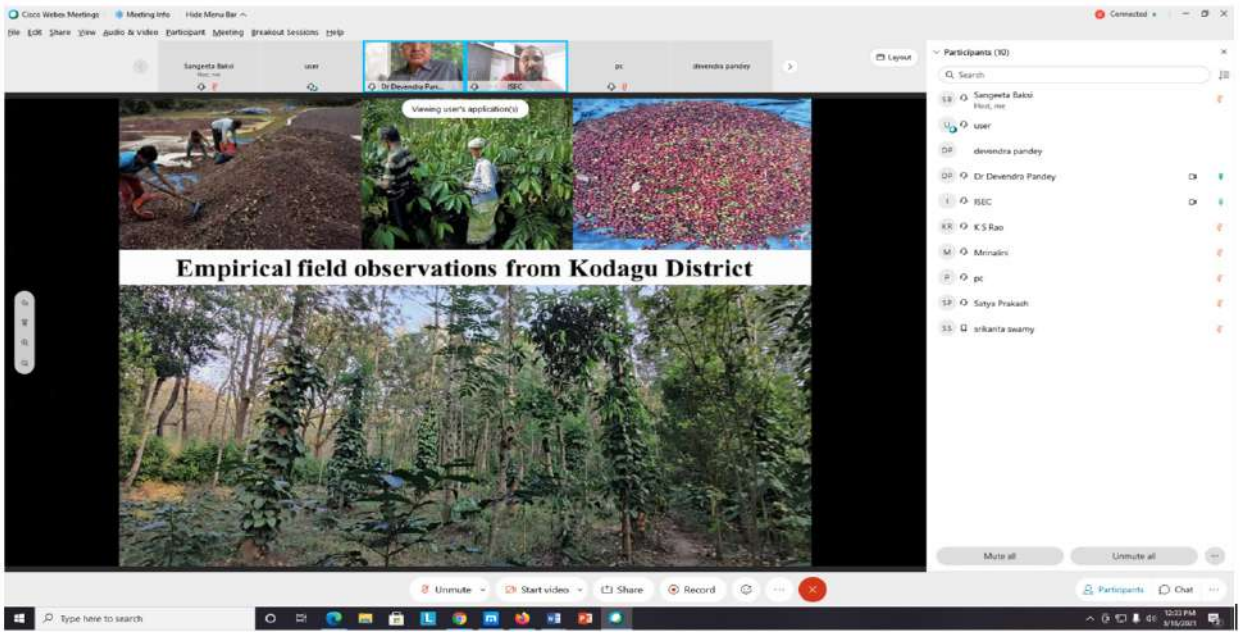
Under the India-IIASA programme, the following studies are underway:

a. Study on Climate Smart Livelihood & Socio-ecological Development of Biodiversity Hotspots of India by Institute for Social and Economic Change (ISEC), Bangalore.

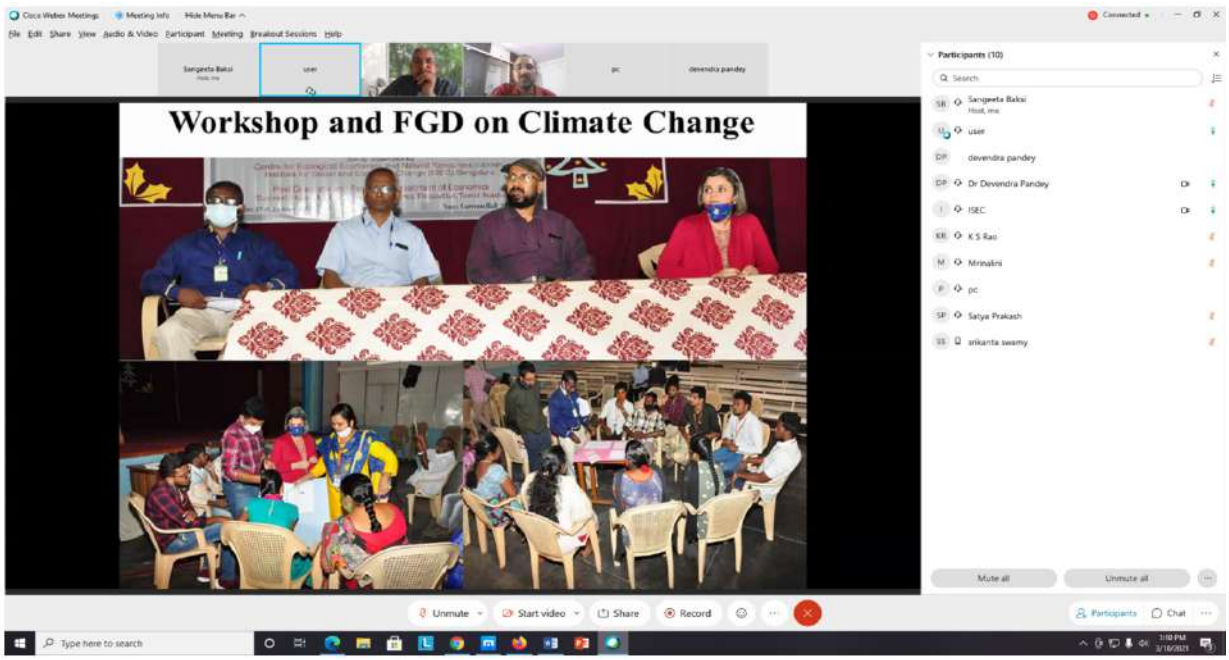
In this study, an attempt has been made to develop bio-physical vulnerability indicators to assess the impact of climate change to bio-diversity hotspots of India viz., Eastern Himalaya and Western Ghat. Both these areas are very rich biodiversity as well as cultural diversity and at the same time in a danger end in term of losing the same. The study would develop model and determine the sustainable development path, particularly in the relationship between human-induced systems, the demand and its natural environment. This approach would help to identify "interfaces" between human behaviour and the natural ecosystem, such as agricultural practices; changes in natural resource management pattern; flow of resources such as economy, energy, biomass; uncertainty because of several independent variables such as climate, weather etc.

The concept behind the model is to understand the decision making process of farmers which is not unidirectional but are always influenced by several driving forces. ISEC has studied the impact of climate variability and change on crop productivity in Kodagu district. Kodagu district contributes more than one third (36.73% as of 2013–2014) of India's total coffee production (Coffee Board of India).

Coffee is the predominant crop of the region occupying around 57.5% of the gross cropped area, followed by paddy (19.8%), cardamom (5.06%) and pepper (4.9%). ISEC has also assessed rainfall, temperature and water stress trends over time in Kodagu and Chamoli district, using Standardized Precipitation Index, Thermal Heat Index, and Normalized Difference Vegetation Index (NDVI) as a proxy of water stress. MOSAICC model would be used for the study which allows the users to assess the climatic impacts as it integrates a powerful data management system with a flexible and configurable system to run multiple models.



Empirical field observations from Kodagu district



Workshop and FGD on Climate Change

b. Study for Developing an Integrated Model for Analysing Linkages Between India's Water, Land and Energy Policies and the Sustainable Development Goals

IIASA will work with the Ministry of Environment, Forest and Climate Change in India (MoEFCC) to develop tools to lead the Indian Government agencies in evaluating targets for Land Degradation Neutrality (LDN) and Sustainable Development Goals (SDGs). The innovative tool provides insights into the vulnerability of linked systems to future socioeconomic and climatic change, and how technological and policy solutions can be implemented to avoid trade-offs across sectors. The collaboration is a multi-phase project in which IIASA transfers the NEST approach and tools to the MoEFCC for their ongoing use in national planning. The main project goal is to explore cost-effective solutions to jointly meet water, land and energy demands under different development and climate pathways. Focus for NEXUS project was on Indus river which has its expanse beyond India.

c. Study on Establishment and Application Of AQM Modelling In The Indo Gangetic Plain with World Bank and MOEF&CC

The World Bank is currently engaged with the Government of India for a technical assistance (TA) program on AQM. Through this program it is supporting the MoEF&CC, CPCB, and the SPCBs to strengthen ambient air quality monitoring (AAQM), source apportionment (SA), emission inventory (EI) and overall AQM that will help in achieving targets relevant for the National Clean Air Program (NCAP). A key aspect of strengthening AQM planning is developing AQM modelling capacities to understand the sources and dispersion of pollution across an air-shed that may cross jurisdictional boundaries, as well as evaluate the cost-effectiveness of proposed policies to reduce air pollution. Presently Bank has extensively collaborated with three states namely Bihar, West Bengal and gradually Uttar Pradesh in providing technical advisory support in expansion of AAQM and SA networks, and guidance and development of state air action plans and integration of cross sectoral work in the states.

As part of the TA the Bank is also supporting the NKN to build capacity for AQM in India and facilitate systematic knowledge sharing across states.

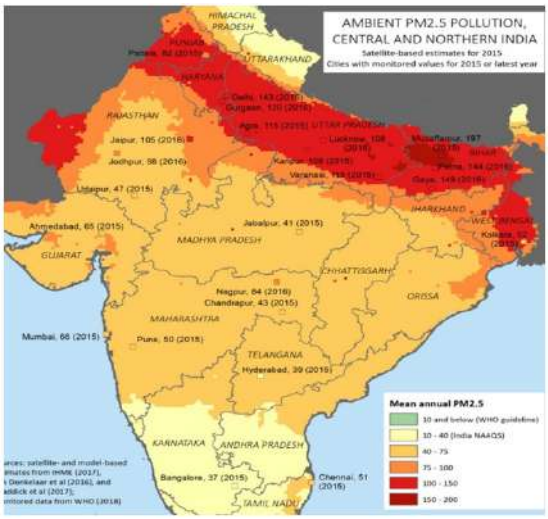
Through this support there is a dedicated focus on capacity building to the IGP states given the trans-boundary nature of air pollution in this region, and the high PM2.5 concentrations relative to the rest of the country.

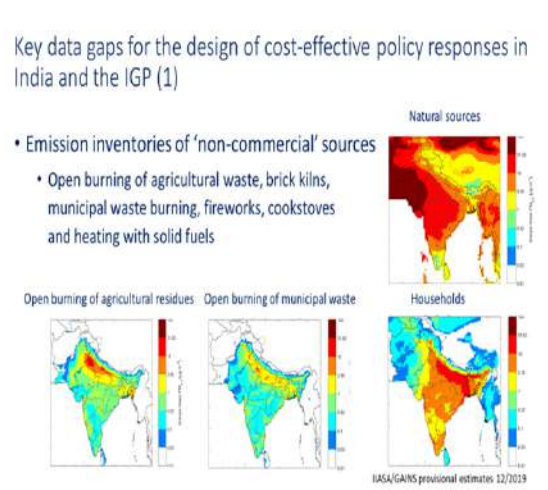
The objective is also to ensure that India masters the GAINS administration tool which will enable India to sustain the AQM model capacity over the next 10 years or more.

Representatives from each of the state PCBs, UT pollution control committees (PCCs) and NKN partners in each of the six participating states and Chandigarh UT are responsible for collating and maintaining the local database.

A Strategic Advisory Board (SAB) is established to provide overall directions for the IGP-AQM practice Group, and guide how to manage the IGP-AQM practices, including its yearly work plans.

The members include representatives from the MOEFCC (i) CPCB, (ii) NITI Aayog, (iii) TIFAC, (iv) the Ministry of Earth Sciences (Indian Meteorological Department) and (v) the NCAP Knowledge Network.





d. India Energy Model

IIASA and NITI-Aayog along with TIFAC have partnered to develop MESSAGEix modelling framework for NITI Aayog for national energy system and energy policies. The model would allow analysis of key-questions in addition to sectorial details, fuel-conversion technologies, etc. It would update data and assumptions and establish baseline scenario. Due to varying inter-sectoral dependencies and cross sectoral issues, the aforesaid modelling approach would help national policy making – to come out with better solutions.

5.1.3 Training Workshop

The Energy Program of **International Institute for Applied Systems Analysis (IIASA), Austria** held a MESSAGEix workshop to help new users to advance their modelling skills and gain confidence working with the MESSAGEix model during 7-10 September 2020. The workshop covered the following sessions:

- Introduction to MESSAGEix framework and installation procedure
- MESSAGEix as an optimization model: building a model from scratch
- Modeling of a national energy system and energy policies (using online tutorials)
- Post-processing, reporting and continuous integration

5.1.4 Other Activities

The collaboration with IIASA is helping build up national capability in applied systems analysis and development of integrated models, which can help in planning process and identification of technology priorities. In particular, IIASA's applied systems analysis has brought a global perspective, interdisciplinary research expertise, and policy relevance to issues ranging from the future of India's energy system to increasing the country's food production. South Asia has shown tremendous progress in the last four decades in food

production and availability, yet a quarter of the world's hungry and 40% of the world's malnourished children and women live there. Further improving agricultural productivity is thus imperative, and a recent collaboration between IIASA and the International Crops Research Institute for the Semi-Arid Tropics (ICRSAT) in Hyderabad identified options for improving crop yields in the rain-fed systems of the semi-arid tropics.

The India-IIASA collaboration has resulted in the publication of approximately 300 journal articles or reports on a diverse range of disciplines and issues, primarily on energy, biofuels, emissions (climate change), and forestry. IIASA's broader agenda also generates research of direct relevance to decision makers in India. IIASA's academic training programs have also been successfully building the next generation of systems analysts in India.

5.2 MoU with European Business Technology Centre (EBTC)

For cooperation in sharing IP knowledge, training and exploring patent licensing, TIFAC signed an MoU with EBTC and conducted two training/workshop; one for women scientists and second for sharing the European Patent Office COVID related technology platform with Indian scientific community. Also, analysed portfolio of patents facilitated by PFC for finding potential licensing in Europe.

5.3 TIFAC- HSE University Collaborations

TIFAC and The National Research University Higher School of Economics, Moscow, Russia, referred as "HSE University" has entered into an MoU to establish a basis for facilitating cooperative bilateral actions between TIFAC and HSE University in the area of science, technology and innovation policy, measurement and foresight, analysis of innovation systems, R&D and innovation strategies, and developing a strategic partnership on the basis of equality.

Key proposed activities:

- fostering exchange of science & technology information and publications in accordance with local regulations of the Parties;
- exploring options for joint research, analytical and consulting projects in identified areas of mutual interest
- facilitating the exchange of experience in the field of teaching, research and management
- exploring opportunities for co-operation through networking activities (conferences, workshops, symposia and other similar events)
- enhancing core capabilities in analytical studies and research on science, technology and innovation policy and measurement and foresight.
- developing and implementing educational and training programs.

6.0 EVENTS

The following sections details out TIFAC's participation in various events as organiser and delegates:

6.1 Constitution Day Celebration

As per direction of Govt. of India, TIFAC celebrated Constitution Day and organized different programmes under Citizen's Duties from May 20, 2020, to November 26, 2020.

The theme of the programme was compliance of Fundamental Duties which says "It shall be the duty of every citizen of India to develop the scientific temper, humanism and the spirit of inquiry and reform". A series of online lecture were organized on the following topics:

a. Indian Constitution, Scientific Temper and Nation Building"

b. Democracy, Constitution and Development in India"

c. Indian Constitution: The Guardian of Fundamental Rights"

d. "Indian Constitution & Spiritual Vision"

e. "Fundamental Rights and Spiritual Awakening"

TIFAC had also organized an essay writing competition among employees on the topic "Role of individual to develop the scientific temper, humanism and the spirit of inquiry and reform towards the Development of India". Drawing competition was organized for the children of TIFAC Employees.

6.2 Vigilance Awareness Week

Vigilance Awareness Week-2020 with the theme **Vigilant India-Prosperous India** was observed in TIFAC. During the week-long celebration, the following activities were organized by vigilance division:

- **Pledge Administration**

Prof Pradeep Srivastava, Executive Director-TIFAC, administered the Integrity Pledge (both in Hindi and English). During the pledge ceremony, all of the scientific and administrative staff participated enthusiastically while maintaining social distance.

TIFAC employees taking the Integrity Pledge

- **Preventive Vigilance**

The vigilance division has compiled a list of Dos and Don'ts (both in Hindi and English) on preventive vigilance and distributed it to the employees. These instructions were prepared to assist employees in comprehending the rules & regulations of the organization and serve as a ready reference whenever they needed it to carry out their duties with efficiency, speed and fearlessness.

- **Awareness campaign**

To raise awareness about vigilance awareness week, posters were displayed in prominent places on the office premises and at the entrance gate. The information about observing Vigilance Awareness Week was also circulated to every TIFAC employee.

TIFAC employees were instructed to take an e-integrity pledge, and to facilitate the same, a hyperlink to the CVC e-pledge website was hosted on the TIFAC website. The Twitter handle to promote awareness week. The pictures and messages of various events during vigilance awareness week were publicized through TIFAC social media.

Website

Twitter Handle

- **Vigilance awareness lecture**

In closing, Shri Sethu Ramalingam, Ex-faculty, ISTM gave a talk on Vigilant India - A Way to Prosperous India to employees of TIFAC and North East Centre for Technology Application and Research (NECTAR). It was indeed a well-received lecture by the staff of NECTAR and TIFAC.

Shri Sethu Ramalingam, Ex-faculty, ISTM gave a talk on Vigilant India - A Way to Prosperous India

6.3 India International Science Festival (IISF) 2020

TIFAC participated in the 6th edition of India International Science Festival (IISF) 2020 which was held during 22nd to 25th December, 2020, on a virtual platform. More than one lakh delegates participated in IISF including delegates from various countries, Science and Technology Ministers from different States of India, Government officials, representatives from NGOs, scientists, technocrats, science writers, teachers, journalists, students, craftsmen, farmers and others. The festival was inaugurated by Hon'ble Prime Minister, Shri Narendra Modi via video conferencing. The theme for this year's festival was Science for Aatmanirbhar Bharat and Global Welfare. It was inspired by Hon'ble Prime Minister Shri Narendra Modi Ji's clarion call for a Self-reliant nation, the "AtmaNirbhar *Bharat*" to propel the country on the path of self-sustenance.

Hon'ble Prime Minister, Shri Narendra Modi addressing the release of IISF 2020 via video conferencing *in presence of Dr Harsha Vardhan, Hon'ble Union Minister for Science & Technology, Dr Shekhar C Mande, Director General, CSIR, Prof Ashutosh Sharma, Secretary DST, Dr Renu Swaroop, Secretary, DBT, Dr M Rajeevan, Secretary, Earth Sciences and Dr Vijay P Bhatkar, VC, Nalanda University*

A total of 41 Events under 9 broad Verticals spread over four days were organised on different aspects of science and technology to highlight the role of Indian Science in elevating the society and fighting the ongoing pandemic. Five (05) Guinness World Records were also attempted in IISF 2020 along with deliberations on a few new themes viz., History of Indian Science, Philosophy and Science, Agritech, Clean Air, Energy, Waste & Sanitation, Biodiversity, Science Diplomacy etc.

6.4 34th TIFAC Foundation Day

TIFAC celebrated its 34th Foundation Day on February 10, 2021, with the theme "Technology, Innovation and Economy for AatmaNirbhar Bharat". The event was attended by Dr V K Saraswat, Chairman, TIFAC, Dr K Vijay Raghavan, Principal Scientific Adviser to GoI Prof. Ashutosh Sharma, Secretary, DST, Dr Vijay Chauthaiwale, Healthcare Consultant, Dr Pradeep Srivastava, and various other experts. The Clarion Call for a Self-Reliant India or Atma nirbhar Bharat is a grave and serious task bestowed to us by our Hon. Prime Minister. Dignitaries at the occasion highlighted that cultural changes, as well as connection of invention and innovation ecosystem, can unlock the potential for Atmanirbharata in India.

Prof Pradeep Srivastava, ED, TIFAC briefed TIFAC's journey of last 33 and highlighted TIFAC's contribution in bringing out Technology Vision 2020 and Technology Vision 2035 document, several Mission Mode programmes, initiatives in innovation and commercialization, patent facilitation and International Collaborations. He highlighted the effort of TIFAC during the lockdown period in bringing out two

important documents viz., White Paper 'Focused Intervention for Make in India – post COVID 19' and 'Action Agenda for AatmaNirbhar Bharat (AAAN)'. Both the documents touched upon economic revival paths of India post COVID 19.

Prof Ashutosh Sharma Secretary Department of Science and Technology (DST) while addressing the gathering with his talk on 'Scientific Social Responsibility and TIFAC towards Atmanirbharta' underlined how the Science Technology and Innovation Policy (STIP) and efforts by the TIFAC, could bring about cultural changes to connect the invention and innovation ecosystem and instil confidence to realise self-reliance in every sector through science and technology at the inaugural programme of the celebration.

While underscoring the increasing nonlinearity of science in the new era, Dr V K Saraswat, Member Science, NITI Aayog and Chairman-TIFAC identified the technological priorities of the future like cyber-physical systems, quantum computing, green chemistry and water. He stressed that it is imperative to focus on technologies that can make India self-reliant or Atmanirbhar and are futuristic as well. He also added that the National Research Foundation (NRF) announced recently that it would create an ecosystem for providing a platform for futuristic research to bring our country at par with the rest of the world.

Principal Scientific Adviser to the Government of India Professor K Vijay Raghavan underscored the need for breaking open entrepreneurship in design across sectors to scale up technologies and boost local manufacturing for sustainable, inclusive development at his tech talk on 'Reboot, Reinvent & Resilience – Road ahead'

Two new initiatives of TIFAC—SAKSHAM (Shramik Shakti Manch)- a dynamic job portal for mapping the skills of Shramiks vis-à-vis requirements of MSMEs to directly connect Shramiks with MSMEs and facilitate placement of 10 lakh blue-collar jobs and a Seaweed Programme for commercial farming of seaweeds and its processing for value addition towards boosting national economy were launched on the occasion by Dr V K Saraswat, Chairman. The SAKSHAM job portal will help eliminate middlemen/ labour contractor as well as help identification of skill proficiency level and development of Skill Cards for Shramiks.

TIFAC also presented a short film on the glimpse of TIFAC and TIFAC's Imprint on National Economy

Two reports prepared by TIFAC -- 'Techno-economic feasibility on Indian bamboo as Wood Substitute' and 'Opportunities for Fruit and Vegetable Processing in North Eastern region of India' were released by Dr Vijay Chauthaiwale, an independent Healthcare consultant.

Release of the report "Study on Techno-Economic Feasibility on Indian bamboo - A Wood Substitute"

Release of the report "Opportunities for Fruits & Vegetable Processing in North East of India- a Technology Foresight Study

A panel discussion on 'Technology: An Engine for AatmaNirbharta', was organized during the occasion with the panellists consisting of Prof Ashutosh Sharma, Secretary, DST, Dr Shekhar C Mande, Secretary, DSIR & DG-CSIR, Dr G Satheesh Reddy, Secretary, Department of Defence R&D and Chairman, DRDO, Dr Vijay P Bhatkar, Chancellor, Nalanda University, Prof V Ramgopal Rao, Director-IIT Delhi, Dr Vijay Chauthaiwale, Healthcare Consultant and Shri Pallava Bagla, Science Journalist.

During the deliberations, its was pointed out that COVID-19 has forced India to become a new India in many ways and indigenized production of RT PCR, ventilators, PPE kit are some of the excellent examples where India is shown its capability. AatmaNirbharta should be seen from two contexts; capability to develop technology and capability to adopt technologies by society. We need to assess and understand in what all areas we can become AatmaNirbhar. The inner strength of technology development should be strong for achieving AtmaNirbharta. India needs to attain self-reliance in product development wherein efforts should be given for indigenous development of all components in manufacturing sector.

During the event, Chairman, TIFAC felicitated the employees who have completed 25 years of service in TIFAC.

TIFAC employee Ms Babita Bose, Ms Geeta Nair, Mr Adarsh Mayya T, Mr Suresh Kumar K, Ms Anita Nair, Mr Ranbir Singh, Ms Suja George and Ms Sridevi facilitated by Dr V K Sarswat for completion of 25 years of service in TIFAC

7.0 HUMAN RESOURCE DEVELOPMENT, PUBLICATION AND OUTREACH

TIFAC has been involved in various human resource development activities including internship schemes, publishing reports & articles, newsletters, delivering lectures & invited talks etc. The details are mentioned in the following section:

7.1 TIFAC Internship Scheme

Towards strengthening technology foresight activities of TIFAC, enhancing linkages with academia and sensitizing the students about future technology priorities, TIFAC implemented the internship scheme during 2013-2019. During the current year, three (3) students completed their internship projects. Topics on which student internees worked during the year 2020-21 are:

Table 7.1: Completed Internship Studies

Sl. No.	Name of Student Interns	Topic
1.	Bhagyashree J Balde	Modelling of Energy Demand and Delivery Systems for Transport Sector (Part I: Dynamic Wireless Power Transfer System): Guided by Sh Arghya Sardar, Scientist-F
2.	Suraksha Hirani	Modeling of Energy Demand and Delivery Systems for Transport Sector (Part II: Integration of Solar PV Systems): Guided by Sh Arghya Sardar, Scientist-F
3.	Sudha Singh	Traditional Foods – A Technology Perspective: Guided by Dr D Majumdar, Scientist-F

7.2 Papers in Refereed Journals/ Books/ Book Chapters

- V Sandeep, Suchitra Shastri, Arghya Sardar, Surender Reddy Salkuti; Modeling of battery pack sizing for electric vehicles; International Journal of Power Electronics and Drive System(IJPEDS); Vol.11, No.4, December 2020, pp. 1987~1994.
- Ashutosh Sharma, Pradeep Srivastava and Jancy Ayyaswamy (2021), "Role of MSME's for a Self-reliant India", The Institution of Engineers (India), IEI Centenary Publication, Engineering for Future.
- Satyavrat Tripathi, Bhisham Narayan Singh, Divakar Singh, Gaurav kumar and Pradeep Srivastava (2021). "Optimization and evaluation of ciprofloxacin-loaded collagen/chitosan scaffolds for skin tissue engineering", 3 Biotech, Springer.

- S Tripathi, BN Singh, S Divakar, G Kumar, SP Mallick and P Srivastava (2021), “Design and evaluation of ciprofloxacin loaded collagen chitosan oxygenating scaffold for skin tissue engineering.” Biomedical Materials (Accepted for Publication, IOP Science, I.F.-3.440, DOI: 10.1088/1748-605X/abd1b8/meta).
- Akher Ali, Bhisham N Singh, Sarada P Mallick and P Srivastava (2020), “CuO assisted borate 1393B3 glass scaffold with enhanced mechanical performance and cytocompatibility: An In vitro study.” Journal of the Mechanical Behavior of Biomedical Materials 114:1-10.- Elsevier (I.F.-3.372).
- Singh, B. N., V. Veeresh, Mallick, S. P. and P Srivastava (2020), "Generation of scaffold incorporated with nanobioglass encapsulated in chitosan/chondroitin sulphate complex for bone tissue engineering." International journal of biological macromolecules 153: 1-16. -Elsevier (I.F.-5.162).
- Mallick, S. P. and P. Srivastava (2020), "Strategies towards development of biodegradable hydrogels for biomedical applications", Polymer-Plastics Technology and Engineering – Taylor & Francis, Volume-59, Issue-9, 911-927 (I.F.-1.655).
- Sarada Mallick, Ishan S Chandel and Pradeep Srivastava (2020), Use of CFD tools in a novel ALR for chondrocyte regeneration. Brazilian J of Chem. Engg.
- Yashawant Dev Panwar, Sangeeta Nagar, Sanjay Mishra, Namita Gupta and Dipti (2021), Book “100 Success Stories of KIRAN IPR”, Book Published by TIFAC-DST, March 2021.

7.3 Technical Papers Published/Presented

Title of the paper Published/Presented	Name of Journal/Conference/symposium/workshop	Name of Scientist/Officer
Transitioning to a Low GHG Emissions Future for Agriculture in India	Handbook of Climate Change Management (2020): Springer	Pradhan S and Goswami G
"Intermodal and Intelligent Transportation Systems for Indian Transport Sector"	Journal of Energy and Environmental Sustainability in September, 2020.	Avinash Kumar Agarwal, Akhilendra Pratap Singh Sukrut S Thipse, Mukti Prasad
“A Review on Energy, Environment, and Emissions Issues in Indian Road Transport Sector”	Transactions of the Indian National Academy of Engineering.	Avinash Kumar Agarwal, Akhilendra Pratap Singh Sukrut S Thipse, and Goswami G
“Technology Innovation and Access for Climate Change Mitigation and	Chapter on BRICS Comprehensive Innovation Competitiveness Report (2020)	Gautam Goswami

Adaptation in India"		
'R & D Ecosystem in India' at one-week workshop on 'Writing Research Papers & Grant Proposals: Scientific, Technical, and Ethical Practices & Conduct'	NIT Uttarakhand workshop during August 24-28, 2020	Nirmala Kaushik
'Bioethanol production from surplus agri-residue : A sustainable option for India'	Elsevier Editorial System (tm) for Energy Conversion & Management or its open access mirror; (under publication submitted June, 2020)	Niveta Jain, V Seghal, H Pathak, A Cbhabra, O Kumar, A Sharma, A Bhatia, Nirmala Kaushik, Dolly W Dhar

7.4 Participation in National and International Conferences/Seminars/Symposia/ Workshops/ Meetings

Name of the event	Name of Scientist/Officer
Meetings of the Pre-screening Committee for Recognition of In-house R&D units (RDI) in Industry under Industrial Research & Development Promotion Programme (IRDPP) of DSIR (total 8 meetings)	Arghya Sardar
Meetings of the Expert Panel on Energy Storage for the UNIDO project Facilitation of Low Carbon Technology Development (4 meetings)	-Do-
Third meeting of the "DST-PSAO Group on Charging Infrastructure" held on November 10, 2020.	-Do-
Webinar on "Business Continuity Plan for Efficient Public Transportation and Path to Recovery Post COVID-19" organized by FICCI on June 05, 2020.	-Do-
2020 World Environment Day: Super Year for Nature and Biodiversity organized by United Nations Environment Programme and Ministry of Environment, Forest and Climate Change on June 05, 2020.	-Do-
Webinar on "Business Continuity Plan for Efficient Public Transportation and plan to recover post COVID-19" organized by FICCI on June 19, 2020.	-Do-
Kick-off event of the project "Nationally Determined Contributions – Transport Initiative for Asia (NDC-TIA)India Component" organized by GIZ India and NITI Ayog on August 27, 2020	-Do-
The Young Scientist Conference held during 22nd -24thDec, 2020, as a part of India International Science Conference organized by the Ministry	Ms. Mukti Prasad

of Science and Technology, Ministry of Earth Science and Ministry of Health and Family Welfare, Govt. of India in collaboration with VIBHA, over a virtual platform.	
National Webinar on "Ensuring Best Hygiene Practices in the Value Chain of Essential Commodities" organized by ASSOCHAM on June 29, 2020.	Dr Debabrata Majumder
National Webinar Atmanirbhar Bharat "Vocal for Local" Moving Towards Self Reliant India (Role of Women Entrepreneurs) organized by ASSOCHAM on October 19, 2020.	-Do-
Webinar on "Staple Food Fortification: A cost-effective strategy to eradicate malnutrition" organized by ASSOCHAM on November 5, 2020.	-Do-
Webinar on "Redefining Smart Machines in Dairy Industry" organized by CII on March 23, 2021.	-Do-
As A Member attended Sectional Committee meeting for Quality Management Sectional Committee, MSD 2 of Bureau of Indian Standard (BIS), New Delhi	-Do-
Webinar organised by CII – CSIR – Central Mechanical Engineering Research Institute on Solid Waste Management on May 20, 2020.	Ms Nirmala Kaushik
Webinar organised by CII with the support of the Office of the PSA to GoI on 'Innovative Technologies on antiviral coating on PPE's (masks and gloves); multilevel antimicrobial disinfectant coatings and hand sanitizers' being developed by BML Munjal University on May 22, 2020	-Do-
CII - 3M Webinar on 'The Science of Workplace Health & Safety' scheduled on July 03, 2020.	-Do-
CMT Bunker Fuels Webinar on 'Singapore's Marine Fuel Market in the Post-IMO 2020 & Pandemic Environment' on July 05, 2020.	-Do-
Web seminar titled "Build a Foundation for the Fastest Digital Innovation" on July 10, 2020.	-Do-
International Webinar on 'Entrepreneurship development on seaweed business by cooperatives' jointly organized by Department of Fisheries, GoI, LINAC-NCDC, and NEDAC, Bangkok on January 28, 2021.	Dr P K Anil Kumar
Meetings of Department of Heavy Industry to discuss the proposals for the development of web-based technology innovation platforms in October 2020	Ms Jancy Ayyaswamy
Webinar on Cybercrime organized by FICCI on April 10 2020	-do-
Webinar on Maximise the recovery of iron values from lean and low grade iron ore resources organized by CII, June 16, 2020	-do-

7.5 Invited Lectures

- Dr Gautam Goswami, Sc-G delivered a talk on "Technology Options for Enhancing Farmers Income Under Different Horticulture Production System" organized by J & K University on March 27, 2021.
- Dr Yashawant Dev Panwar, Scientist-F delivered a lecture on "Patent Drafting" in a webinar series organised by Patent Information Centre, DST Rajasthan on May 6, 2020
- Dr Yashawant Dev Panwar, Scientist-F delivered a lecture on "Intellectual Property Rights: Protection of Intellectual Property and Way Forward" in a webinar on IPR organised by VBS Purvanchal University, Jaunpur on May 22, 2020
- Dr Gautam Goswami, Sc-G delivered a talk on Technological Trends for the Next Generation, organised by Bhaskaracharya College of Applied Science, Delhi on June 1, 2020.
- Dr Yashawant Dev Panwar, Scientist-F delivered a lecture on "IPR" in a webinar with the theme "Aatma Nirbhar Bharat- Science and Technology- a post-COVID-19 era" organised by Maharaja Krishnakumarsinhji Bhavnagar University-Bhavnagar on June 12, 2020
- Dr T Chakradhar, Scientist -C delivered an online lecture on "Food and nutritional security with a focus on Food biotechnology" in a webinar series on Opportunities in Bioengineering - Food Biotechnology organized by DY Patil International University, Pune on July 04, 2020.
- Ms Sangeeta Nagar, Scientist-F delivered a lecture on "Relevance of IP in Today's World & Filing of IP" in a webinar ..organised by Consortium of Women Entrepreneurs of India (CWEI) on August 08, 2020
- Ms Sangeeta Nagar, Scientist-F delivered a lecture on "Scope of IP in Science" in a webinar organised by Consortium of Women Entrepreneurs of India (CWEI) on September 04, 2020
- Dr Yashawant Dev Panwar, Scientist-F delivered a lecture on "STI Policy and Governmental Incentives to Support IP in R&D" in a webinar on IP Protection, Generation & Commercialization organised by Patent Information Centre, KSCSTE, Trivandrum on September 29, 2020.
- Dr Gautam Goswami, Sc-G and Ms Jancy Ayyaswany, Sc-F delivered a talk on Technology Foresight for Climate Change Mitigation in India on October 13, 2020, during the Government Foresight Community (GFC) Annual Meeting (over a virtual platform) organized by the Organization for Economic Co-operation and Development (OECD Strategic Foresight Team).
- Dr Yashawant Dev Panwar, Scientist-F delivered a lecture on "Role of Patent Information in Driving Research in Universities" in a webinar organised by DSTs Center for Policy Research, Punjab University, Chandigarh on October 16, 2020
- Dr Yashawant Dev Panwar, Scientist-F delivered a talk on "Standard Essential Patents" in a online workshop organised by IIT Roorkee on October 26, 2020.
- Dr Yashawant Dev Panwar, Scientist-F delivered a talk on "Standard Essential Patents" in a online workshop organised by IIT Roorkee on October 26, 2020.

- Shri Arghya Sardar, Scientist-F participated and made a presentation in the Panel Discussion on ”Innovation in Energy Storage Solution Technology and its Applications” at the launch of the UNIDO-FLCTD project “Facilitation of Low Carbon Technologies” during “India Energy Storage Week (IESW) held on November 02, 2020.
- Shri Arghya Sardar, Scientist-F delivered an invited lecture titled “Electric Vehicle Component Choices – Future Scenario from Resource Efficiency Perspectives” at the AICTE-AQIS sponsored online short term training programme on “Challenges and Opportunities of Adoption of Electric Vehicle Technologies” organized by Shree Krishna College of Technology, Coimbatore on November 16, 2020.
- Dr Yashawant Dev Panwar, Scientist-F moderated a session on “Global Developments in SEP and FRAND” in a webinar organised by NIPO-ASSOCHAM on November 18, 2020
- Shri Arghya Sardar, Scientist-F Participated in the Panel Discussion on “Power Electronics Technology – Opportunities and Challenges in India” organized by the Institution of Engineers, India on December 08, 2020
- Shri Arghya Sardar, Scientist-F made a presentation on “Technology Foresight and Policies for E-mobility” at the “Workshop on Electrochemical Energy Storage Devices”, organized by Indian Institute of Technology, Delhi on December 11, 2020.
- Shri Arghya Sardar, Scientist-F delivered a lecture titled “Electric Vehicle Component Choices – Future Scenario from Resource Efficiency Perspectives” at the AICTE-AQIS sponsored online short term training programme on “Challenges and Opportunities of Adoption of Electric Vehicle Technologies” organized by Sri Krishna College of Technology, Coimbatore on December 18, 2020.
- Shri Arghya Sardar, Scientist-F delivered a lecture titled “R&D Initiatives at DST on Electric Vehicle and Energy Storage” at the IESA-training programme on “Energy storage and its importance with Renewable Integration, Grid Stability & Electric Vehicles” on January 21, 2021.
- Dr Yashawant Dev Panwar, Scientist-F delivered a lecture on “Unlocking IPR and Patents for Health Care” in HIPRACON 2020 “Health & Intellectual Property Rights Academy, India – HIPRA organised by Sri Balaji University, Pondichery on November 20, 2020.
- Dr Yashawant Dev Panwar, Scientist-F delivered a lecture on “Intellectual Property Rights (IPR) for grassroots” in a webinar series Science & Society Setu for AatmaNirbhar Bharat (S34ANB) jointly organised by DST, PSA Office, WWF and FICCI on December 3 and 4, 2020
- Dr Yashawant Dev Panwar, Scientist-F participated as expert on India Science Channel Live show “'Science Time” February 26, 2021
- Ms Sangeeta Nagar, Scientist-F delivered a lecture on “Introduction to IPR” in 5-day FDP Program under RTU-Kota organised by Arya College of Engineering & Information Technology, Jaipur on March 9, 2021
- Ms Sangeeta Nagar, Scientist-F delivered a lecture on “IP Protection & Monetization for Atmanirbhar Bharat” in a webinar organised by Punjab State Council for Science & Technology, Chandigarh on March 10, 2021
- Ms Sangeeta Nagar, Scientist-F delivered a lecture on “Introduction to

IPR" in a webinar on IPR organised by Kurukshetra University on March 12, 2021

- Ms Sangeeta Nagar, Scientist-F delivered a lecture on "Overview of IP" in a webinar ..organised by CIPAM in collaboration with MSME DI Guwahati for industry and Start-Ups in Guwahati on March 18, 2021
- Ms Sangeeta Nagar, Scientist-F delivered a lecture on "Benefits of IPR" in a webinar organised by CIPAM in collaboration with MSME DI Cuttack for industry and Start-Ups in Guwahati on March 26, 2021

7.6 TIFAC Newsletter

TIFAC publishes a Newsletter covering various progress made on activities and programmes of TIFAC to reach out to various stakeholders. During this year, TIFAC published one newsletter that highlighted articles & news on 33rd TIFAC Foundation Programme, launch of a web portal "Bhuvan Jaivoorja", TIFAC reports viz. TV2035 Road Map on Water Sector, 'Development and Applications of the Greenhouse Gas and Air Pollution Interactions and Synergies (GAINS) – City Model for Indian Cities', 'Conservation of Agrobiodiversity and ecosystem management, etc. In addition, information on Innovative products developed under TIFAC-SIDBI Technology Innovation Programme (Srijan) were also highlighted. The issue also covered an article on the MoU signed by TIFAC with International Institute for Applied Systems Analysis (IIASA), Austria.

8.0 INFRASTRUCTURE AND RESOURCES

TIFAC facilitates resources for smooth functioning and day to day activities to TIFAC employees by way of library, seamless internet connectivity, digital access to journals and e-office facility etc.

8.1 Library

TIFAC Library, a knowledge centre, facilitates and fosters the flow of scientific and technical information. During the period, TIFAC Library continued to strengthen its holdings by procuring scientific books, reports, journals and magazines as per the requirement of TIFAC. Fifty-four (54) scientific/technical books (including Hindi books) and reports were procured during the year, raising the total holding of TIFAC Library to 2572. In addition, TIFAC Library subscribed to twenty-one (21) scientific/technical journals and magazines. During the year, disseminated scientific and technical information published in the newspapers/ magazines to the scientists.

8.2 National Knowledge Network (NKN)

During the year, TIFAC continued to make use of the connectivity to the National Knowledge Network (NKN). This provides TIFAC a 100 mbps line for internet connectivity by NKN.

8.3 E-Resources and Implementation of E Office

TIFAC continued subscribing to E-resources through the National Knowledge Network Consortium (NKRC), a joint consortium of DST and CSIR. An anti-plagiarism software iThenticate was subscribed for the use by all the scientists in TIFAC. TIFAC has shifted on the eOffice platform for its day-to-day office activity and become the first autonomous institute of DST to have entered into e-platform for providing a faceless, contactless and paperless administration. The launch of the application marks a fundamental change in internal office procedures from manual handling of files and paper movement to digital. The eOffice became functional in TIFAC from November 04, 2020, with its launch by Prof Ashutosh Sharma, Secretary, DST, in the presence of TIFAC and DST officials. The eOffice plays a significant role in improving governance, transparency, accountability, data security & integrity and productivity of the staff. It is also an effort to comply with changing work culture and ethics of the government. Over 100 TIFAC officers and staff are using this application. The eOffice URL is www.eofficetifac.org.in.

TIFAC has also planned to implement the SPPAROW system for the digital filing of APAR for all the TIFAC employees

Launch of eOffice website in TIFAC by Prof Ashutosh Sharma, Secretary, DST in presence of DST & TIFAC Official at DST

8.4 TIFAC Information Interfaces

During the period, TIFAC continued to maintain the in-house website (https://tifac.org.in). Some design features of the website were changed and a new theme was applied to the website to give it a modern and contemporary look.

The section on TIFAC publications was updated regularly and information on reports published during the period was made available on the TIFAC website. The publications menu was revised to segment the reports. Live Twitter feeds were incorporated. The new logo depicting DST 50 years was placed on the website. In addition, tabs were created for new programmes evolved by TIFAC during the period.

The eOffice application was integrated into the TIFAC website with the login feature on the homepage. The user data capture' feature for tracking downloads was functional.

9.0 COMPLIANCES

9.1 Internal Complaints Committee (ICC)

TIFAC is compliant with the SHWW Act 2013 and has an Internal Complaints Committee (ICC) in place since 2014. TIFAC reconstituted the ICC Committee for the period from August 2020 to July 2023. The ICC is responsible for attending to the sexual harassment cases. Ensuring a safe and secure workspace for its women staff is the main motto of the ICC.

TIFAC also fulfills the requirements under Section 21(1) of the SHWW, which advocates Prevention, Prohibition and Redressal Act, 2013. It includes creating consciousness about the SHHW act among the employees by placing the posters on the various prominent places within premises with sufficient information about the members of the ICC as well as objectives and consequences of violating the SHWW act, conducting awareness workshops/ surveys etc. During the period April 2020 to March 2021, the ICC held three meetings and activities for spreading awareness about the Act.

9.2 Right to Information (RTI)

During the year 2020-21, TIFAC received 18 RTI's applications including RTI Appeals. All these applications (whether received online or by post) were entered onto the RTI portal and also were disposed off timely. The replies to all such queries were also made available online. TIFAC has also filed quarterly returns during the year 2020-21. As per the CIC guideline, TIFAC has Suo Moto disclosed the information on TIFAC website as per Section 4.0 of the RTI Act. The website was audited by a Third Party namely Indian Institute of Mass Communication (IIMC) in August 2020. TIFAC scored 82% for the information disclosed on the website.

9.3 Public Grievance

TIFAC has a Grievance Cell to address grievances received online through PG portal and offline as well. During the financial year 2020-2021, TIFAC received three grievances which were duly examined and disposed of within the stipulated time.

9.4 Official Language

The implementation of Official Language Policy is done under the guidance of the Official Language Implementation Committee and was continued during this year as well. Three Hindi workshops were organised for the benefit of employees. The Hindi Pakhwada was organised in September 2020. TIFAC employees participated in seven different competitions and were given certificates and cash prizes.

10. AUDITOR'S REPORT TOGETHER WITH AUDITED STATEMENT OF ACCOUNT

10.0 AUDITOR'S REPORT

SHIV TIBREWAL & CO.
Chartered Accountants
301, Rohit House, 3 Tolstoy Marg, Connaught Place, New Delhi - 110001
Ph.: 011-43723307, 43545218, Mob.: 9811118154 E-mail : stc_ca@yahoo.com

INDEPENDENT AUDITOR'S REPORT

The Members
The Governing Council
Technology Information, Forecasting and Assessment Council (TIFAC)
New Delhi

Report on the Financial Statements

1. We have audited the accompanying financial statements of M/s Technology Information, Forecasting and Assessment Council (TIFAC), New Delhi, (hereinafter referred to as 'Society') which comprise the Balance Sheet as at March 31, 2021 and the Statement of Income and Expenditure Account for the year then ended, and a summary of significant accounting policies and other explanatory information.

Management's Responsibility for the Financial Statements

2. The management of the Society is responsible for the preparation of these financial statements that give a true and fair view of the financial position and financial performance of the Society in accordance with the accounting principles generally accepted in India including Accounting Standards issued by the Institute of Chartered Accountants of India. Their responsibility includes maintenance of adequate accounting records for safeguarding the assets of the Society and for preventing and detecting frauds and other irregularities; selection and application of appropriate accounting policies; making judgments and estimates that are reasonable and prudent; design, implementation and maintenance of adequate internal financial controls, that are operating effectively for ensuring the accuracy and completeness of the accounting records, relevant to the preparation and presentation of the financial statements that give a true and fair view and are free from material misstatement, whether due to fraud or error.

Auditor's Responsibility

3. Our responsibility is to express an opinion on these financial statements based on our audit. We have conducted our audit in accordance with the Standards on Auditing issued by the Institute of Chartered Accountants of India. Those Standards require that we comply with ethical requirements and plan and perform the audit to obtain reasonable assurance about whether the financial statements are free from material misstatement.

4. An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditor's judgment, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditor

considers internal financial control relevant to the Society's preparation of the financial statements, that give a true and fair view, in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on whether the Society has in place an adequate internal financial controls system over financial reporting and the operating effectiveness of such controls. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of the accounting estimates made by the Society's management, as well as evaluating the overall presentation of the financial statements.

5. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

Opinion

6. In our opinion and to the best of our information and according to the explanations given to us, the aforesaid financial statements give the information required and give a true and fair view in conformity with the accounting principles generally accepted in India of the state of affairs of the Society as at 31st March 2021 and Excess of Income over Expenditure for the year ended on that date however subject to:

a) **Non recognition of various loans, amounting to Rs. 44.28 crores, given to various parties under various projects from the year 1992 to 2005 as Assets of the society in the Balance Sheet (Note No. 13 of Notes on Accounts of the Balance Sheet)**

b) **Non allocation of housekeeping, electricity, security services, water and horticulture expenditure between NECTAR and TDB for which the amount is unascertained. (Note No.9 of Notes on Accounts of the Balance Sheet).**

c) **Non recognition of an amount of Rs. 48,067/- recoverable from Smt. Sangeeta Nagar (Scientist F) as per Para 17 of the Audit Report dated 06/07/2018 of office of the Directorate General of Audit, Scientific Departments, A.G.C.R. Building, I. P. estate, New Delhi-110092 and corresponding rectification of Schedule of Fixed Assets.**

d) **Non recognition of Rs. 2.28 lakhs as delegation fees recoverable from the delegates of workshop organized by PFC division of the society from 12th January, 2017 to 14th January, 2017 as per the statutory audit report for the financial year 2016-17.**

e) **The society is not maintaining fixed assets register in proper format so as to show inventory of individual items of fixed assets. Physical verification of fixed assets items has not been done by the society and physical verification of the fixed assets is under process.**

f) The society is not maintaining inventories of publication of its reports.

g) Non recognition of an amount of Rs. 69,730/- recoverable from Mr. Vibhu Mushran, Scientist G, against excess transport allowance paid to him from 1.03.2014 to 30.11.2014, as per Para no. 8 of Part 1 of Internal Audit Report of DST for the period 1-4-2016 to 31-3-2018.

h) It has been observed that "IPIRTI, Bangalore", an institute to whom a grant of Rs.1,84,000/- was released on 11.08.2017, has not submitted Utilisation Certificate of this grant till the date of the audit.

i) The TDS has been deducted on the payment basis in some cases.

7) We further report that:

a) We have sought and obtained all the information and explanations which to the best of our knowledge and belief were necessary for the purpose of our audit;

b) In our opinion proper books of account as required by law have been kept by the Society so far as appears from our examination of those books;

c) The Balance Sheet and Statement of Income & Expenditure Account dealt with by this Report are in agreement with the books of account:

d) In our opinion, the aforesaid financial statements comply with the applicable Accounting Standards issued by the Institute of Chartered Accountants of India except where disclosed otherwise.

e) In our opinion and to the best of our information and according to the explanations given to us, we report as under with respect to other matters to be included in the Auditor's Report

i. The society does not have any pending litigations which would impact its financial position except referred in para B (a) to the notes of accounts.

ii. The Society did not have any long-term contracts including derivative contracts; as such the question of commenting on any material foreseeable losses thereon does not arise.

Date: 29.07.2021
Place: New Delhi

For Shiv Tiberwal & Co.
Charted Accountants
Firm Registration No. 01E391N

SHIV TIBERWAL & CO. New Delhi Chartered Accountants

(S.K. Tibrewal)
Partner
M. No. 080098
UDIN: 21080098AAAAIV4595

TECHNOLOGY INFORMATION, FORECASTING AND ASSESSMENT COUNCIL REPLIES TO AUDIT QUERY "ANNEXURE AR1"

The reply to the observation of Auditors are as given below :

6(a) The observations have been noted. This is due to the accounting procedure followed during the F.Y 1992-2005. However, the matter is being examined for making the required corrections.

6(b) Action regarding recovery of dues from NECTAR and Technology Development Board (TDB) is ongoing. Opinion noted for compliance in future.

6(c) The matter is under examination .

6(d) The workshop was organized by PFC and DRDO with both contributing towards the project. DRDO have already contributed the amount which has been adjusted towards the expenditure incurred under the workshop and the remaining amount held amounting to Rs.2.28 lakhs was to be adjusted as PFC contribution . The matter is being put up to the competent authority of TIFAC for approval for adjusting the balance amount of Rs.2.28 lakhs as part of PFC divisions contribution.

6(e) Noted for compliance as per instruction contained in Rule 213(3) of GFRs.

6(f) Matter is being taken up for compliance.

6(g) The matter related to payment of transport allowance to Mr Vibhu Mushran, Scientist G promoted under FCS has been referred to DST for opinion/decision.

6(h) The matter has been informed to the concerned division at TIFAC for informing the institute to submit the Utilization Certificate for the grant released by TIFAC for clearing the para.

6(I) Few bills pertaining to contractors for the month of March 2020 was submitted by the Parties in the month of June 2021 due to COVID-19 which was not considered as provision as the balance sheet for the F.Y 2020-21 has already been prepared.

Technology Information Forecasting And Assessment Council, (TIFAC)

Balance Sheet as at 31.03.2021

	Schedule	Current Year				Previous Year			
		TIFAC	PFC	WSS	Total	TIFAC	PFC	WSS	Total
CORPUS / CAPITAL FUND AND LIABILITIES									
Corpus / Capital Fund	1	400004157.37	9914914.05	8907741.46	418826812.88	35,85,92,437.61	-45,85,739.55	-3,10,574.96	**35,36,96,123.10**
Reserves and Surplus	2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Earmarked / Endowment Funds	3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Secured Loans and Borrowings	4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Unsecurred Loans and Borrowings	5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Deferred Credit Liabilites	6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Current Liabilites and Provisions	7	193136229.94	1470479.00	1564873.00	196171581.94	19,45,83,976.46	55,86,875.00	85,44,933.00	**20,87,15,784.46**
Total		**59,31,40,387.31**	**1,13,85,393.05**	**1,04,72,614.46**	**61,49,98,394.82**	**55,31,76,414.07**	**10,01,135.45**	**82,34,358.04**	**56,24,11,907.56**
Assets									
Fixed Assets (Net)	8	51889368.54	277011.30	80292.40	**52246672.24**	4,39,09,201.97	3,38,020.00	1,33,821.40	**4,43,81,043.37**
Investments-From Earmarked / Endowment Funds	9	141434000.00	0.00	0.00	**141434000.00**	13,87,68,800.00	0.00	0.00	**13,87,68,800.00**
Investments-Others	10	0.00	0.00	0.00	**0.00**	0.00	0.00	0.00	**0.00**
Current Assets, Loans, Advances etc.	11	399817018.77	11108381.75	10392322.06	**421317722.58**	37,04,98,412.10	6,63,115.45	81,00,536.64	**37,92,62,064.19**
Miscellaneous Expenditure					**0.00**				**0.00**
(to the extent not written off or adjusted)					**0.00**				**0.00**
Total		**59,31,40,387.31**	**1,13,85,393.05**	**1,04,72,614.46**	**61,49,98,394.82**	**55,31,76,414.07**	**10,01,135.45**	**82,34,358.04**	**56,24,11,907.56**
Significant Accounting Policies and Notes on Accounts	24								
Contingent Liabilities									

Subject to Schedule -1 to 24, forming part of the Balance Sheet

As per our report of even date Attached

For Shiv Tibrewal & Co.
Chartered Accountants
FRN NO. : 011391N

SHIV TIBREWAL & CO. New Delhi Chartered Accountants

Shiv Kumar Tibrewal
Partner
Membership No.080098
Date : 29/07/2021
Place : New Delhi

Accounts Officer
TIFAC
दीप प्रकाश / Deep Prakash
लेखा अधिकारी / Accounts Officer
प्रौद्योगिकी सूचना, पूर्वानुमान एवं मूल्यांकन परिषद् (टाइफैक)
Technology Information, Forecasting and Assessment Council (TIFAC)
(विज्ञान एवं प्रौद्योगिकी विभाग, भारत सरकार/Deptt. of Science & Technology, Govt. of India)
'अ' खण्ड, विश्वकर्मा भवन, जीत सिंह मार्ग, नई दिल्ली–110016
'A' Wing, Vishwakarma Bhawan, Shaheed Jeet Singh Marg, New Delhi-16

Incharge (Fin.&Admin)
TIFAC
मुकेश माथुर / MUKESH MATHUR
वैज्ञानिक 'एफ' एवं प्रभारी (वित्त एवं प्रशासन) / Scientist 'F' & In-charge (Fin. & Admin.)
प्रौद्योगिकी सूचना, पूर्वानुमान एवं मूल्यांकन परिषद् (टाइफैक)
Technology Information, Forecasting and Assessment Council (TIFAC)
(विज्ञान एवं प्रौद्योगिकी विभाग, भारत सरकार/Deptt. of Science & Technology, Govt. of India)
नई दिल्ली–110016 / New Delhi-110016

Executive Director
TIFAC
प्रो. प्रदीप श्रीवास्तव / Prof. Pradeep Srivastava
कार्यकारी निदेशक / Executive Director
प्रौद्योगिकी सूचना, पूर्वानुमान एवं मूल्यांकन परिषद् (टाइफैक)
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नई दिल्ली–110016 / New Delhi-110016

Technology Information Forecasting And Assessment Council, (TIFAC)

Income & Expenditure Account for the Year Ended 31.03.2021

	Schedule	Current Year				Previous Year			
Income		**TIFAC**	**PFC**	**WSSS**	**Total**	**TIFAC**	**PFC**	**WSSS**	**Total**
Income from Sales / Services	12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Grants / Subsidies	13	**210100000.00**	20000000.00	24570446.00	254670446.00	16,04,96,000.00	0.00	4,50,00,000.00	**20,54,96,000.00**
Fees / Subscriptions	14	200.00	0.00	0.00	200.00	1,400.00	0.00	0.00	**1,400.00**
Income from Investments	15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Income from Royalty, Publication etc	16	**2000.00**	0.00	0.00	2000.00	10,350.00	0.00	0.00	**10,350.00**
Interest Earned	17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Other Income	18	2472082.00	0.00	1186697.52	3658779.52	39,03,663.00	25,000.00	21,246.00	**39,28,663.00**
Increased/(Decrease) in stock of Finished Goods and Works-in-Progress	19	0.00	0.00	0.00	0.00	0.00	0.00	+	**0.00**
Refund from Projects	20	**950000.00**	0.00	0.00	950000.00	33,10,500.00	0.00	0.00	**33,10,500.00**
Total (A)		**21,35,24,282.00**	**2,00,00,000.00**	**2,57,57,143.52**	**25,92,81,425.52**	**16,77,21,913.00**	**25,000.00**	**4,50,21,246.00**	**21,27,46,913.00**
Expenditure									
Establishment & Other Administrative Expenses	21	127307097.98	4728861.70	16485298.10	148521257.78	13,89,44,973.56	1,01,29,210.70	4,25,35,452.23	**19,16,09,636.49**
Expenditure on Grant, Subsidies etc	22	33899504.01	668176.00	0.00	34567680.01	1,19,70,802.00	3,79,866.00	3,77,600.00	**1,27,28,268.00**
Interest	23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Depreciation (Net Total at the Year end)	8	10905960.25	102308.70	53529.00	11061797.95	56,26,064.00	1,29,653.00	89,214.00	**58,44,931.00**
Total (B)		**17,21,12,562.24**	**54,99,346.40**	**1,65,38,827.10**	**19,41,50,735.74**	**15,65,41,839.56**	**1,06,38,729.70**	**4,30,02,266.23**	**21,01,82,835.49**
Balance being excess of Income over Expenditure (Expenditure over Income)		4,14,11,719.76	1,45,00,653.60	92,18,316.42	6,51,30,689.78	1,11,80,073.44	-1,06,13,729.70	20,18,979.77	25,85,323.51
Transfer to Special Reserve (Specify each)									
Contingent Liabilities									

Subject to Schedule -1 to 24, forming part of the Balance Sheet
As per our report of even date Attached
For Shiv Tibrewal & Co.
Chartered Accountants
FRN NO. : 011391N

Shiv Kumar Tibrewal
Partner
Membership No.080098
Date : 29/07/2021
Place : New Delhi

SHIV TIBREWAL & CO. New Delhi Chartered Accountants

Accounts Officer
TIFAC
दीप प्रकाश / Deep Prakash
लेखा अधिकारी / Accounts Officer
प्रौद्योगिकी सूचना, पूर्वानुमान एवं मूल्यांकन परिषद (टाइफैक)
Technology Information, Forecasting and Assessment Council (TIFAC)
(विज्ञान एवं प्रौद्योगिकी विभाग, भारत सरकार/Deptt. of Science & Technology, Govt. of India)
'अ' खण्ड, विश्वकर्मा भवन, जीत सिंह मार्ग, नई दिल्ली–110016
'A' Wing, Vishwakarma Bhawan, Shaheed Jeet Singh Marg, New Delhi-16

Incharge (Fin.&Admin)
TIFAC
मुकेश माथुर / MUKESH MATHUR
वैज्ञानिक 'एफ' एवं प्रभारी (वित्त एवं प्रशासन) / Scientist 'F & In-charge (Fin. & Admin.)
प्रौद्योगिकी सूचना, पूर्वानुमान एवं मूल्यांकन परिषद् (टाइफैक)
Technology Information, Forecasting and Assessment Council (TIFAC)
(विज्ञान एवं प्रौद्योगिकी विभाग, भारत सरकार/Deptt. of Science & Technology, Govt. of India)
नई दिल्ली–110016 / New Delhi-110016

Executive Director
TIFAC
प्रो. प्रदीप श्रीवास्तव / Prof. Pradeep Srivastava
कार्यकारी निदेशक / Executive Director
प्रौद्योगिकी सूचना, पूर्वानुमान एवं मूल्यांकन परिषद् (टाइफैक)
Technology Information, Forecasting and Assessment Council (TIFAC)
(विज्ञान एवं प्रौद्योगिकी विभाग, भारत सरकार/Deptt. of Science & Technology, Govt. of India)
नई दिल्ली–110016 / New Delhi-110016

Technology Information Forecasting And Assessment Council, (TIFAC)
Schedules Forming Part of Balance Sheet as at 31.03.2021

Schedule 1 - Corpus / Capital Fund								
	Current year				Previous Year			
	TIFAC	PFC	WSSS	Total	TIFAC	PFC	WSSS	Total
Opening Balance (General)	18,85,92,437.61	(45,85,739.55)	(3,10,574.96)	18,36,96,123.10	17,74,12,364.17	60,27,990.15	(23,29,554.73)	18,11,10,799.59
Opening Balance (SIDBI Revolving Fund)	17,00,00,000.00			17,00,00,000.00	17,00,00,000.00			17,00,00,000.00
Total Opening Balance (A)	35,85,92,437.61	(45,85,739.55)	(3,10,574.96)	35,36,96,123.10	34,74,12,364.17	60,27,990.15	(23,29,554.73)	35,11,10,799.59
Excess of Income over Expenditure (Expenditure over Income)(C)	4,14,11,719.76	1,45,00,653.60	92,18,316.42	6,51,30,689.78	1,11,80,073.44	(1,06,13,729.70)	20,18,979.77	25,85,323.51
Total Closing Balance (A)+(B)+(C)	40,00,04,157.37	99,14,914.05	89,07,741.46	41,88,26,812.88	35,85,92,437.61	(45,85,739.55)	(3,10,574.96)	35,36,96,123.10

SHIV TIBREWAL & CO. Chartered Accountants New Delhi

Technology Information Forecasting And Assessment Council, (TIFAC)
Schedules Forming Part of Balance Sheet as at 31.03.2021

Schedule 2 - Reserve and Surplus : NIL

Schedule 3 - Earmarked/Endowment Funds : NIL

Schedule 4 - Secured Loans and Borrowings : NIL

Schedule 5 - Unsecured Loans and Borrowings : NIL

Schedule 6 - Deferred Credit Liabilites : NIL

Schedule 7 - Current Liabilities And Provisions :

Particulars	Current Year				Previous Year			
A) Current Liabilities	TIFAC	PFC	WSSS	TOTAL	TIFAC	PFC	WSSS	TOTAL
1. Sundry Creditors : a) For Goods				-				-
CGHS (Sh.Rajani Kanth Gupta) Ex. Registrar	-			-	2,550.00	-	-	2,550.00
URDIP Pune (WSSS)			11,164.00	11,164.00	-	-	11,164.00	11,164.00
TIFAC		-		-	-	25,52,772.00	-	25,52,772.00
Alaka Chakraborty	-			-	46,648.00	-	-	46,648.00
2. Statutory Liabilities				-				-
a) Others : TDS Payable (Sub Total (B) of Annexure -8)	15,47,761.00	67,823.00	1,046.00	16,16,630.00	11,30,171.00	9,147.00	3,282.00	11,42,600.00
3. Other Current Liabilities				-				-
IIT-TIFAC Maintenance (Provisions)	1,27,40,000.00		-	1,27,40,000.00	63,70,000.00	-	-	63,70,000.00
Grant : Global Technology Watch Growup (GTWG) (Annexure 10)	20,18,218.00		-	20,18,218.00	20,18,218.00	-	-	20,18,218.00
Grant : Interdisciplinary Cyber Physical Systems (ICPS)(Annexure 10)	1,00,785.00		-	1,00,785.00	11,54,094.00	-	-	11,54,094.00
Nationalsteering Committee on Tech Need Assessment (TNA) for Habitat Sector (MOEF&CC)	12,98,371.70		-	12,98,371.70	12,98,371.70	-	-	12,98,371.70
Grant : Technology Assessment of Start ups for Tax Exemption (Annexure 10)	6,09,478.00		-	6,09,478.00	6,09,478.00	-	-	6,09,478.00
Grant : Assessment of Government of India's Gender Mainstreaming Programs for Women in Science (Annexure 10)	5,18,723.00		-	5,18,723.00	13,41,524.00	-	-	13,41,524.00
Grant : Detail project report for National Mission on Quantum Technology & Application (NM-QTA) (Annexure 10)	7,57,435.00		-	7,57,435.00	5,00,000.00	-	-	5,00,000.00
Grant : Database of Technologies for Management of Muncipal Solid Waste (Annexure 10)	-		-	-	2,75,000.00	-	-	2,75,000.00
Grant : Experts Committee on Bibloomatrics (ECB)	3,65,600.00			3,65,600.00	-	-	-	-
International Womens Day KIRAN - IPR 2021	-		4,50,000.00	4,50,000.00	-	-	-	-
Retirement Benifit (Prof. Prabat Ranjan)			-	-	4,04,679.00		-	4,04,679.00
Bharat Kosh (Govt)	2,07,76,115.00	91,502.00	24,028.00	2,08,91,645.00	2,44,80,596.00	1,29,528.00	6,46,876.00	2,52,57,000.00
DRDO's Workshop Expenses		3,31,823.00	-	3,31,823.00	-	3,31,823.00	-	3,31,823.00
WIPO's Workshop Expenses		14,728.00	-	14,728.00	-	14,728.00	-	14,728.00
Sundry Creditor : PFC	-			-				-
Training of Trainers Programme		15,714.00	-	15,714.00	-	15,714.00	-	15,714.00
UNIDO Workshop		5,88,088.00	-	5,88,088.00	-	6,94,288.00	-	6,94,288.00
Expenses Payable (Sub Total (A) of Annexure - 8)	1,48,69,481.24	2,61,537.00	10,78,635.00	1,62,09,653.24	2,15,44,048.76	16,97,430.50	78,33,611.00	3,10,75,090.26
Medical Scheme	500.00		-	500.00				-
CPF	-		-	-	1,76,100.00	65,190.50	-	2,41,290.50
GPF	17,000.00		-	17,000.00	17,000.00	-	-	17,000.00
GSLIS	21,016.00		-	21,016.00	20,166.00	-	-	20,166.00
4 (a) Uspent Balance of Running Projects	-	76,254.00	-	76,254.00	3,03,139.00	76,254.00	-	3,79,393.00
4. (b) Due to DST (Uspenct Balance Amount In Respect of Old Projects) (List enclosed in Notes to Accounts at S.No7)	9,56,919.00		-	9,56,919.00	9,56,919.00	-	-	9,56,919.00
5.EMD/ Security Deposit (TIFAC) of (Annexure - 9)	5,33,784.00	23,010.00	-	5,56,794.00	6,88,784.00	-	50,000.00	7,38,784.00
6. Superannuation / Pension/Gratuity	7,27,28,255.00		-	7,27,28,255.00	7,09,79,624.00	-	-	7,09,79,624.00
7. Accumulated Leave Encashment	6,32,76,788.00		-	6,32,76,788.00	6,02,66,866.00	-	-	6,02,66,866.00
Total (A+B)	19,31,36,229.94	14,70,479.00	15,64,873.00	19,61,71,581.94	19,45,83,976.46	55,86,875.00	85,44,933.00	20,87,15,784.46

Technology Information Forecasting And Assessment Council, (TIFAC)
Schedules Forming Part of Balance Sheet as at 31.03.2021

(Amount – Rs)

SCHEDULE 8-FIXED ASSETS	GROSS BLOCK					DEPRECIATION			NET BLOCK	
	Rate of Depreciation	Cost / valuation As at beginning of the year	Additions during the year	Deductions during the year	Cost / valuation at the year end	As at the beginning of the year	On during the year	Total upto the year end	As at the current year end	As at the previous year end
A. FIXED ASSETS		-	-	-	-	-	-	-	-	-
1. LAND		-	-	-	-	-	-	-	-	-
a) Freehold		-	-	-	-	-	-	-	-	-
b) Leasehold		-	-	-	-	-	-	-	-	-
2. BUILDING		-	-	-	-	-	-	-	-	-
a) On Freehold Land		-	-	-	-	-	-	-	-	-
b) On Leasehold Land		-	-	-	-	-	-	-	-	-
c) Ownership Flats/Premises		-	-	-	-	-	-	-	-	-
d) Superstructures on Land not belonging to the entity	10.00	11,78,50,000.00	-	-	11,78,50,000.00	9,60,12,157.13	**21,83,784.00**	9,81,95,941.13	**1,96,54,058.87**	2,18,37,842.87
e) Interior work of TIFAC Building	10.00	5,28,12,381.00	20,060.00	-	5,28,32,441.00	3,74,28,181.58	**15,40,426.00**	3,89,68,607.58	**1,38,63,833.42**	1,53,84,199.42
3. PLANT MACHINERY & EQUIPMENT : Fire Alarm System at TIFAC Building & Fire Extinguishers	15.00	14,14,376.00	74,005.00	-	14,88,381.00	9,54,364.54	**78,986.50**	10,33,351.04	**4,55,029.96**	4,60,011.46
4. VEHICLES		-	-	-	-	-		-	-	-
5. FURNITURE & FIXTURES	10.00	29,46,875.60	59,983.00	-	30,06,858.60	19,03,869.92	**1,07,299.80**	20,11,169.72	**9,95,688.88**	10,43,005.68
6. OFFICE EQUIPMENT	15.00	2,77,92,471.58	8,25,059.00	-	2,86,17,530.58	2,32,08,004.75	**7,70,571.90**	2,39,78,576.65	**46,38,953.93**	45,84,466.83
6(A) OFFICE EQUIPMENT (Ext. Proj)	15.00	6,780.00	-	-	6,780.00	509.00	**940.70**	1,449.70	**5,330.30**	6,271.00
7. COMPUTER/PERIPHERALS	40.00	1,14,02,763.23	71,58,482.82	-	1,85,61,246.05	1,11,49,424.57	**18,06,671.40**	1,29,56,095.97	**56,05,150.08**	2,53,338.66
7 (A) COMPUTER/PERIPHERALS (Ext.Proj)	40.00	11,38,913.00	2,63,670.00	-	14,02,583.00	8,60,984.00	**2,16,639.60**	10,77,623.60	**3,24,959.40**	2,77,929.00
8. TIFAC SOFTWARE DEVELOPMENT	40.00	-	3,24,500.00		3,24,500.00	-	**64,900.00**	64,900.00	**2,59,600.00**	
9. ELECTRIC INSTALLATIONS			-	-	-			-	-	-
10. LIBRARY BOOKS	100.00	60,39,483.60	94,565.00		61,34,048.60	59,77,346.55	**1,09,419.55**	60,86,766.10	**47,282.50**	62,137.05
11. TUBEWELL & W.SUPPLY		-	-	-	-	-	-	-	-	-
12. OTHER FIXED ASSETS (E-Office)	40.00	-	1,00,65,802.00	-	1,00,65,802.00	-	**40,26,320.80**	40,26,320.80	**60,39,481.20**	-
TOTAL OF CURRENT YEAR		**22,14,04,044.01**	**1,88,86,126.82**	-	**24,02,90,170.83**	**17,74,94,842.04**	**1,09,05,960.25**	**18,84,00,802.29**	**5,18,89,368.54**	**4,39,09,201.97**
PREVIOUS YEAR		**22,03,42,730.01**	**10,61,314.00**	-	**22,14,04,044.01**	**17,18,68,778.04**	**56,26,064.00**	**17,74,94,842.04**	**4,39,09,201.97**	**4,84,73,951.97**
B. CAPITAL WORK IN PROGRESS										

Note : For the assets which have been put to use after 30st September 50% of the preseribed depreciation has been charged.

	F.Y 2018-2019	F.Y 2019-2020	F.Y2020-2021
Assets (External Projects)	Comp.	Office Equip.	Comp.
Under GTWG Project			
Under ICPS Project			
Under INSPIRE Project	86,700.00		
Under DIPP Project			
NM-QTA		6,780.00	2,63,670.00
Total	**86,700.00**	**6,780.00**	**2,63,670.00**

SHIV TIBREWAL & CO. New Delhi Chartered Accountants

Technology Information Forecasting And Assessment Council, (TIFAC)
Patent Facilitating Center (pfc)
Schedules Forming Part of Balance Sheet as At 31.03.2021

(Amount – Rs)

		GROSS BLOCK				DEPRECIATION			NET BLOCK	
SCHEDULE 8-FIXED ASSETS	Rate of Depreciation	Cost / v aluation As at beginning of the year	Additions during the year	Deductions during the year	Cost / valuation at the year end	As at the beginning of the year	On during the year	Total upto the year end	As at the current year end	As at the previous year end
A. FIXED ASSETS		-	-	-	-	-	-	-	-	-
1. LAND		-	-	-	-	-	-	-	-	-
a) Freehold		-	-	-	-	-	-	-	-	-
b) Leasehold		-	-	-	-	-	-	-	-	-
2. BUILDING		-	-	-	-	-	-	-	-	-
a) On Freehold Land		-	-	-	-	-	-	-	-	-
b) On Leasehold Land		-	-	-	-	-	-	-	-	-
c) Ownership Flats/Premises		-	-	-	-	-	-	-	-	-
d) Superstructures on Land not belonging to the entity	10.00	-	-	-	-	-	-	-	-	-
e) Interior work of TIFAC Building	10.00	-	-	-	-	-	-	-	-	-
3. PLANT MACHINERY & EQUIPMENT : Fire Alarm System at TIFAC Building & Fire Extinguishers	15.00	-	-	-	-	-	-	-	-	-
4. VEHICLES		-	-	-	-	-	-	-	-	-
5. FURNITURE & FIXTURES	10.00	48,000.00	-	-	48,000.00	11,064.00	3,693.60	14,757.60	33,242.40	36,936.00
6. OFFICE EQUIPMENT	15.00	2,29,159.00		-	2,29,159.00	75,805.00	23,003.10	98,808.10	1,30,350.90	1,53,354.00
7. COMPUTER/PERIPHERALS	40.00	4,16,180.00		-	4,16,180.00	2,68,450.00	59,092.00	3,27,542.00	88,638.00	1,47,730.00
8. TIFAC Software Development	40.00		41,300.00	-	41,300.00	-	16,520.00	16,520.00	24,780.00	-
8. ELECTRIC INSTALLATIONS		-	-	-	-	-	-	-	-	-
9. LIBRARY BOOKS	100.00	-	-		-	-	-	-	-	-
10. TUBEWELL & W.SUPPLY		-	-	-	-	-	-	-	-	-
11. OTHER FIXED ASSETS		-	-	-	-	-	-	-	-	-
TOTAL OF CURRENT YEAR		6,93,339.00	41,300.00	-	7,34,639.00	3,55,319.00	1,02,308.70	4,57,627.70	2,77,011.30	3,38,020.00
PREVIOUS YEAR		6,93,339.00	-	-	6,93,339.00	2,25,666.00	1,29,653.00	3,55,319.00	3,38,020.00	4,67,673.00
B. CAPITAL WORK IN PROGRESS										

Note : For the assets which have been put to use after 30st September 50% of the preseribed depreciation has been charged.

SHIV TIBREWAL & CO. New Delhi Chartered Accountants

Technology Information Forecasting And Assessment Council, (TIFAC)
Women Scientist Scholorship Scheme (wsss)
Schedules Forming Part of Balance Sheet as at 31.03.2021

(Amount – Rs)

		GROSS BLOCK				DEPRECIATION			NET BLOCK	
SCHEDULE 8-FIXED ASSETS	Rate of Depreciation	Cost / v aluation As at beginning of the year	Additions during the year	Deductions during the year	Cost / valuation at the year end	As at the beginning of the year	On during the year	Total upto the year end	As at the current year end	As at the previous year end
A. FIXED ASSETS		-	-	-	-	-	-	-	-	-
1. LAND		-	-	-	-	-	-	-	-	-
a) Freehold		-	-	-	-	-	-	-	-	-
b) Leasehold		-	-	-	-	-	-	-	-	-
2. BUILDING		-	-	-	-	-	-	-	-	-
a) On Freehold Land		-	-	-	-	-	-	-	-	-
b) On Leasehold Land		-	-	-	-	-	-	-	-	-
c) Ownership Flats/Premises		-	-	-	-	-	-	-	-	-
d) Superstructures on Land not belonging to the entity	10.00	-	-	-	-	-	-	-	-	-
e) Interior work of TIFAC Building	10.00	-	-	-	-	-	-	-	-	-
3. PLANT MACHINERY & EQUIPMENT : Fire Alarm System at TIFAC Building & Fire Extinguishers	15.00	-	-	-	-	-	-	-	-	-
4. VEHICLES		-	-	-	-	-	-	-	-	-
5. FURNITURE & FIXTURES	10.00	-	-	-	-	-	-	-	-	-
6. OFFICE EQUIPMENT	15.00	-	-	-	-	-	-	-	-	-
7. COMPUTER/PERIPHERALS	40.00	4,79,573.00	-	-	4,79,573.00	3,45,751.60	53,529.00	3,99,280.60	80,292.40	1,33,821.40
8. ELECTRIC INSTALLATIONS		-	-	-	-	-	-	-	-	-
9. LIBRARY BOOKS	100.00	-	-		-	-	-	-	-	-
10. TUBEWELL & W.SUPPLY		-	-	-	-	-	-	-	-	-
11. OTHER FIXED ASSETS		-	-	-	-	-	-	-	-	-
TOTAL OF CURRENT YEAR		4,79,573.00	-	-	4,79,573.00	3,45,751.60	53,529.00	3,99,280.60	80,292.40	1,33,821.40
PREVIOUS YEAR		4,79,573.00	-	-	4,79,573.00	2,56,537.00	89,214.00	3,45,751.00	1,33,821.40	2,23,035.40
B. CAPITAL WORK IN PROGRESS										

Note : For the assets which have been put to use after 30st September 50% of the preseribed depreciation has been charged.

SHIV TIBREWAL & CO. New Delhi Chartered Accountants

Technology Information Forecasting And Assessment Council, (TIFAC)
Schedules Forming Part of Balance Sheet as at 31.03.2021

Schedule 9 - Investments from Earmarked/Endowment Funds

Particulars	Current Year				Previous Year			
	TIFAC	PFC	WSSS	TOTAL	TIFAC	PFC	WSSS	TOTAL
1. In Government Securities				-				-
2. Other approved Securities				-				-
3. Shares				-				-
4. Debentures and Bonds				-				-
5. Subsidiaries and Joint Ventures				-				-
6. Others (TIFAC-SIDBI Revolving Fund)	14,14,34,000.00			14,14,34,000.00	13,87,68,800.00			13,87,68,800.00
Total	**14,14,34,000.00**	-	-	**14,14,34,000.00**	**13,87,68,800.00**	-	-	**13,87,68,800.00**

Schedule 10 - Investments - Others : NIL

Schedule 11 - Current Assets, Loans, Advances Etc

Particulars	Current Year				Previous Year			
1. Sundry Debtors :	TIFAC	PFC	WSSS	TOTAL	TIFAC	PFC	WSSS	TOTAL
a) Debts outstanding for a period exceeding six months	2,70,000.00	2,22,775.00		4,92,775.00	2,70,000.00	2,22,775.00		4,92,775.00
2. Cash Balances in Hand (including Cheques / Drafts and Imprest) (Under TIFAC Account)	**7,265.00**	**1,793.00**	**1,667.00**	10,725.00	**79,048.00**	**3,293.00**	**12,367.00**	94,708.00
3. Bank Balances :				-				-
Union Bank of India : Deposit Accounts (Short Term deposits) (Annex-7)	21,47,28,095.00	-	-	21,47,28,095.00	21,72,54,220.00	-	-	21,72,54,220.00
Union Bank of India : Flexi Deposit Account (Annex - 7)	10,00,000.00	-	-	10,00,000.00	5,00,000.00	-	-	5,00,000.00
Accrued Interest (Accrued Interest) (Annexure 7)	44,09,847.00	-	-	44,09,847.00	56,17,476.00	-	-	56,17,476.00
On Savings Accounts	17,35,76,958.05	1,05,83,199.75	1,03,90,655.06	19,45,50,812.86	14,14,16,592.10	1,63,697.45	76,31,100.64	14,92,11,390.19
B) Loans, Advances and Other Assets :-				-				-
1. Loans:				-				-
a) Staff Loan (Under TIFAC Account) (Annex-1)	6,57,367.00	-	-	6,57,367.00	7,85,893.00	-	-	7,85,893.00
Advance : DAVP	1,77,581.00	2,65,780.00	-	4,43,361.00	1,77,581.00	2,65,780.00	1,51,562.00	5,94,923.00
Advance : M/s Balmer Lawrie & Co. Ltd.	1,12,476.00		-	1,12,476.00	1,12,476.00			1,12,476.00
Advance : CSIR-Centreal Glass & Ceramic Research Institute	8,550.00		-	8,550.00	8,550.00			8,550.00
Advance : India International Centre	624.00		-	624.00				-
Advance : Special Festival Package	1,31,000.00		-	1,31,000.00				-
Advance : NICSI (Sparrow)	22,58,662.00			22,58,662.00				-
Grant : Scientific Social Responsibility (SSR) Policy (Annexure 10)	1,15,000.72		-	1,15,000.72	2,07,000.00			2,07,000.00
Security Deposit	8,403.00		-	8,403.00	8,403.00			8,403.00
Sundry Debtor : PFC	-		-	-	25,52,772.00			25,52,772.00
WSSS (Overhead) receivable	8,29,950.00			8,29,950.00				-
Womens Day & Certificate Distribtuion Ceremony & International Womens Day (10 Batch)			-	-			2,92,576.00	2,92,576.00
TDS Receivable from Income Tax Department (DIPP)	1,40,400.00	1,972.00	-	1,42,372.00	1,40,400.00	1,972.00		1,42,372.00
Interest Accrued from Union Bank of India (on Savings Bank Account)	13,84,840.00	32,862.00	-	14,17,702.00	13,68,001.00	5,598.00	12,931.00	13,86,530.00
Total (A) + (B)	**39,98,17,018.77**	**1,11,08,381.75**	**1,03,92,322.06**	**42,13,17,722.58**	**37,04,98,412.10**	**6,63,115.45**	**81,00,536.64**	**37,92,62,064.19**

Technology Information Forecasting And Assessment Council, (TIFAC)
Schedules Forming Part of Balance Sheet as at 31.03.2021

Schedule 12 - Income From Sales / Services : NIL

Scheudel 13 - Grants / Subsidies (TIFAC Regular)

Particulars	Current Year				Previous Year			
	TIFAC	PFC	WSSS	TOTAL	TIFAC	PFC	WSSS	TOTAL
1. From Central Government				-				-
TIFAC Grant				-				-
a) Grants in Aid (Plan)	13,93,00,000.00	2,00,00,000.00	2,45,70,446.00	18,38,70,446.00	6,92,93,000.00		4,50,00,000.00	11,42,93,000.00
b) Grant in Aid (Non-Plan)				-				-
c) Grant in Aid (Plan) Capital Assets				-	29,79,000.00			29,79,000.00
d) Grant in Aid (Salary)	7,08,00,000.00			7,08,00,000.00	8,82,24,000.00			8,82,24,000.00
Total	21,01,00,000.00	2,00,00,000.00	2,45,70,446.00	25,46,70,446.00	16,04,96,000.00	-	4,50,00,000.00	20,54,96,000.00

Schedule 14 - Fees / Subscriptions

Particulars	Current Year				Previous Year			
	TIFAC	PFC	WSSS	TOTAL	TIFAC	PFC	WSSS	TOTAL
Award for Nari Shakti				-				-
RTIA Questions	200.00			200.00	1,400.00			1,400.00
Total	200.00	-	-	200.00	1,400.00	-	-	1,400.00

Schedule 15 - Income From Investments (Income on Invest. From Earmarked/Endowment Funds transferred to Funds) : NIL

Schedule 16 - Income from Royalty, Publication Etc.

Particulars	Current Year				Previous Year			
	TIFAC	PFC	WSSS	TOTAL	TIFAC	PFC	WSSS	TOTAL
1) Income from Royalty				-				-
2) Sale of Publications	2,000.00			2,000.00	10,350.00			10,350.00
3) Other (Specify)				-				-
Total	2,000.00	-	-	2,000.00	10,350.00	-	-	10,350.00

SHIV TIBREWAL & CO. New Delhi Chartered Accountants

Technology Information Forecasting And Assessment Council, (TIFAC)
Schedules Forming Part of Balance Sheet as at 31.03.2021

Schedule 17 - Interest Earned (Regular)

Particulars	Current Year				Previous Year			
	TIFAC	PFC	WSSS	TOTAL	TIFAC	PFC	WSSS	TOTAL
1. On Term Deposits				-				-
a) Union Bank of India, (Scheduled Banks)	-			-				-
2. On Savings Accounts				-				-
Interest from Savings Bank (General)	-	-	-	-	-			-
Interest from Savings Bank Salary Account	-			-	-			-
Interest from Savings Bank Flexi Account	-			-	-			-
3. On Loans :				-				-
a) Employees (LTA, Scooter ,Car, tour ,LTC, HBA and Computers)	-	-		-	-			-
b) Others (Interest from Income Tax and Projects)	-			-	-			-
4. Interest on Debtors and Other Receivables (TIFAC-SIDBI Revolving Fund)				-				-
Total	-	-	-	-	-	-	-	-

Note : Tax deducted at source to be indicated

Schedule 18 - Other Income

Particulars	Current Year				Previous Year			
	TIFAC	PFC	WSSS	TOTAL	TIFAC	PFC	WSSS	TOTAL
1.Miscellaneous Income				-				-
Other Receipts	58,893.00			58,893.00	1,32,758.00			1,32,758.00
Leave Salary & Pension Contribution	2,05,983.00			2,05,983.00	1,45,253.00			1,45,253.00
Encashment of Leave	22,247.00			22,247.00				
Licence Fee : Dr Prabhat Ranjan				-	2,56,416.00			2,56,416.00
Transport Recovery (Prof. Prabat Ranjan)				-	7,32,892.00			7,32,892.00
Stale Cheque (Written Back)				-	1,59,600.00	25,000.00	21,246.00	2,05,846.00
Transport Recovery (Sh Sanjay Singh)	1,27,571.00			1,27,571.00	2,01,742.00			2,01,742.00
efund : Textile Technology & Machinery at KCT, Coimbatore (Unspent Balan	8,54,000.00			8,54,000.00				-
Chennai Centre - KIRAN IPR (Unspent Balance)			11,86,697.52	11,86,697.52				-
Maintenance of Building (SETS)				-	33,840.00			33,840.00
Maintenance of Building (Technology Development Board)				-	19,08,655.00			19,08,655.00
2. Income Accrued and Received on Running Projects				-				-
Overhead : Assessment of Government of India's Gender Mainstreaming Programs for Women in Science	54,073.00			54,073.00	8,343.00			8,343.00
Overhead : Detail Project Report for National Mission	3,19,365.00			3,19,365.00				
Overhead : WSSS	8,29,950.00			8,29,950.00				
Overhead : Scientific Social Responsibility (SSR)				-	3,24,164.00			3,24,164.00
Total	**24,72,082.00**	-	**11,86,697.52**	**36,58,779.52**	**39,03,663.00**	**25,000.00**	**21,246.00**	**39,49,909.00**

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Technology Information Forecasting And Assessment Council, (TIFAC)
Schedules Forming Part of Balance Sheet as at 31.03.2021

Schedule 19 - Increase / (Decrease) in stock of Finished Goods & Work in Progress : NIL

Schedule 20 - Refund from Projects, (TIFAC Regular Account)

Particulars	Current Year				Previous Year			
	TIFAC	PFC	WSSS	TOTAL	TIFAC	PFC	WSSS	TOTAL
Home Grown Technology (Annex-2)	8,00,000.00	-	-	8,00,000.00	19,60,500.00	-		19,60,500.00
Advanced Composites Programme (Annex-2)	1,50,000.00	-	-	1,50,000.00	6,00,000.00	-		6,00,000.00
Sugar Technology Mission (Annex-2)	-	-	-	-	7,50,000.00	-		7,50,000.00
Total	9,50,000.00	-	-	9,50,000.00	33,10,500.00	-	-	33,10,500.00

Schedule 21 - Establisment & Other Administrative Expenses

Particulars	Current Year				Previous Year			
	TIFAC	PFC	WSSS	TOTAL	TIFAC	PFC	WSSS	TOTAL
Establishment Expenditure(Annex 3)	10,83,26,247.64	8,39,277.00	1,52,83,407.00	12,44,48,931.64	11,97,18,714.76	75,69,159.00	29,07,036.00	13,01,94,909.76
Administrative Expenses (Annex 4)	1,89,80,850.34	38,89,584.70	12,01,891.10	2,40,72,326.14	1,92,26,258.80	25,60,051.70	3,96,28,416.23	6,14,14,726.73
Establishment & Administrative Expenditure (Vision 2020)(Annex-6)	-			-	-			-
Total	12,73,07,097.98	47,28,861.70	1,64,85,298.10	14,85,21,257.78	13,89,44,973.56	1,01,29,210.70	4,25,35,452.23	19,16,09,636.49

Schedule 22 - Expenditure on Grants, Subsidies Etc

Particulars	Current Year				Previous Year			
	TIFAC	PFC	WSSS	TOTAL	TIFAC	PFC	WSSS	TOTAL
Grants given to Institutions/Organisations				-				-
Project Expenditure (Annex - 5)	3,33,92,543.01	6,68,176.00	-	3,40,60,719.01	64,37,316.00	3,79,866.00	3,77,600.00	71,94,782.00
Project Expenditure (Vision 2020)(Annex-6A)	5,06,961.00			5,06,961.00	54,96,649.00			54,96,649.00
Project Expenditure (Vision 2035) (Annex-6&6A)	-			-	36,837.00			36,837.00
Total	3,38,99,504.01	6,68,176.00	-	3,45,67,680.01	1,19,70,802.00	3,79,866.00	3,77,600.00	1,27,28,268.00

Schedule 23 - Interest : NIL

SHIV TIBREWAL & CO. New Delhi Chartered Accountants

Technology Information, Forecasting & Assessment Council
Schedule Forming Part of The Accounts For The Year Ended 31.03.2021

SCHEDULE 24

A. SIGNIFICANT ACCOUNTING POLICIES

1. The financial statements are prepared under the historical cost convention on going concern basis. The Society follows the mercantile system of accounting except receipt of Government grants, Royalty, sale of publications and as stated in the below paras.
   - (i) On the Grants on which Overhead @ 20% is granted to the society, they are taken as income in the year of receipt of grant irrespective of the fact whether the sanctioned grant is actually spent or not.
   - (ii) Regular Grants in the form of General Grants, Salary Grants and Capital Assets Grants are treated as income of the society of the year in which it is received and regular expenditure are treated as expenditure during the year and unspent portion of the Grants received for specific projects are shown as liabilities.
   - (iii) Amounts released as grants under various projects are accounted for as expenditure for the year in which the same are released, irrespective of the fact that the amounts so released may not have been fully utilized towards the projects during the year.
   - (iv) The repayment of Loans/assistance by the beneficiaries to the society as per the conditions stated in the respective agreements is accounted for on receipt basis.
   - (v) In cases where the projects are executed by other institutions, all disbursements of grants irrespective of its utilization by them for projects are treated as expenditure during the Financial Year in which the grant is released.
2. Fixed assets are stated at cost less accumulated depreciation. Cost comprises the purchase price and any attributable cost of bringing the asset to its working condition for its intended use.
3. Depreciation on fixed assets is computed on the written down value (WDV) method at the rates and in the manner prescribed under the provisions of Income Tax Act, 1961.
4. Total expenditure is not bifurcated into plan and non-plan expenditure in the financial statements of the society.

B. CONTINGENT LIABILITIES AND NOTES ON ACCOUNTS

a. Contingent Liabilities

Some legal cases have been filed against the Society for which liability may arise in future. The amount is not ascertainable.

b. Notes on Accounts

1. Though society runs various projects under the instructions and guidance of Department of Science and Technology (DST), Ministry of Science and Technology, separate accounts for project-wise have not been maintained for the unutilized amount on the project for which the grant/fund released and accounted for as expenditure as per accounting policies.

SHIV TIBREWAL & CO. New Delhi Chartered Accountants

Technology Information, Forecasting & Assessment Council
Schedule Forming Part of The Accounts For The Year Ended 31.03.2021

2. Other current liabilities include amount refundable to DST on account of unutilized balance under various projects which have since been closed the details of which is given as under :-

S. No.	Particulars - Current Liabilities (Schedule 7)	Amount (Rs.)
1.	MSEB-Ash Utilisation/ Management	6,00,094.00
2.	MPSEB use of Fly Ash in Agriculture Development Thermal Power Plants, Sarni	3,56,825.00
	Total	**9,56,919.00**

3. Other Current liabilities also include the net amount of the Grants received for external projects from DST and amount released for them. No period wise details have been maintained to adjust the same either by the release to the project or refund to the DST (grantee).

4. Current Assets includes balance receivable from M/s Balmer Lawrie & Co. Ltd for Rs. 1,12,476/- which is pending for adjustment since long.

5. An amount of Rs. 81,042/- under the head staff Tour advance to Mr. Sajid Mubashir is receivable since 2005 and is need to be adjusted by getting the requisite claim.

6. EMD/ Security Deposits includes Rs. 4,38,784/- being long outstanding amounts for more than 8 years which may be adjusted.

7. 'Sundry Debtors' under the head Current Assets, Loans and Advances include Rs. 2,70,000/- as amount recoverable from Shree Chitra Tribunal Institute for Medical Science and Technology, an Autonomous Institute under Ministry of Science and Technology which is outstanding since March 2011.

8. Stock of Publications and Studies, which are published and printed by the Society and distributed at a cost are not accounted for as Stock in hand at the end of the year.

9. NECTAR & TDB have been using approximately 10,000 Sq Ft. & 3,000 Sq Ft. respectively out of total useable area of 50,000 Sq Ft. available with TIFAC but no share of maintenance from NECTAR and TDB is being charged for current year since the matter has not yet been decided by DST.

10. In the opinion of the Management, the current assets, loans and advances have a value on realization in the ordinary course of business, at least equal to the amount at which they are stated in the Balance Sheet.

11. In view of there being no taxable income under Income tax Act, 1961 as per section 10(23c) applicable to the Society, no provision for Income Tax has been considered necessary.

SHIV TIBREWAL & CO. New Delhi Chartered Accountants

Technology Information, Forecasting & Assessment Council
Schedule Forming Part of The Accounts For The Year Ended 31.03.2021

12. FOREIGN CURRENCY TRANSACTIONS

	(Amount Rs.) Current Year	Previous Year
12.1 Value of Imports Calculated on C.I.F. Basis:		
Purchase of finished Goods	Nil	Nil
Raw Materials & Components (Including in transit)	Nil	Nil
Capital Goods	Nil	Nil
Stores, Spares & Consumables	Nil	Nil
12.2 Expenditure in foreign currency:		
a) Travel	Nil	2,31,284/-
b) Remittances and Interest Payment to Financial Institutions/ Banks in Foreign Currency	Nil 14,87,965/-	Nil 9,03,609/-
c) Patents Filing abroad		
d) Other expenditure:		
- Membership Fees	3,06,23,945/-	Nil
- Legal and Professional Expenses	Nil	Nil
- Miscellaneous Expenses	Nil	Nil
12.3 Earning:		
Value of Exports on FOB basis	Nil	Nil
12.4 Remuneration to Auditors:		
- Audit Fees	1,32,000/-	1,10,000/-
- Taxation matters	Nil	Nil
- Consultancy Charges	Nil	Nil
- Certification	Nil	Nil
- Goods & Service Tax	23,760/-	19,800/-

13. The Society had given loans to various parties under various projects from the year 1992 to 2005 which were written off in the Financial Years in which they were given as per the then prevailing accounting policies of the society. At the time of their respective disbursements, these loans had not been recognized as loans and advances and hence do not reflect in the assets side of the balance sheet of the society. The details are given as follows :-

Name of the Project	Overdue upto 3 years	Overdue more than 3 years	Total
Home Grown Technology	0.00	166246195.36	166246195.36
Advanced Composite Programme	0.00	134858293.00	134858293.00
Sugar Technology Unit	0.00	26479118.00	26479118.00
Fly Ash Utilization	0.00	11834000.00	11834000.00
Agriculture and Agro Food Sector	0.00	10625000.00	10625000.00
Targeted Programme in other Important Areas	0.00	92765000.00	92765000.00
Total	**0.00**	**442807606.36**	**442807606.36**

SHIV TIBREWAL & CO. New Delhi Chartered Accountants

Technology Information, Forecasting & Assessment Council
Schedule Forming Part of The Accounts For The Year Ended 31.03.2021

14. CPF Trust Account collects money from the staff of TIFAC as well as from TIFAC as employer and invests this amount in Fixed Deposits of Nationalized Banks on which interest in earned as per the prevailing bank rates. Similarly the trust provides interest to the staff at the rates prescribed in CPF Act from time to time which results in difference of interest earned & interest paid amount. During the Financial Year 2020-21 there was a deficit of Rs. 24,91,011.64 with the CPF Trust due to difference in interest provided on the balance of employees and interest earned on deposits with the Nationalised Banks and the same to be recovered from the TIFAC.

15. An amount of Rs.48,059.44 has been shown as depreciation written back on the laptop misplaced by Scientist F, (Ms Sangeeta Nagar) in the F.Y 2009-2010 but the depreciation was being claimed till F.Y. 2017-18. The amount is now shown as recoverable from her.

16. An amount of Rs.2,08,91,645/- has been transferred to Bharat Kosh Account, earned as Interest against deposits with Nationalised banks for the years 2020-21.

17. Previous year's figures have been regrouped/rearranged wherever found necessary to make them comparable with current year figures.

18. The Grants have been given on the basis of utilisation certificates issued by the Institute itself to which the grant has been given and not certified by the designated auditors of the institute, who had audited the accounts of the institute, regarding the expenditure incurred by the institute for the given specified project.

19. The TDS has been deducted on the payment basis in some cases.

20. Schedules 1 to 24 are annexed to and form an integral part of the Balance Sheet as at 31.03.2021 and the Income and Expenditure Account for the year ended on that date.

As per our report of even date annexed herewith

For SHIV TIBREWAL & CO.
Chartered Accountants
FRN: 011391N

SHIV TIBREWAL & CO. New Delhi Chartered Accountants

S.K. TIBREWAL
(Partner)
MRN: 080098

Accounts Officer
TIFAC

Incharge(Fin.&Admin.)
TIFAC

Executive Director
TIFAC

मुकेश माथुर / MUKESH MATHUR
वैज्ञानिक 'एफ' एवं प्रभारी (वित्त एवं प्रशासन) / Scientist 'F & In-charge (Fin. & Admin.)
प्रौद्योगिकी सूचना, पूर्वानुमान एवं मूल्यांकन परिषद् (टाइफैक)
Technology Information, Forecasting and Assessment Council (TIFAC)
(विज्ञान एवं प्रौद्योगिकी विभाग, भारत सरकार/Deptt. of Science & Technology, Govt. of India)
नई दिल्ली–110016 / New Delhi-110016

प्रो. प्रदीप श्रीवास्तव / Prof. Pradeep Srivastava
कार्यकारी निदेशक / Executive Director
प्रौद्योगिकी सूचना, पूर्वानुमान एवं मूल्यांकन परिषद् (टाइफैक)
Technology Information, Forecasting and Assessment Council (TIFAC)
(विज्ञान एवं प्रौद्योगिकी विभाग, भारत सरकार/Deptt. of Science & Technology, Govt. of India)
नई दिल्ली–110016 / New Delhi-110016

Date: 29/07/2021
Place: New Delhi

दीप प्रकाश / Deep Prakash
लेखा अधिकारी / Accounts Officer
प्रौद्योगिकी सूचना, पूर्वानुमान एवं मूल्यांकन परिषद् (टाइफैक)
Technology Information, Forecasting and Assessment Council (TIFAC)
(विज्ञान एवं प्रौद्योगिकी विभाग, भारत सरकार/Deptt. of Science & Technology, Govt. of India)
'अ' खण्ड, विश्वकर्मा भवन, जीत सिंह मार्ग, नई दिल्ली–110016
'A' Wing, Vishwakarma Bhawan, Shaheed Jeet Singh Marg, New Delhi-16

Staff Advances

PARTICULARS	Current Year				Previous Year			
	TIFAC	PFC	WSSS	TOTAL	TIFAC	PFC	WSSS	TOTAL
Staff Advances under TIFAC Account								
B) HBA Advance								
Ms. Sangeeta Baksi	1,87,200.00			**1,87,200.00**	2,37,600.00			**2,37,600.00**
C) Car Advance								-
Sh.T.Chandrasekhar	49,500.00			**49,500.00**	60,300.00			**60,300.00**
Sh.Deep Prakash				-	16,000.00			**16,000.00**
Sh.Yashwant Dev Panwar	54,000.00			**54,000.00**	75,600.00			**75,600.00**
D) Leave Travel Concessation				-				-
E) Tour Advance				-				-
Sh.Sajid Mubashir	81,042.00			**81,042.00**	81,042.00			**81,042.00**
Sh T Chandrasekhar				-	40,000.00			**40,000.00**
Sh Anil Kumar Rai				-	15,650.00			**15,650.00**
F) Scooter Advance				-				
Sh.Surender Kumar				-	2,000.00			**2,000.00**
G)Computer Advance				-				-
Sh Mahipal Singh Rawat	35,000.00			**35,000.00**				
Sh Sanjay Sundriyal	45,000.00			**45,000.00**				
Sh Deep Prakash	21,875.00			**21,875.00**	59,375.00			**59,375.00**
Sh Deepak Kumar	25,000.00			**25,000.00**	62,500.00			**62,500.00**
Sh Ravi Dutt	31,000.00			**31,000.00**	43,000.00			**43,000.00**
Sh S K Muneshwar	29,750.00			**29,750.00**	69,950.00			**69,950.00**
Sh Kunwar Singh	50,000.00			**50,000.00**				-
Sh.Bishram Bhakta	48,000.00			**48,000.00**				-
H) Advances				-				-
Sh Ravindra Kumar, AMT	-			-	15,000.00			**15,000.00**
Sh Ajay Kumar Diwakar	-			-	5,000.00			**5,000.00**
Sh Anoop Aswal	-			-	2,876.00			**2,876.00**
Total	**6,57,367.00**	-	-	**6,57,367.00**	**7,85,893.00**	-	-	**7,85,893.00**

SHIV TIBREWAL & CO
New Delhi
Chartered Accountants

Refund From Projects Financed (tifac Regular Account) - Income

Annexure 2

PARTICULARS	Current Year				Previous Year			
	TIFAC	PFC	WSSS	TOTAL	TIFAC	PFC	WSSS	TOTAL
(A) Home Grown Technology :								
Manufacture of Nutan Himveer Bukhari	-	-	-	-	3,10,000.00	-	-	**3,10,000.00**
Manufacture of 3,4 Dichloroaniling using Solvent Free Separation Technology	-	-	-	-	16,50,500.00	-	-	**16,50,500.00**
Up Scaling Technology for Processed Coir	8,00,000.00	-	-	**8,00,000.00**	-	-	-	
Sub Total (A)	**8,00,000.00**	-	-	**8,00,000.00**	**19,60,500.00**	-	-	**19,60,500.00**
(B) Advanced Composites Programme								
Development of Composite Modular Acoustic Enclosure	1,50,000.00	-	-	**1,50,000.00**	6,00,000.00	-	-	**6,00,000.00**
Sub Total (B)	**1,50,000.00**	-	-	**1,50,000.00**	**6,00,000.00**	-	-	**6,00,000.00**
(C) Sugar Technology Mission								
Low Pressure Extraction System (LPE)	-	-	-	-	7,50,000.00	-	-	**7,50,000.00**
Sub Total (D)	-	-	-	-	**7,50,000.00**	-	-	**7,50,000.00**
Total (A) + (B) + (C) + (D)+(E)	**9,50,000.00**	-	-	**9,50,000.00**	**33,10,500.00**	-	-	**33,10,500.00**

Establishment Expenditure (TIFAC Regular)

Annexure 3

PARTICULARS	Current Year				Previous Year			
	TIFAC	PFC	WSSS	TOTAL	TIFAC	PFC	WSSS	TOTAL
a) Salaries	8,50,71,228.00	-	-	**8,50,71,228.00**	7,31,63,807.00	50,35,623.00	-	**7,81,99,430.00**
Salary - Consolidated	3,18,876.00	8,39,277.00	-	**11,58,153.00**	3,23,865.00	10,32,813.00	-	**13,56,678.00**
Salary Arrear 30% (01.04.2019 to 31.01.2020)		-	-	-	74,07,079.00	7,43,078.00	-	**81,50,157.00**
Internship Scheme	36,000.00	-	-	**36,000.00**	4,70,229.00	-	-	**4,70,229.00**
b) TIFAC Contribution to New Pension Scheme	43,07,828.00	-	-	**43,07,828.00**	55,68,998.00	-	-	**55,68,998.00**
c) Contribution to Provident Fund	46,66,267.64	-	-	**46,66,267.64**	44,47,385.76	6,81,504.00	-	**51,28,889.76**
d) Others (Specify)		-	-	-		-	-	-
Consultancy Fee (Others)	8,42,323.00	-	-	**8,42,323.00**	10,34,000.00	-	-	**10,34,000.00**
Consultancy Fee (Legal)	13,70,000.00	-	-	**13,70,000.00**	15,16,968.00	-	-	**15,16,968.00**
Consultancy Fee (Estt.)	16,20,000.00	-	-	**16,20,000.00**	13,26,667.00	-	-	**13,26,667.00**
Hospitalsation Expenses	11,13,490.00	-	-	**11,13,490.00**	2,78,423.00	-	-	**2,78,423.00**
Medical Expenses	9,34,295.00	-	-	**9,34,295.00**	11,14,297.00	22,141.00	-	**11,36,438.00**
Leave Travel Concession	6,71,029.00	-	-	**6,71,029.00**	6,49,244.00	-	-	**6,49,244.00**
Gratuity	21,78,900.00	-	-	**21,78,900.00**	88,20,822.00	-	-	**88,20,822.00**
Leave Encashment (TIFAC Employees)	33,78,281.00	-	-	**33,78,281.00**	3,37,860.00	-	-	**3,37,860.00**
Encashment of Leave (TIFAC Employees)	5,97,314.00	-	-	**5,97,314.00**	1,19,02,605.00	-	-	**1,19,02,605.00**
Tution Fee/Children Education Allowance	12,20,416.00	-	-	**12,20,416.00**	12,76,465.00	54,000.00	-	**13,30,465.00**
Incentive for Higher Qualification	-	-	-	-	80,000.00	-	-	**80,000.00**
Scholorship for Women Scienstist (11th Batch)	-	-	1,36,17,091.00	**1,36,17,091.00**	-	-	-	-
Salary of Staff Training Coordinator	-	-	-	-	-	-	12,89,376.00	**12,89,376.00**
Salary of Accounts Assistant	-	-	2,93,885.00	**2,93,885.00**	-	-	3,12,180.00	**3,12,180.00**
Salary of Data Entery Operator	-	-	3,49,255.00	**3,49,255.00**	-	-	3,12,180.00	**3,12,180.00**
Salary of Training Assistant	-	-	3,21,570.00	**3,21,570.00**	-	-	3,12,180.00	**3,12,180.00**
Salary of Training Coordinator	-	-	7,01,606.00	**7,01,606.00**	-	-	6,81,120.00	**6,81,120.00**
Total	**10,83,26,247.64**	**8,39,277.00**	**1,52,83,407.00**	**12,44,48,931.64**	**11,97,18,714.76**	**75,69,159.00**	**29,07,036.00**	**13,01,94,909.76**

Administrative Expenses (TIFAC Regular)

Annexure 4

PARTICULARS	Current Year				Previous Year			
	TIFAC	PFC	WSSS	TOTAL	TIFAC	PFC	WSSS	TOTAL
Repair and Maintenance	11,56,644.00	-	-	**11,56,644.00**	14,93,222.00			**14,93,222.00**
Rent, Rates and Taxes	-	-	-	**-**				**-**
Car hire Charges	6,45,998.00	2,872.00		**6,48,870.00**	6,25,492.00	1,03,815.00	14,503.00	**7,43,810.00**
Postage, Telephone and Communication Charges	5,25,207.00	-		**5,25,207.00**	6,81,437.00	21,771.00		**7,03,208.00**
Printing,Stationary & Printing of Publications	11,95,907.70	-		**11,95,907.70**	12,69,900.00			**12,69,900.00**
Travelling and Conveyance Expenses	37,091.00	663.00		**37,754.00**	2,11,735.00			**2,11,735.00**
Subscription Expenses	1,76,799.00	-		**1,76,799.00**	1,03,258.33			**1,03,258.33**
TIFAC Foundation Day (2020-21)	4,45,369.00	-		**4,45,369.00**				**-**
Professional Charges	1,37,758.00	-		**1,37,758.00**	1,28,805.00			**1,28,805.00**
Auditors Remuneration		-		**-**				**-**
Audit Fee	1,32,000.00	-		**1,32,000.00**	1,10,000.00			**1,10,000.00**
GST on Audit Fee & Incomet Tax Return	29,340.00	-		**29,340.00**	25,200.00			**25,200.00**
Tea/Water/Opening and Closing of Office	3,67,470.00	-		**3,67,470.00**	5,72,660.00			**5,72,660.00**
Advertisement and Publicity	1,26,442.00	-	7,08,958.00	**8,35,400.00**	15,02,698.00	2,86,297.00	45,53,852.00	**63,42,847.00**
Others (Specify)		-		**-**				**-**
Bank Charges	895.36	666.70	4,950.10	**6,512.16**	585.71	612.70	7,126.23	**8,324.64**
Misc. Office Expenses	8,10,362.60	270.00		**8,10,632.60**	5,25,633.76	4,530.00		**5,30,163.76**
Membership Fee	99,822.00	-		**99,822.00**	76,641.00			**76,641.00**
Manpower (Service Provider Agencies)	22,32,606.00	-		**22,32,606.00**	18,63,845.00			**18,63,845.00**
Card Insurance Charges	679.68	-		**679.68**				**-**
E-Office (System Administrator)	7,19,643.00	-		**7,19,643.00**				**-**
Constitution Day Celebraton	31,500.00	-		**31,500.00**				**-**
Maintenance of Vishwakarma Bhavan	63,70,000.00	-		**63,70,000.00**	63,70,000.00			**63,70,000.00**
Legal Charges	1,41,860.00	-		**1,41,860.00**	5,03,380.00			**5,03,380.00**
PM Relief Fund (M/s APL PolyFab)	-	-		**-**	15,000.00			**15,000.00**
Rajabhasha Committee Meeting	96,970.00	-		**96,970.00**	94,259.00			**94,259.00**
Swatch Bharat Mission	-	-		**-**	25,955.00			**25,955.00**
Digitilization and Scanning Service	1,10,254.00	-		**1,10,254.00**				**-**
Web Portal Service/Applications	7,27,258.00	-		**7,27,258.00**	8,32,128.00			**8,32,128.00**
Filing of Patent (Indian)	-	22,34,075.00		**22,34,075.00**		19,78,026.00		**19,78,026.00**
Filing of Patent (Abroad)	-	16,51,038.00		**16,51,038.00**				**-**
Honorarium to Experts	5,83,000.00	-	81,957.00	**6,64,957.00**	57,500.00	5,000.00	5,81,846.00	**6,44,346.00**
Housekeeping of TIFAC Building	20,78,094.00	-		**20,78,094.00**	17,33,067.00			**17,33,067.00**
Demand TDS (2019-20)	1,880.00	-		**1,880.00**				**-**
TIFAC Software Development	-	-		**-**	4,03,857.00			**4,03,857.00**
Scholorship for Women Scientist (10th Batch)	-	-		**-**			55,22,989.00	**55,22,989.00**
Scholorship for Women Scientist (11th Batch)	-	-		**-**			2,61,71,012.00	**2,61,71,012.00**
Patent Agents Exam Price (9th & 10th Batch)	-	-	80,000.00	**80,000.00**				**-**
TA/DA for attending Orientation Programme	-	-	2,51,747.00	**2,51,747.00**			2,17,132.00	**2,17,132.00**
Orientation Programme	-	-	32,800.00	**32,800.00**			10,83,216.00	**10,83,216.00**
Contingency, Refresher for Alumni	-	-	1,255.00	**1,255.00**			1,91,550.00	**1,91,550.00**
Hardware Maintenance and Software	-	-	40,224.00	**40,224.00**			2,00,000.00	**2,00,000.00**
Overhead	-	-		**-**			10,85,190.00	**10,85,190.00**
Training Programme on IPR at Meghalaya State Council	-	-		**-**		1,60,000.00		**1,60,000.00**
Total	**1,89,80,850.34**	**38,89,584.70**	**12,01,891.10**	**2,40,72,326.14**	**1,92,26,258.80**	**25,60,051.70**	**3,96,28,416.23**	**6,14,14,726.73**

Project Expenses (Tifac Regular Account)

Annexure 5

PARTICULARS	Current Year				Previous Year			
	TIFAC	PFC	WSSS	TOTAL	TIFAC	PFC	WSSS	TOTAL
(a) Follow-Up Action/Special Initiatives								-
Characterisation of the major Agro-Residue Biomass	2,65,412.00			2,65,412.00	3,49,547.00			3,49,547.00
Spatial Information System on Biomass Potential	8,29,540.00			8,29,540.00				-
Estimating Generation and Surplus Amounts of Crops				-	5,56,041.00			5,56,041.00
Shramik Shakti Manch (Saksham)	4,24,800.00			4,24,800.00				
Study on Natural Resources & Environment Security				-	3,98,500.00			3,98,500.00
Sub-Total (a)	**15,19,752.00**	-	-	**15,19,752.00**	**13,04,088.00**	-	-	**13,04,088.00**
(b) IIASA - TIFAC Projects/Study/Membership Fee				-				-
IIASA - TIFAC joint Workshop (TIFAC)	32,824.00			**32,824.00**				-
IIASA-TIFAC : Conservation of Agro-Biodiversity and Ecosystem Management : A Study in Indian Agriclimatic Condition Sub Zone				-	5,52,722.00			5,52,722.00
IIASA-TIFAC Study on Economics of Conserving Agro Biodiversity & Ecosystem Services : A Study in India				-	10,00,000.00			10,00,000.00
INDIA-IIASA Membership Fee	3,06,23,945.01			**3,06,23,945.01**				-
IIASA-TIFAC Study on Climate Smart Livelihood and	5,00,000.00			**5,00,000.00**				-
Sub-Total (b)	**3,11,56,769.01**	-	-	**3,11,56,769.01**	**15,52,722.00**	-	-	**15,52,722.00**
(c) HOME GROWN TECHNOLOGIES								
Project related expenses				-				-
Sub-Total (c)	-	-	-	-	-	-	-	-
(d) Technology Foresight for Automative Research								
Technology Foresight for Automative Research (TFAR)				-	1,07,636.00			1,07,636.00
Sub-Total (e)	-	-	-	-	**1,07,636.00**	-	-	**1,07,636.00**
(e) Technology Foresight Study in Security Technology								-
Technology Foresight study on Security Technologies				-				-
Sub-Total (f)	-	-	-	-	-	-	-	-
(f) Project Related Expenditure								
Meeting Expenditure, Meeting (Project Related), Meeting (NITI AAYOG) TIFAC, DST Review Committee Meeting	94,761.00	23,160.00		**1,17,921.00**	14,26,805.00	36,874.00		**14,63,679.00**
Travelling Expendiure, Travel Abroad, Travel Expenditure (Project Expenditure)	1,95,623.00	1,40,285.00		**3,35,908.00**	14,14,206.00	2,95,930.00		**17,10,136.00**
Workshop Expenditure, Workshop :TIFAC/DST ITS Canada), Workshop on CIPC 2016	4,25,638.00	5,04,731.00		**9,30,369.00**	6,31,859.00	47,062.00	3,77,600.00	**10,56,521.00**
Sub-Total (f)	**7,16,022.00**	**6,68,176.00**	-	**13,84,198.00**	**34,72,870.00**	**3,79,866.00**	**3,77,600.00**	**42,30,336.00**
Total (a) to (f)	**3,33,92,543.01**	**6,68,176.00**	-	**3,40,60,719.01**	**64,37,316.00**	**3,79,866.00**	**3,77,600.00**	**71,94,782.00**

SHIV TIBREWAL & Co. New Delhi Chartered Accountants

Expenditure of Vision 2020 and Vision 2035

Annexure 6

PARTICULARS	Current Year			Previous Year		
	V2020	Vision 2035	TOTAL	V2020	Vision 2035	TOTAL
Establihment & Administrative Expenditure						
Printing,Stationary & Printing of Publications		-	-	-	-	-
Sub Total (A)	-	-	-	-	-	-
Total (A)	-	-	-	-	-	-

Project Expenditure Of Vision 2020

Annexure 6A

PARTICULARS	Current Year			Previous Year		
	Vision 2020	Vision 2035	TOTAL	Vision 2020	Vision 2035	TOTAL
(a) Targeted Programme in Other Important Area						
MSME Expenses	1,51,011.00		**1,51,011.00**	1,32,149.00		**1,32,149.00**
MSME : Study for Rice Mill Cluster, Lakhisarai, Bihar			-	1,50,000.00		**1,50,000.00**
MSME : Study on the Brass Metal Cluster			-	7,12,800.00		**7,12,800.00**
MSME : Study for the Jhula Cluster, Kankaiyaganj, Nalanda, Bihar			-	3,06,900.00		**3,06,900.00**
MSME : Study for the Apparel Minufacturing Cluster, West Bangal			-	9,25,000.00		**9,25,000.00**
MSME : Study for the Sal/Arcanut Leaf Plate Manufacturing Cluster, Bishnupur, Bankura, West Bangal			-	8,95,000.00		**8,95,000.00**
MSME : Study for the Katkhal Sital Pati Cluster, Hailakandi, Assam			-	7,32,000.00		**7,32,000.00**
MSME : Study for the Fisheries and Food & Spices Cluster, Manipur			-	5,00,000.00		**5,00,000.00**
MSME : Study for the Chanapatana Toys Cluster, Ramnagar District, Karnataka			-	7,50,000.00		**7,50,000.00**
MSME Study for Agriculture Implement Cluster, Noorsarai, Nalanda Bihar			-	3,06,900.00		**3,06,900.00**
MSME : Internship Scheme Stakeholder Interaction Meeting			-	85,900.00		**85,900.00**
MSME : Study for the Textile & Garment Manufacturing	3,55,950.00		**3,55,950.00**	-		-
	5,06,961.00	-	**5,06,961.00**	**54,96,649.00**	-	**54,96,649.00**

SHIV TIBREWAL & CO. New Delhi Chartered Accountants

Project Expenditure Of Vision 2020

Annexure 6A

PARTICULARS	Current Year			Previous Year		
	Vision 2020	Vision 2035	TOTAL	Vision 2020	Vision 2035	TOTAL
(a) Targeted Programme in Other Important Area			-			-
Brainstroming Meeting 2035			-		36,837.00	**36,837.00**
Sub-Total (a)			-	-	36,837.00	**36,837.00**
(b) Project Related Expenditure			-			-
Travelling Expendiure, Travel Abroad, Travel Expenditure (Project Expenditure)			-			-
Sub-Total (b)			-	-	-	-
TOTAL (a) to (b)	**5,06,961.00**	-	**5,06,961.00**	**54,96,649.00**	36,837.00	**55,33,486.00**

Short Term Deposits With Banks

Annexure 7

PARTICULARS	Current Year				Previous Year			
	TIFAC	PFC	WSSS	TOTAL	TIFAC	PFC	WSSS	TOTAL
Short Term Deposits								
TIFAC	21,47,28,095.00			**21,47,28,095.00**	21,72,54,220.00			**21,72,54,220.00**
Flexi Account	10,00,000.00			**10,00,000.00**	5,00,000.00			**5,00,000.00**
Accrued Interest	44,09,847.00			**44,09,847.00**	56,17,476.00			**56,17,476.00**
Total	**22,01,37,942.00**	-	-	**22,01,37,942.00**	**22,33,71,696.00**	-	-	**22,33,71,696.00**

SHIV TIBREWAL & CO. New Delhi Chartered Accountants

Expenses Payable

Annexure 8

PARTICULARS	Current Year				Previous year			
	TIFAC	PFC	WSSS	TOTAL	TIFAC	PFC	WSSS	TOTAL
Expenses Payables Under TIFAC								
Salary Payable	52,07,341.00	-	1,42,338.00	**53,49,679.00**	55,84,266.00	84,371.00	1,36,820.00	**58,05,457.00**
Salary Arrear Payable (01.01.2016 to 30.09.2018)		-		-	52,26,549.00	5,14,640.00		**57,41,189.00**
Salary Arrear 30% Payable (01.10.2018 to 31.03.2019)		-		-	11,82,419.00	1,33,488.00		**13,15,907.00**
Salary Arrear 30% Payable (01.04.2019 to 31.01.2020)	34,01,874.00	2,44,147.00		**36,46,021.00**	74,07,079.00	7,43,078.00		**81,50,157.00**
Court Loan (Sh.Anil Kumar Rai)	8,000.00	-		**8,000.00**	-			-
Consultancy Fee	2,64,470.00	-		**2,64,470.00**	2,82,500.00			**2,82,500.00**
NPS Contribution (Employees)	3,36,693.00	-		**3,36,693.00**	3,20,653.00			**3,20,653.00**
NPS Contribution (Employers)	3,36,693.00	-		**3,36,693.00**	46,188.00			**46,188.00**
CPF Contribution (Employee)	3,42,930.00	-		**3,42,930.00**				-
CPF Contribution (Employers)	27,04,131.64	16,130.00		**27,20,261.64**	5,93,248.76	39,008.50		**6,32,257.26**
Opening Closing of TIFAC office	6,000.00	-		**6,000.00**				-
Experts Members Payable (Outsiders)(Honorarium)	8,000.00	-		**8,000.00**	1,08,000.00	34,562.00		**1,42,562.00**
GEM	5,46,949.60	-		**5,46,949.60**				-
M/s Rakesh Stamps Manuf. & Supplier		-		-	2,180.00			**2,180.00**
M/s Airtel Relationship No.10954184	11,724.00	-		**11,724.00**	25,810.00			**25,810.00**
M/s Shiv Tibrewal & Co. (Chartered Accountant)	1,11,925.00	-		**1,11,925.00**	99,000.00			**99,000.00**
M/s Ashok Travels and Tours	1,28,324.00	-		**1,28,324.00**	52,974.00	15,909.00	35,630.00	**1,04,513.00**
M/s Tej Sharma		-		-			10,000.00	**10,000.00**
M/s Kendriya Bhandar		-		-	34,356.00			**34,356.00**
M/s Vishal Taxi Services, New Delhi		-		-	63,590.00			**63,590.00**
Ms Holistic Food Centre		-		-		16,223.00		**16,223.00**
Sh Mahipal Singh Rawat		-		-		825.00		**825.00**
M/S Kanhaiya Enterprises		-		-	16,236.00			**16,236.00**
Income Tax on Audit & Return	31,000.00			**31,000.00**	31,000.00			**31,000.00**
Institute for Social & Economic Change (ISEC) Bangalore	5,00,000.00	-		**5,00,000.00**				-
M/s Sarathi Enterprises	14,145.00	-		**14,145.00**				-
M/s Oasis Telecommunications	7,572.00	-		**7,572.00**				-
M/s Brain Bridge Technical Centre LLP	1,61,719.00	-		**1,61,719.00**				-
M/s Medeor Hospital Ltd	-	-		-				-
M/s Malik Water Supply	11,447.00	-		**11,447.00**				-
M/s Creative Arts Sudio	39,843.00	-		**39,843.00**				-
M/s Kaushal Gram Rural Services Pvt Ltd.	1,03,246.00	-		**1,03,246.00**				-
M/s Sensys Technologies Pvt. Ltd.	2,09,950.00	-		**2,09,950.00**				-
M/s Bhavan Prakashan	22,316.00	-		**22,316.00**				-
GST on Audit Fee	27,360.00	-		**27,360.00**	25,380.00			**25,380.00**
M/s Director, New Delhi HPO, Delhi	-	-		-	891.00			**891.00**
M/s Uneecops Technologies Limited, New Delhi	1,858.00	-		**1,858.00**				-
M/s Satpal Printers and Designer	-	-	369.00	**369.00**				-
Indian National Science Academy	-	-		-			5,000.00	**5,000.00**
MTNI.	-	-		-	3,304.00			**3,304.00**
M/s Blue Star Limited	-	-		-	2,80,250.00			**2,80,250.00**
Sh. Yahswant Dev Panwar	-	-		-			820.00	**820.00**
Ms Sangeeta Nagar	-	1,260.00		**1,260.00**				-
M/s Perfect Traders	41,589.00	-		**41,589.00**	34,693.00			**34,693.00**
M/s Anand & Anand	-	-		-		36,000.00		**36,000.00**
M/s Subramaniam & Associates	-	-		-		52,340.00		**52,340.00**
M/s Khurana & Khurana	-	-		-		22,700.00		**22,700.00**
M/s Goverdhan Tourist Travel Service	-	-		-	1,23,482.00	4,286.00	2,884.00	**1,30,652.00**
Scholarship for Women Scientists	-	-	1,05,978.00	**1,05,978.00**			68,12,507.00	**68,12,507.00**
TIFAC (Overhead Charges) Payable	-	-	8,29,950.00	**8,29,950.00**			8,29,950.00	**8,29,950.00**
M/s Uma Dev & Sons	2,82,381.00	-		**2,82,381.00**				-
Sub Total (A)	**1,48,69,481.24**	**2,61,537.00**	**10,78,635.00**	**1,62,09,653.24**	**2,15,44,048.76**	**16,97,430.50**	**78,33,611.00**	**3,10,75,090.26**
TDS Payable	15,47,761.00	67,823.00	1,046.00	**16,16,630.00**	**11,30,171.00**	9,147.00	3,282.00	**11,42,600.00**
Sub Total (B)	**15,47,761.00**	**67,823.00**	**1,046.00**	**16,16,630.00**	**11,30,171.00**	**9,147.00**	**3,282.00**	**11,42,600.00**
Total A+B	**1,64,17,242.24**	**3,29,360.00**	**10,79,681.00**	**1,78,26,283.24**	**2,26,74,219.76**	**17,06,577.50**	**78,36,893.00**	**3,22,17,690.26**

SHIV TIBREWAL & CO. * Chartered Accountants * New Delhi

Earnest Money from Sugar Factories

Annexure 9

PARTICULARS	Current Year				Previous Year			
	TIFAC	PFC	WSSS	TOTAL	TIFAC	PFC	WSSS	TOTAL
Earnest Money held from Sugar Factories								
Earnest Money: Sakthi Sugars Ltd	1,00,000.00			**1,00,000.00**	1,00,000.00			**1,00,000.00**
Earnest Money : Simbhaoli Sugar	3,00,000.00			**3,00,000.00**	3,00,000.00			**3,00,000.00**
Sub Total (A)	**4,00,000.00**	-	-	**4,00,000.00**	**4,00,000.00**	-	-	**4,00,000.00**
Earnest Money from Parties								
M/s Nimbus Harbour Pvt Ltd.	20,000.00			**20,000.00**	20,000.00			**20,000.00**
M/s Bhagwati International	-			-	1,00,000.00			**1,00,000.00**
M/s Perfect Traders	5,000.00			**5,000.00**	5,000.00			**5,000.00**
M/s Omnitech Automations Pvt Ltd	5,000.00			**5,000.00**	5,000.00			**5,000.00**
M/s Dip Tecnologies Pvt. Ltd.	5,000.00			**5,000.00**	5,000.00			**5,000.00**
M/s Asha Enterprises Pvt. Ltd.	50,000.00			**50,000.00**	50,000.00			**50,000.00**
M/s AFE Consultants Pvt. Ltd.	-			-	10,000.00			**10,000.00**
M/s Beltek Canadian Water Ltd. (Aqaufina)	5,000.00			**5,000.00**	5,000.00			**5,000.00**
M/s Uma Devi & Sons	-			-	50,000.00			**50,000.00**
M/s Pan Tech, New Delhi	-			-	20,000.00			**20,000.00**
Security Deposite : M/s Pink House Keeping	18,784.00			**18,784.00**	18,784.00			**18,784.00**
Security Deposite : M/s Prime Systme Technologies	25,000.00			**25,000.00**				-
Security Deposit : M/s Softline Studio Services		23,010.00		**23,010.00**				
M/s NSE IT	-			-			50,000.00	**50,000.00**
Sum Total (B)	1,33,784.00	23,010.00	-	**1,56,794.00**	2,88,784.00	-	50,000.00	**3,38,784.00**
TOTAL A + B	**5,33,784.00**	**23,010.00**	-	**5,56,794.00**	**6,88,784.00**	-	**50,000.00**	**7,38,784.00**

SHIV TIBREWAL & CO. * Chartered Accountants * New Delhi

External Projects Handled by TIFAC

PARTICULARS	Current Year									Previous Year								
	GTWG	ICPS	TNA	MSW	DIPP	NM-QTA	SSR	ECB	AGIGMPWS	GTWG	ICPS	TNA	MSW	DIPP	DST FICCI	NM-QTA	SSR	ECB	AGIGMPWS
Opening Balance from Previous Year	20,18,218.00	11,54,094.00	12,98,371.70	2,75,000.00	6,09,478.00	5,00,000.00	(2,07,000.00)	-	13,41,524.00	20,56,432.00	12,60,904.00	3,86,255.70	2,75,000.00	6,09,478.00	-	-	-	-	14,33,300.00
Income Received during the Year																			
Grant Received from Ministries						20,00,000.00		3,65,600.00				9,89,215.00				20,00,000.00	35,00,000.00	-	
Refund from CSIR-CGCRI							96,764.28												
Sub Total	20,18,218.00	11,54,094.00	12,98,371.70	2,75,000.00	6,09,478.00	25,00,000.00	(1,10,235.72)	3,65,600.00	13,41,524.00	20,56,432.00	12,60,904.00	13,75,470.70	2,75,000.00	6,09,478.00	-	20,00,000.00	35,00,000.00	-	14,33,300.00
Expenditure Incurred																			
Head (Recurring)																			
Research Associates/Manpower/Consultancy		10,53,309.00				6,35,376.00			7,68,728.00		1,06,810.00	75,000.00							59,931.00
DPR Steering Committee Meeting						5,88,353.00										15,00,000.00			
Consultative Meeting/Workshops																	17,81,260.00		
TA/DA Expenses of Steering Committee Members (6-7 experts, there to four meeting in three months																	5,75,685.00		
Honorarium for the Advisory Committee (18-20) and Steering Committee Members @4000/- per sitting per member except TIFAC officials																	2,32,000.00		
Printing of DPR						1,81,104.00				38,214.00									
Travelling						18,367.00													17,166.00
Recurring																			
Contingency							4,765.00					2,099.00					86,852.00		6,336.00
Meeting expenses of Advisory and Steering Committee Members (Local Transport, Boarding Loadging, Working Lunch etc)																	7,07,039.00		
Consumables																			
Sitting Fee																			
Regional Workshop																			
Web Portal Developesent																			
Multi Function Printer																			
Overhead						3,19,365.00			54,073.00								3,24,164.00		8,343.00
Amount Refunded back to the institute				2,75,000.00															
Sub Total	-	10,53,309.00	-	2,75,000.00	-	17,42,565.00	4,765.00	-	8,22,801.00	38,214.00	1,06,810.00	77,099.00	-	-	-	15,00,000.00	37,07,000.00	-	91,776.00
Total	20,18,218.00	1,00,785.00	12,98,371.70	-	6,09,478.00	7,57,435.00	(1,15,000.72)	3,65,600.00	5,18,723.00	20,18,218.00	11,54,094.00	12,98,371.70	2,75,000.00	6,09,478.00	-	5,00,000.00	(2,07,000.00)	-	13,41,524.00

SHIV TIBREWAL & CO. New Delhi Chartered Accountants

Technology Information, Forecasting & Assessment Council
Receipts & Payments for the Period the Year Ended 31.03.2021

	Receipts	Current Year	Previous Year
1	**Opening Balances**		
	Cash in hand	79,048.00	8,720.00
	Cash in Hand (Under PFC New Account)	3,293.00	5,804.00
	Cash in Hand (Under WSSS New Account)	12,367.00	5,849.00
	Bank balances		
	In Current Accounts		
	In Depost Accounts	22,28,71,696.00	27,30,19,817.00
	Short Term Deposite (Flexi Deposit Account)	5,00,000.00	20,00,000.00
	Savings Accounts	14,14,16,592.10	10,37,60,963.98
	Savings Accounts (Under PFC New Account)	1,63,697.45	93,32,235.15
	Savings Accounts (Under WSSS New Account)	76,31,100.64	1,97,699.87
	Advance for Franking Machine	-	10,359.00
2	**Grants Received**		
	From Government of India - Plan (TIFAC)	21,01,00,000.00	16,04,96,000.00
	From Government of India - Non Plan (TIFAC)		-
3	**Interest Received**		
	On Bank Deposits (TIFAC)	-	-
	On Bank Savings (TIFAC)	-	-
	Loans Advances etc. (Staff advances)	-	-
	Interest from Income Tax/ Projects	-	-
	Interest on Debtors & other Receivable (TIFAC-SIDBI Revolving Fund)	-	-
4	**Other Income (Specify)**		
	Refund from HGT Project	8,00,000.00	19,60,500.00
	Refund from Advance Composite Programme	1,50,000.00	6,00,000.00
	Refund from Sugar Technology Mission	-	7,50,000.00
	Other Income (Schedule 18)	24,72,082.00	39,03,663.00
	Refund from Fly Ash Utilization Programme	-	-
5	**Receipts fro Patent Facilitating Centre**		
	Grant in Aid (Under PFC New Account)	2,00,00,000.00	-
	Other Receipts	-	25,000.00
	Interest from Bank (Savings) (Under PFC New Account)	-	-
6	**Receipts for Women Scientist Scholourship Scheme**		
	Grant in Aid (Under WSSS New Account)	2,45,70,446.00	4,50,00,000.00
	Other Income	11,86,697.52	21,246.00
	Interest from Bank (Savings) (Under WSSS New Account)	-	-
7	**Other Receits (Give Details)**		
	Nominal Charges for Dissemination of TIFAC Reports	2,000.00	-
	Income from Royalty	-	10,350.00
	RTIA Questions	200.00	1,400.00
		63,19,59,219.71	60,11,09,607.00

SHIV TIBREWAL & CO. New Delhi Chartered Accountants

Technology Information, Forecasting & Assessment Council
Receipts & Payments for the Period the Year Ended 31.03.2021

Receipts	Current Year	Previous Year
National Steerign Committee on Tech Need Assessment (TNA) for Habitat Sector (MOEF&CC)	-	9,89,215.00
Grant : Detail project report for Natinal Mission on Quantum Technology & Application (NM-QTA)	20,00,000.00	20,00,000.00
Grant : Experts Committee on Bibloomatrics (ECB)	3,65,600.00	-
Grant : Scientific Social Responsibility (SSR) Policy	91,999.28	35,00,000.00
International Womens Day KIRAN-IPR	4,50,000.00	-
Retment Benifit (Prof. Prabat Ranjan)	-	4,04,679.00
Bharat Kosh (Govt.) (TIFAC,PFC & WSSS)	2,08,91,645.00	2,52,57,000.00
Amount to be received from PFC to TIFAC	-	25,52,772.00
CPF Trust (TIFAC)	-	1,86,329.50
GSLIS	850.00	-
GPF	-	17,000.00
Staff Loan	1,28,526.00	-
EMD/Security Deposit (TIFAC) of (Annexure - 9)		1,00,000.00
Womens Day & Certificate Distribution Ceremony & International Womens Day (10th Batch)	2,92,576.00	-
Medical Scheme	500.00	-
IIT-TIFAC Maintenance (Provision)	63,70,000.00	63,70,000.00
Advance DAVP	1,51,562.00	30,85,822.00
Advance : Chennai Centre Kiran IPR	-	1,45,000.00
Advance : Pune Centre Kiran IPR	-	2,00,000.00
Security Deposit	-	800.00
Prof. Prabath Ranjan Recovery (Transport)	-	4,28,510.00
Salary Recoverable (Dr Aruna)	-	10,875.00
Interest Accrued from Union Bank of India (Savings Bank)	13,86,530.00	13,56,366.00
Superannuation / Pension/ Gratuity (Provision)	17,48,631.00	72,44,729.00
Accumlated Leave Encashment	30,09,922.00	99,40,568.00
Total (ii)	3,68,88,341.28	6,37,89,665.50
	66,88,47,560.99	66,48,99,272.50

SHIV TIBREWAL & CO
New Delhi
Chartered Accountants

Technology Information, Forecasting & Assessment Council
Receipts & Payments for the Period the Year Ended 31.03.2021

	Particulars	Current Year		Previous Year	
1	**Expenses**				
a	**Establishment Expenses (Schedule 21)**	**10,83,26,247.64**		**11,97,18,714.76**	
	Add : Opening Expenses Payable	1,94,00,313.00		2,37,09,936.00	
	Less : Expenses Payable	**86,09,215.00**	**11,91,17,345.64**	1,94,00,313.00	12,40,28,337.76
b	**Administrative Expenses (Schedule 21)**	**1,89,80,850.34**		**1,92,26,258.80**	
	Add : Opening Expenses Payable	32,73,906.76		37,36,068.15	
	Add : Loss of sale of Fixed Assets	-		-	
	Less : Payables	78,08,027.24	**1,44,46,729.86**	32,73,906.76	1,96,88,420.19
	Less : Loss on Sale of Fixed Assets				
	(Previous year figure does not include obsolescence Expenses in it.)				
c	**Expensditure on Grants, Subsidies etc. (As per Schedule 22)**		**3,33,92,543.01**		**64,37,316.00**
2	**Payments made against funds for various projects**				
	Establishment Expenses (Under PFC New Account)	**8,39,277.00**		**75,69,159.00**	
	Add : Opening Expenses Payable	14,75,577.00		21,97,957.00	
	Less : Expenses Payable	2,44,147.00	**20,70,707.00**	14,75,577.00	82,91,539.00
	Administravtive Expenses (Under PFC New Account)	**45,57,760.70**		**29,39,917.70**	
	Add : Opening Expenses Payable	2,31,000.50		4,88,396.00	
	Less : Expenses Payable	85,213.00	**47,03,548.20**	2,31,000.50	31,97,313.20
	Payments made against funds for various projects				
	Establishment Expenses (Under WSSS New Account)	**1,52,83,407.00**		**29,07,036.00**	
	Add : Opening Expenses Payable	1,36,820.00		1,24,280.00	
	Less : Expenses Payable	1,42,338.00	**1,52,77,889.00**	1,36,820.00	28,94,496.00
	Administravtive Expenses (Under WSSS New Account)	**12,01,891.10**		**4,00,06,016.23**	
	Add : Opening Expenses Payable	77,00,073.00		44,55,748.00	
	Less : Expenses Payable	9,37,343.00	**79,64,621.10**	77,00,073.00	3,67,61,691.23
	Grant Utilisation - Vision 2020	**5,06,961.00**		**54,96,649.00**	
	Add : Opening Expenses Payable	-		-	
	Less : Expenses Payable	-	**5,06,961.00**	-	**54,96,649.00**
	Grant Utilisation - Technology Vision 2035		-		**36,837.00**
	Adddition in Fixed Assets				
	Office Equipment		8,25,059.00		3,53,203.00
	Library Book		94,565.00		2,34,517.05
	Furniture & Fixtures		59,983.00		9,000.00
	Computer & Peripherals		71,58,482.82		21,334.95
	Interior Work of TIFAC Building		20,060.00		2,44,224.00
	Fire Alarm System at TIFAC Building & Fire Extinguishers		74,005.00		1,92,255.00
	Computer & Paripherials (Ext. Project)		2,63,670.00		6,780.00
	TIFAC Software Development		3,24,500.00		-
	E-office		1,00,65,802.00		-
	TIFAC Software Development (PFC)		41,300.00		-
3	**Other Payments (Specify)**				
	Earnest Money /Security Deposit		-		1,05,000.00
	Stale Cheques (TIFAC,PFC & WSSS)		-		2,05,846.00
	CGHS(Sh Rajani Kanth Gupta) Ex.Registrar		**2,550.00**		-
	Sundry Creditor : Alaka Chakraborty		46,648.00		-
			21,64,56,969.63		20,82,04,759.38

SHIV TIBREWAL & CO. New Delhi Chartered Accountants

Technology Information, Forecasting & Assessment Council
Receipts & Payments for the Period the Year Ended 31.03.2021

Particulars	Current Year	Previous Year
Global Tecnlology Watch Group	-	38,214.00
Interdisciplinary Cyber Physical System (ICPS)	10,53,309.00	1,06,810.00
National Steerign Committee on Tech Need Assessment (TNA) for Habitat Sector (MOEF&CC)	-	77,099.00
Grant : Assessment of Government of India's Gender Mainstreaming Programs for Women in Science	8,22,801.00	91,776.00
Grant : Detail project report for Natinal Mission on Quantum Technology & Application (NM-QTA)	17,42,565.00	15,00,000.00
Database of Technologies for Management of Muncipal Solid Waste	2,75,000.00	-
Grant : Scientific Social Responsibility (SSR) Policy	-	37,07,000.00
Retirement enifit (Prof. Prabat Ranjan)	4,04,679.00	-
Bharat Kosh (Govt.) (TIFAC, PFC & WSSS)	2,52,57,000.00	4,10,12,182.00
UNIDO Workshop	1,06,200.00	-
Amount to be paid by PFC to TIFAC	-	25,52,772.00
TIFAC-SIDBI Revolving Funds)	26,65,200.00	21,34,000.00
CPF Turst	2,41,290.50	-
GSLIS	-	570.00
Unspent Balance of Running Projects	3,03,139.00	2,31,010.00
EMD/Securiy Deposit TIFAC	1,81,990.00	-
Advance : India International Center	624.00	-
Advance : Special Festival Package	1,31,000.00	-
Advance : NICSI (Sparrow)	22,58,662.00	
Overhead (WSSS) Receivable	8,29,950.00	
Due to DST (Unspent Balance Amount in respect of Old Projects)	-	2,43,79,090.93
IIT-TIFAC Maintenance (Provisions)	-	63,79,785.00
Advance : CSIR Glass & Ceramic Research Institute	-	8,550.00
Womens Day & Certificate Distribution Ceremony & International Womens Day (10th Batch)	-	2,92,576.00
Staff Loan	-	1,18,754.00
Interest Accrued From Union Bank of India (Savings Bank of India)	14,17,702.00	13,86,530.00
Closing Balance		
Cash in Hand	7,265.00	79,048.00
Cash in Hand(Under PFC New Account)	1,793.00	3,293.00
Cash in Hand(Under WSSS New Account)	1,667.00	12,367.00
Cash at Bank	17,35,76,958.05	14,14,16,592.10
Cash in Bank (Under PFC New Account)	1,05,83,199.75	1,63,697.45
Cash in Bank (Under WSSS New Account)	1,03,90,655.06	76,31,100.64
Short Term Deposite	21,91,37,942.00	22,28,71,696.00
Short Term Deposite (Flexi Deposit Account)	10,00,000.00	5,00,000.00
Total (ii)	45,23,90,591.36	45,66,94,513.12
Total (i) + (ii) = (B)	66,88,47,560.99	66,48,99,272.50

SHIV TIBREWAL & CO.
Chartered Accountants
301, Rohit House, 3 Tolstoy Marg, Connaught Place, New Delhi - 110001
Ph.: 011-43723307, 43545218, Mob.: 9811118154 E-mail : stc_ca@yahoo.com

INDEPENDENT AUDITOR'S REPORT

The Trustees
TIFAC Contributory Provident Fund Trust
New Delhi

Report on theFinancial Statements

1. We have audited the accompanying financial statements of TIFAC Contributory Provident Fund Trust, New Delhi, (hereinafter referred to as `Trust') which comprise the Statement of Affairs as at March 31, 2021.

Management's Responsibility for theFinancial Statements

2. These financial statements are the responsibility of the management of TIFAC Contributory Provident Fund Trust with respect to the preparation of these financial statements that give a true and fair view of the financial position and financial performance of the Trustin accordance with the accounting principles generally accepted in India including Accounting Standards issued by the Institute of Chartered Accountants of India. This responsibility includes maintenance of adequate accounting records in accordance with the for safeguarding the assets of the Trust and for preventing and detecting frauds and other irregularities; selection and application of appropriate accounting policies; making judgments and estimates that are reasonable and prudent; design, implementation and maintenance of adequate internal financial controls, that are operating effectively for ensuring the accuracy and completeness of the accounting records, relevant to the preparation and presentation of the financial statements that give a true and fair view and are free from material misstatement, whether due to fraud or error.

Auditor's Responsibility

3. Our responsibility is to express an opinion on these financial statements based on our audit. We have taken into account the accounting and auditing standards and matters which are required to be included in the audit report under the provisions of the Act and the Rules made thereunder. We conducted our audit in accordance with the Standards on Auditing.Those Standards require that we comply with ethical requirements and plan and perform the audit to obtain reasonable assurance about whether the financial statements are free from material misstatement.

4. An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditor's judgment, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditor

SHIV TIBREWAL & CO. New Delhi Chartered Accountants

considers internal financial control relevant to the Trust's preparation of the financial statements, that give a true and fair view, in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on whether the Society has in place an adequate internal financial controls system over financial reporting and the operating effectiveness of such controls. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of the accounting estimates made by the Society's management and Governing Council, as well as evaluating the overall presentation of the financial statements.

5. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

Opinion

6. In our opinion and to the best of our information and according to the explanations given to us, the aforesaid financial statements give the information required by the Act in the manner so required and give a true and fair view in conformity with the accounting principles generally accepted in India of the state of affairs of the Trust as at 31st March 2021 however subject to the following:

The Funds of the Trust should be invested as per the Investment Pattern laid in Government of India, Ministry of Finance (Department of Economic Affairs) Notification No. F.12(1)-DD/86 dated 17th March, 1986. But the above mentioned notification is not available with the Trust and the Funds are being invested into Fixed Deposits with the Nationalised Banks.

7. **We Further state that**

a) we have sought and obtained all the information and explanations which to the best of our knowledge and belief were necessary for the purpose of our audit;

b) in our opinion proper books of account as required by law have been kept by the Trust so far as appears from our examination of those books;

c) the Statement of Affairs dealt with by this Report are in agreement with the books of account;

Date: 29.07.2021
Place: New Delhi

For Shiv Tiberwal & Co.
Charted Accountants
Firm Registration No. 011391N

(S.K. Tibrewal)
Partner
M. No. 080098
UDIN: 21080098AAAAIV4595

Contributory Provident Fund of TIFAC
Statement of Affairs as on 31st March, 2021

Previous Year as on 31.03.2020	Particulars	Current Year as on 31.03.2021	Previous Year as on 31.03.2020	Particulars	Current Year as on 31.03.2021
	Employees Contribution				
3,57,65,412.00	**Opening Balance**	**4,29,94,420.00**	1,15,56,576.24	Union Bank of India S/b A/C	1,17,35,028.20
52,46,237.50	Add: Received during the year	60,56,456.00	5,20,330.00	Special deposit with RBI	5,20,330.00
30,32,116.00	Add: Interest Accrued During the Year	32,48,749.00	5,78,50,118.44	Short Term deposit with UBI including interest accrued thereon Less Bank Charges	7,07,09,248.00
4,40,43,765.50		5,22,99,625.00	6,81,834.00	Flexi Deposit- UBI	7,02,521.00
13,35,816.00	Less: Paid during the year	7,75,000.00		**Loan/ Advances to staff members**	
4,27,07,949.50		**5,15,24,625.00**	41,900.00	Shri Arghya Sardar	-
2,86,470.50	Add: Employees Subscription for the m/o March'2021	3,42,930.00	5,55,840.00	**Receivable from TIFAC account of Employer**	5,72,180.00
4,29,94,420.00	**Total (A)**	**5,18,67,555.00**		**& Employee Contribution for March.'2021**	
	TIFAC Contribution				
2,31,49,385.00	**Opening Balance**	**2,85,29,886.44**	3,17,707.76	**Receivable from TIFAC account difference in**	24,91,011.64
41,04,088.50	Add: Received during the year	38,43,107.00		**interest earned & paid by the CPF Trust**	
18,32,075.44	Add: Interest Accrued During the Year	22,60,520.40			
2,90,85,548.94		3,46,33,513.84			
8,25,032.00	Less: Paid during the year	-			
2,82,60,516.94		**3,46,33,513.84**			
2,69,369.50	Add: Employer Subscription for the m/o March'2021	2,29,250.00			
2,85,29,886.44	**Total (B)**	**3,48,62,763.84**			
7,15,24,306.44	**Total (A+B)**	**8,67,30,318.84**	**7,15,24,306.44**	**Total**	**8,67,30,318.84**

Subject to Schedule-I, forming part of the Balance Sheet.

As per our report of even date attached herewith.

For Shiv Tibrewal & Co.
Chartered Accountants
FRN : 011391N

Shiv Kumar Tibrewal
Partner
Membership No.080098

SHIV TIBREWAL & CO. Chartered Accountants New Delhi

Date : 29/07/2021

Place : New Delhi

Mukesh Mathur
Chairman
मुकेश माथुर / MUKESH MATHUR
वैज्ञानिक 'एफ' एवं प्रभारी (वित्त एवं प्रशासन) / Scientist 'F & In-charge (Fin. & Admin.)
प्रौद्योगिकी सूचना, पूर्वानुमान एवं मूल्यांकन परिषद् (टाइफैक)
Technology Information, Forecasting and Assessment Council (TIFAC)
(विज्ञान एवं प्रौद्योगिकी विभाग, भारत सरकार/Deptt. of Science & Technology, Govt. of India)
नई दिल्ली–110016 / New Delhi-110016

Deep Prakash
Trustee
दीप प्रकाश / Deep Prakash
लेखा अधिकारी / Accounts Officer
प्रौद्योगिकी सूचना, पूर्वानुमान एवं मूल्यांकन परिषद् (टाइफैक)
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(विज्ञान एवं प्रौद्योगिकी विभाग, भारत सरकार/Deptt. of Science & Technology, Govt. of India)
'अ' खण्ड, विश्वकर्मा भवन, जीत सिंह मार्ग, नई दिल्ली–110016
'A' Wing, Vishwakarma Bhawan, Shaheed Jeet Singh Marg, New Delhi-16

COUTRIBUTORY PROVIDENT FUND OF TIFAC

SCHEDULE FORMING PART OF ACCOUNTS FOR THE YEAR ENDED 31.03.2021

SCHEDULE – I

SIGNIFICANT ACCOUNTING POLICIES AND NOTES ON ACCOUNTS

1. The financial statements are prepared under the historical cost convention on going concern basis. The Trust follows the mercantile system of accounting except interest received on special deposit with Reserve Bank of India (RBI) thru Union Bank of India (UBI) on calendar year basis & hence accounted for on receipt basis.

2. The Trust follows the Rule as notified by Government of India, Ministry of Finance, Department of Expenditure under sub section (2) of section 8 of the Provident Funds Act, 1925 (19 or 1925), vide their notification no. 4(1)-EV/92 (II) dated 10th August, 1993 and have also added to the schedule to the said Act the name of Technology information, Forecasting and Assessment Council (TIFAC) under sub section (3) of Section 8 of the said Act, Vide Act, vide notification no. 4(1)-EV/92(I) dated 10th August, 1993.

3. CPF Trust Account collects money from the staff of TIFAC as well as from TIFAC and invests this amount in Fixed Deposits of Nationalized Banks on which interest in earned as per the prevailing bank rates. Similarly the trust provides interest to the staff at the rates prescribed in CPF Act from time to time. Till 31.03.2021 there was a deficit of Rs. 24,91,011.64 with the CPF which has been shown as recoverable from TIFAC.

4. Previous year's figures have been regrouped/rearranged wherever found necessary to make them comparable with current year figures.

As per our report of even date attached herewith

For Shiv Tibrewal & Co.
Chartered Accountants
FRN: 011391N

SHIV TIBREWAL & CO. New Delhi Chartered Accountants

CA. S. K. Tibrewal
(Partner)
MRN: 080098

Date: 29/07/2021

Place: New Delhi

Accounts Officer
TIFAC

दीप प्रकाश Deep Prakash
लेखा अधिकारी / Accounts Officer
प्रौद्योगिकी सूचना, पूर्वानुमान एवं मूल्यांकन परिषद् (टाइफैक)
Technology Information, Forecasting and Assessment Council (TIFAC)
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'अ' खण्ड, विश्वकर्मा भवन, जीत सिंह मार्ग, नई दिल्ली–110016
'A' Wing, Vishwakarma Bhawan, Shaheed Jeet Singh Marg, New Delhi-16

Incharge(Fin.&Admin.)
TIFAC

मुकेश माथुर / MUKESH MATHUR
वैज्ञानिक 'एफ' एव प्रभारी (वित्त एवं प्रशासन) / Scientist 'F & In-charge (Fin. & Admin.)
प्रौद्योगिकी सूचना, पूर्वानुमान एवं मूल्यांकन परिषद् (टाइफैक)
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नई दिल्ली–110016 / New Delhi-110016

TECHNOLOGY INFORMATION, FORECASTING AND ASSESSMENT COUNCIL

5th Floor, AI Block, Technology Bhavan, New Mehrauli Road, New Delhi-110 016
www.tifac.org.in