DST-CENTRE FOR POLICY RESEARCH
PANJAB UNIVERSITY CHANDIGARH

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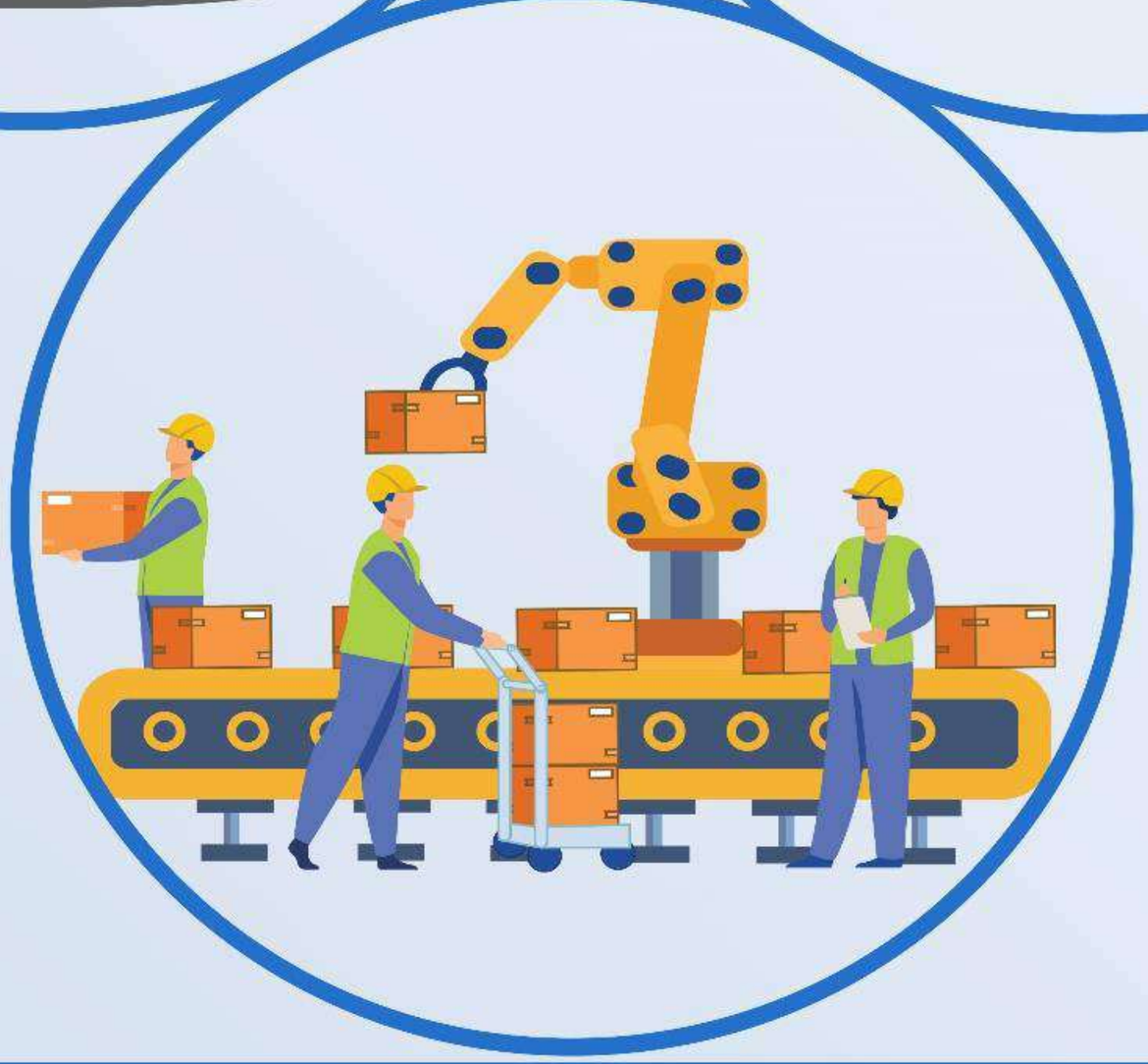

ACTIVITY BOOKLET 2021-2022

Aruna Ranjit Chandra Hall, Sector 14, Panjab University, Chandigarh 160014
http://cpr.puchd.ac.in/

INDEX

Prof. Raj Kumar
Vice Chancellor
Panjab University
Chandigarh 160014

MESSAGE

Instituting the Centres for Policy Research (CPR) in eminent higher education institutes/universities by the Department of Science and Technology (DST), Government of India (GoI) has been one of the much required and highly appreciated initiatives. It represented the vision of a strong policy system which is a crucial aspect with a huge effect on the governing system of a nation. I am aware that the DST-CPR at Panjab University, Chandigarh is one of the five centres that was established in the year 2014. Since then it has been working with commitment towards the promotion of Industry-Academia (I-A) interactions and enhancing the Intellectual Property (IP) ecosystem in India. The Centre is engaged in various activities, especially in presenting evidence based recommendations to enhance the I-A ecosystem at national and regional levels.

The Centre has carried out several studies on public-private partnerships, I-A collaborations, private sector incentivisation in the R&D and IP ecosystem in universities and higher education institutes of India. The Centre during its journey of the past seven years has drawn evidence-based recommendations which have been submitted to the GoI for further deliberations. I congratulate the Centre for doing the crucial studies and contributing to the mission of national importance. I am also aware that the Centre is working in tandem with DST, GoI towards the formulation of the new Science, Technology and Innovation Policy. My best wishes to the Centre and good luck for the future endeavours.

(Raj Kumar)

Dr. Akhilesh Gupta

FNAE, FIMS
Senior Adviser,
Head, STIP-2020 Secretariat & Head
PCPM Division, DST, GoI. , New Delhi

MESSAGE

Science, Technology and Innovation (STI) plays a critical role in socio-economic and technological progression of the country. The past S&T policies of India since independence laid down the trajectory for S&T based technological advancements to address the country's socio-economic needs. India has launched its 5th National Science, Technology and Innovation Policy (STIP) draft that addresses the renewed focus on making India self-reliant in line with the national clarion call of ‘Atma Nirbhar Bharat’. The new policy revolves around the core principles of being decentralized, evidence-informed, bottom-up, experts-driven, and inclusive approach. Additionally, it aims to bring in the concept of dynamic policy with a robust policy governance mechanism incorporating features like implementation strategy, evaluation, and most importantly, a timely exit strategy for various policy instruments.

The Centres for Policy Research (CPR) were set up in 2014 in various parts of India with an aim to generate evidence based STI policy research in the country. The DST-CPR at Panjab University (PU), Chandigarh was established with a mandate to strengthen the Industry-Academia R&D ecosystem in the country. The Centre has come up with many impactful policy recommendations on key issues related to ‘Public Private Partnerships for R&D’, ‘Incentivisation of Private Sector’s R&D’ and ‘Intellectual Property Ecosystem in the Country’. The Centre’s effort in comparative analysis of the national and international models and initiatives for PPP for R&D and private sector’s stimulation for STI are commendable. The Centre has also shown an appreciable progression in reviewing the Indian patent ecosystem and has generated eminent data regarding status of publications and patents along with the commercialization status of Intellectual Property of the academic and research institutes in the country.

My best wishes to ‘DST-CPR at PU, Chandigarh’ to successfully empower Industry-Academia interactions in the country and lay down policy directives for strengthening Intellectual Property Regime in the country. I wish that the Centre emerges as a nodal point of contact for STI policy advisory and advocacy for the Northern region of India in alignment with the national priorities and regional needs.

(Dr. Akhilesh Gupta)

DST-CENTRE FOR POLICY RESEARCH
PANJAB UNIVERSITY CHANDIGARH

Prof. M.M. Gupta
Co-Coordinator
DST-Centre for Policy Research
Panjab University, Chandigarh

MESSAGE

In our national aspiration for rapid economical growth, Science and Technology based innovations can play a crucial role in the development of the knowledge based economy. In case India wants to play dominant role in the coming decade at the world stage, we have to create the right ecosystem for S&T based innovations to flourish. In this context, the availability of appropriate policy framework can play a catalytic role in pushing the innovations and knowledge creation towards higher growth trajectory for the country. Fortunately, DST, in 2014 created five Centres of Policy Research and one of these is housed at Panjab University (PU), Chandigarh. This Centre at PU is supposed to be looking after industry-academia interactions besides concentrating on IP regime. These missions are very much in sync with the mandate of the Chandigarh Region Innovation and Knowledge Cluster (CRIKC) which is also housed at PU. Ever since its existence, the Centre has carried out commendable work in formulating evidence based several policy guidelines for promoting industry-academia interactions. It has also carried out several programs for spreading awareness about intellectual property rights especially patents, which are very important in the present competitive world. The Centre has also carried out several case studies comparing the S&T ecosystems of different countries which also throw light on the most suitable policy guidelines which would be useful for our country.

The Government of India is about to release the 5th National Science, Technology and Innovation Policy (STIP) which aims to reorient the Science, Technology and Innovation ecosystem in line with national goals and aspirations. Some of the key attributes of the new STIP includes policy building through the expert-driven and evidence based approach. The DST CPR, already working actively at PU is well poised to gear itself in fulfilling the national aspirations as envisioned in the 5th national STIP Draft. I wish all the best to the Centre for fulfilling the goals set forth in its vision and in sync with the national S&T aspirations

(Prof. M.M. Gupta)

DST-CENTRE FOR POLICY RESEARCH
PANJAB UNIVERSITY CHANDIGARH

Prof. C. Nirmala
Fmr. Coordinator
DST-Centre for Policy Research
Panjab University, Chandigarh

FOREWORD

Innovation in isolation or at individual level happens at a very low pace as compared to partnerships or collaborative mode involving different stakeholders. The partnership between industry and academia is enunciated as one of the significant factors to promote innovation and growth in Science and Technology. The journey from the inception of R&D to the commercialization stage has geared up due to establishing such partnerships between industry and academia. These partnerships focusing on addressing commercial valued solutions with new forms of knowledge generated through research, contribute greatly to the knowledge-based economy of the nations. In India, it is observed that industry and academia work in tandem in various sectors thereby promoting the R&D ecosystem, however, the lack of a clear policy is preventing optimum co-operation, suggesting to identify the policy gaps.

India has come up with few research centers or institutes conducting the science policy research to identify the policy limitations and gaps. The DST-Centre for Policy Research at Panjab University, Chandigarh is one of the prominent centers, established in January, 2014 by the Department of Science and Technology, New Delhi. The Center promotes research in areas of Science, Technology and Innovation Policy emphasizing more on PPP and IPR domains. It has been working on the research areas of Industry-Academia partnership to find the ways and opportunities of promoting the R&D ecosystem in the country. The specific objectives to which Center is engaged are a) Development of a new country specific model for promotion of public private partnership for R&D b) Identify areas of policy gaps for stimulation of private sector investment in R&D and suggest changes in policy environment and c) To adopt evidence-based approaches for identifying and promoting areas for generation of intellectual properties.

This Centre is actively taking forward its objectives by undertaking a series of webinars and workshops, case studies and one to one experts interactions in the field. In future this Centre will provide more remarkable outcomes in the PPP area to address the opportunities capable of promotion of the R&D ecosystem in India.

(Prof. C. Nirmala)

DST-CENTRE FOR POLICY RESEARCH
PANJAB UNIVERSITY CHANDIGARH

Prof. Kashmir Singh
Coordinator
DST-Centre for Policy Research
Panjab University, Chandigarh

PREFACE

The prosperity of a nation is not something that can be inherited but something that has to be created. As global competition increases and shifts more towards creating and assimilating new knowledge, the competitiveness of a nation is dependent on its capability to innovate and upgrade. In the present times, the global economy is based on information and know-how. On account of the same, improving means through which novel concepts may be put to practical applications has been realized as a subject of precedence and therefore demands commitment. Thus, Science, Technology and Innovation (STI) are the indispensable elements for employment generation and economic progression of a country. Countries that have adopted and promoted STI have experienced a revolution in their economic and social framework. STI rests upon Academia (Universities, Higher Education Institutes and Public Research Laboratories) and Industry, as its two steady pillars, each of which has a crucial developmental role. Continuously evolving businesses, infrastructure along with strong partnerships are additional factors that carve out innovative activity.

The DST sponsored, Centre for Policy Research, at Panjab University, Chandigarh, has played a crucial role in providing evidence-based recommendations that were implemented on a national level and some of the recommendations are also addressed in the Science, Technology and Innovation Policy Draft, 2020. These recommendations along with explicit data on evidence have been submitted to DST and published in the form of Books, Reports and Research Papers.

This ‘Activity Booklet – 2022’ presents, at glance, the activities and endeavours undertaken by the Centre in the preceding year. Studies undertaken within the scope of Objectives have been bolstered through a series of webinars, workshops, case studies and one on one interactions with experts in the field. Hereafter, the Centre wishes to undertake studies that will help in addressing policy related gaps and provide recommendations to the policymakers. Through dedicated efforts, we wish to transform the Centre into a sustainable institutional and training centre for S&T and IP policy research skill building and training in the Northern part of India.

Kashmir Singh

(Prof. Kashmir Singh)

ADVISORY COMMITTEE

01	**Dr. Akhilesh Gupta**	FNAE, FIMS, Senior Adviser; Head, STIP-2020 Secretariat & Head, PCPM Division, DST, GoI., New Delhi
02	**Prof. Raj Kumar**	Vice Chancellor Panjab University, Chandigarh
03	**Dr. Hiro Bhojwani**	Former Head, Research Planning & Business Development, CSIR, New Delhi
04	**Prof. Rakesh Basant**	Department of Economics, Indian Institute of Management (IIM), Ahmedabad
05	**Dr. Ranjana Aggarwal**	Director, CSIR-National Institute of Science Communication and Policy Research (CSIR-NIScPR), New Delhi
06	**Prof. Anuradda Ganesh**	Director, Research & Innovation at Cummins Technologies (I) Ltd., Mumbai
07	**Dr. Jatinder K. Arora**	Executive Director, Punjab State Council for Science and Technology (PSCST), Chandigarh
08	**Dr. Yashawant Dev Panwar**	Head, Patent Facilitation Centre (PFC), Technology Information, Forecasting and Assessment Council (TIFAC), New Delhi
09	**Mr. Jibak Dasgupta**	Head, Innovation, Entrepreneurship and IPR Activities, Confederation of Indian Industry (CII), New Delhi
10	**Prof. S.S. Banga**	Honorary Adjunct Professor, Punjab Agricultural University (PAU), Ludhiana, Punjab
11	**Prof. Kashmir Singh**	Coordinator, DST-Centre for Policy Research Panjab University, Chandigarh

ABOUT THE CENTRE

Department of Science and Technology-
Centre for Policy Research
at
Panjab University, Chandigarh
(Grant No. DST/PRC/CPR-03/2013)

Aruna Ranjit Chandra Hall, Sector 14,
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The Government of India launched a program called Science, Research and Innovation System for High Technology-led path for India (SRISHTI) – as one of the main goals of the Science, Technology and Innovation (STI) Policy-2013 – which focuses on inclusive STI growth. This comes as a forwarding initiative after the declaration of 2010-20 as the 'Decade of Innovations' in October 2010 by the then Prime Minister Dr. Manmohan Singh. As a part of SRISHTI, 5 Centres for Policy Research were established by Department of Science and Technology (DST), in January 2014 in various higher education institutions in India. To give an impetus to develop strong Industry-Academia interactions, and promote the Intellectual Property (IP) ecosystem in India, Govt. of India through the DST, New Delhi, set up a DST-Centre for Policy Research (CPR) at Panjab University, Chandigarh. This Centre is expected to conduct research on S&T and IP policies, hold meetings, seminars, brainstorming sessions with Academia and Private sectors to work on certain objectives mandated to the CPR.

Vision

Strengthening Industry-Academia R&D Ecosystem in India

OBJECTIVES

01

Development of a new country specific model for promotion of PPP for R&D.

02

Identify areas of policy gaps for stimulation of private sector investment in R&D and suggest changes in policy environment.

03

Adopt evidence-based approaches for identifying and promoting areas for generation of intellectual properties.

STUDIES CONDUCTED AND MAJOR INPUTS

EVIDENCE BASED STUDIES:

01 **Suggestive Roadmap for Strengthening R&D Ecosystem through PPP.**

02 **Mapping Patents and Research Publications of Higher Education Institutes and National R&D Laboratories of India.**

03 **Patents Commercialization Ecosystem in Higher Education Institutes and National Research Laboratories of India.**

04 **Reviving the Weighted Tax Deduction Scheme for Department of Scientific and Industrial Research (DSIR), recognized industries performing R&D; addressed in STIP 2020 Draft.**

05 **Roadmap for the Development of Bamboo Sector in the area of 'Food and Pharmaceuticals' has been submitted to the Ministry of Development of North Eastern Region (MDoNER), Govt. of India. The end users of this project are NITI Aayog and the Prime Minister's Office.**

06 **Formulation of outlines for starting vocational courses in Bamboo in line with the National Policy for Skill Development and Entrepreneurship.**

07 **DST-CPR at PU, Chd. prepared a report on 'University-Industry Linkage Programme' in consultation with UGC Working Committee.**

OTHER INPUTS:

DST-CPR at PU, Chandigarh has played an important role in providing evidence based recommendations some of which are addressed in the STIP 2020 Draft.

01 **Since its inception, the Centre has been reiterating the need to broaden the scope of CSR funds for R&D activities. Ministry of Commerce and Industry (MoCI), has recently declared R&D investments by the private sector as an activity under CSR funds.**

02 **The Centre had suggested positioning of 'Moderators' between Industry and Academia, which has now taken the form of Technology Enabling Centres, a DST initiative to act as a facilitator for commercialization of technologies arising from universities.**

03 **The Centre had advocated the formation of Knowledge Clusters on the lines of Chandigarh Region Innovation and Knowledge Cluster (CRIKC). The Office of PSA has recently initiated the creation of 'City Clusters'.**

04 **The recommendations on streamlining the patent filing process, promoting patents commercialization and sensitizing young minds about IP issues has been included in the STIP Draft.**

05 **CPR had suggested the creation of dedicated cells in courts to resolve IPR related issues. In April 2021, Delhi High Court has created a separate Intellectual Property Division (IPD) to deal with IPR matters.**

ACTIVITIES

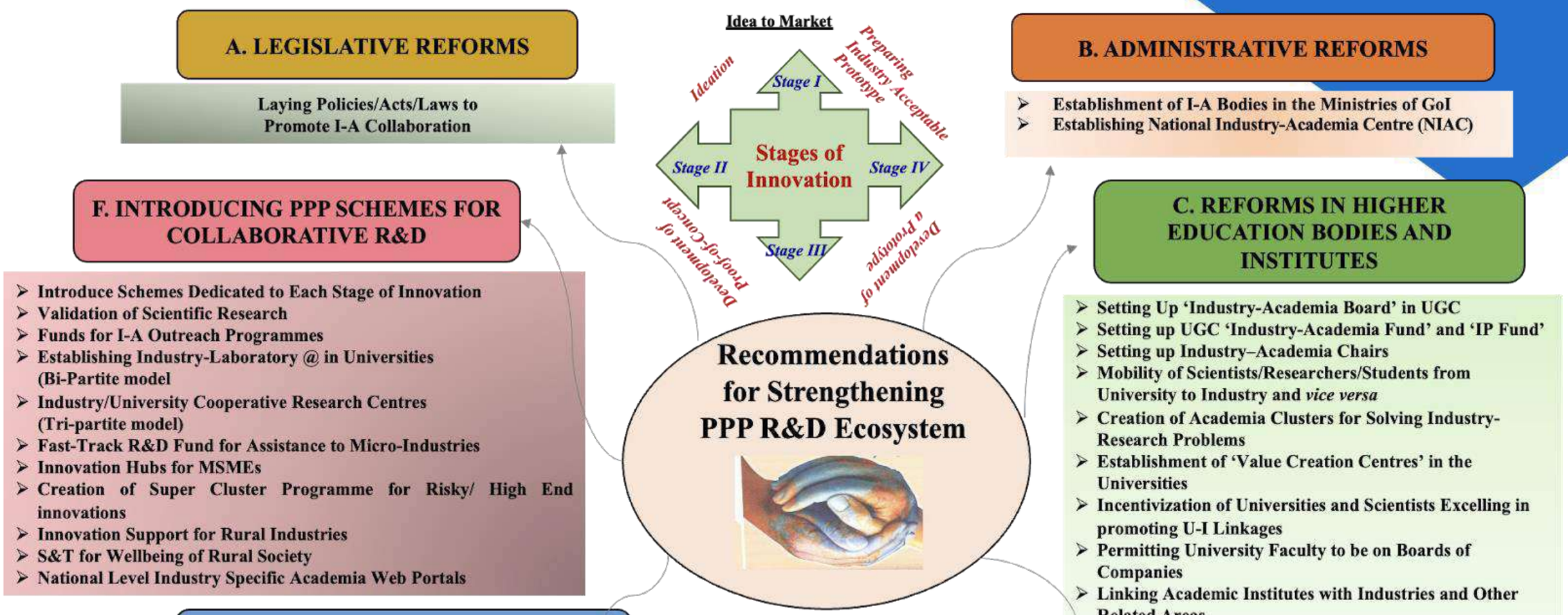
OBJECTIVE 1

Development of a new country specific model for promotion of Public Private Partnership (PPP) for R&D.

Recent years have witnessed intensified discussions on the role and function of actors in the Triple Helix Model, a concept that pays particular attention to the role of universities (also referred to as higher education institutes - HEI) and public research institutions (PRIs) and their contribution to innovation. It has been established that the engagement of scientists in technology transfer and commercialization activities positively impacts the quality and quantity of scientists' research and academic work. In order to contend with heightened global competition; companies are entering into partnerships with other companies, universities or PRIs to leverage external competences for fostering innovation. The need for governments to accomplish more from research investments and requirement of private sector and businesses to constantly innovate plus reduce failures and risks has been a driver for a particularly important collaborative tool i.e. PPPs.

PPPs in STI are broadly defined as research and innovation efforts carried out jointly, co-financed by public and private partners, and may or may not be institutionalised in a designated entity. PPPs in STI are distinct from contract research and development or public procurement of innovation. Based on appropriate evidence and a study undertaken by this Centre, recommendations have been generated, which substantiate as an effective instrument in understanding the PPP developments in the world, and provide useful insights to the policy-makers. Through the study of initiatives taken in foreign countries, models and lessons that can be adapted to the Indian scenario have been identified. The recommendations consist of elements captured from varied programmes, which have the ability to push the innovation ecosystem in our country if implemented in a strategic manner.

REFORMS REQUIRED FOR ENHANCING PUBLIC PRIVATE PARTNERSHIP DEVELOPMENT IN INDIA



NEDFi ROADMAP

On the invitation of North-Eastern Development Finance Cooperation Limited (NEDFi), Guwahati, Assam under the Ministry of Development of North Eastern Region (M-DoNER), a roadmap for development of the Bamboo sector in North East India was formulated. Depending on the success, the proposal will be implemented in other regions of India. NEDFi has been instrumental in assisting the Government of India in policy formulation and research which are of economic and industrial importance. A series of stakeholders meetings with experts and institutes within and outside the country was held and a report has been submitted. The end users of the report are the M-DoNER, NITI Aayog and Prime Minister's Office.

VOCATIONAL COURSE FORMULATION

A curriculum for Vocational course in Bamboo was formulated on the invitation of PSS Central Institute of Vocational Education, Bhopal under the Ministry of Education (MoE), Government of India. The MoE launched a National Skill Qualification framework under which vocational courses are being implemented in schools as one of the components of Samagra Shiksha (Integrated Scheme of School Education). A series of meetings were held from 1-5 February, 2021 and a complete curriculum has been submitted.

PPPs Initiatives in India Assisting the Private Sector Especially SMEs

The private sector has always been appreciated for dynamism, innovativeness, and adaptability that it holds. Revolution and advancement in technological sphere as well as growth of nations as knowledge economies has made it imperative for the private sector primarily, Micro, Small, and Medium Enterprises (MSMEs) to process and undertake innovative activities. Despite their familiarity with the fact that novel & innovative services/processes/products are the key to success, not all small & medium sized enterprises (SMEs) are able to cope with the intricacies of the economy due to lack of technological competence, updated process designs, management protocols, etc. The limited finances, human resources, capabilities as well as time adds to the woes of the SMEs. Even though MSMEs and SMEs make up a significant component of the private sector, their financial inadequacy doesn't allow them to take risks. For them to remain competitive in the markets they must reach out to academia for scientific intellect and assistance in R&D. Innovative SMEs have enforced 'Collaboration' strategies for overcoming the multifarious hurdles faced by them in the innovation cycle.

The governments are also encouraging different programmes & initiatives that promote R&D in the private sector. Studies are being conducted on two kinds of PPP initiatives Technology Development Board and Innovation Voucher Programme which are summarized below.

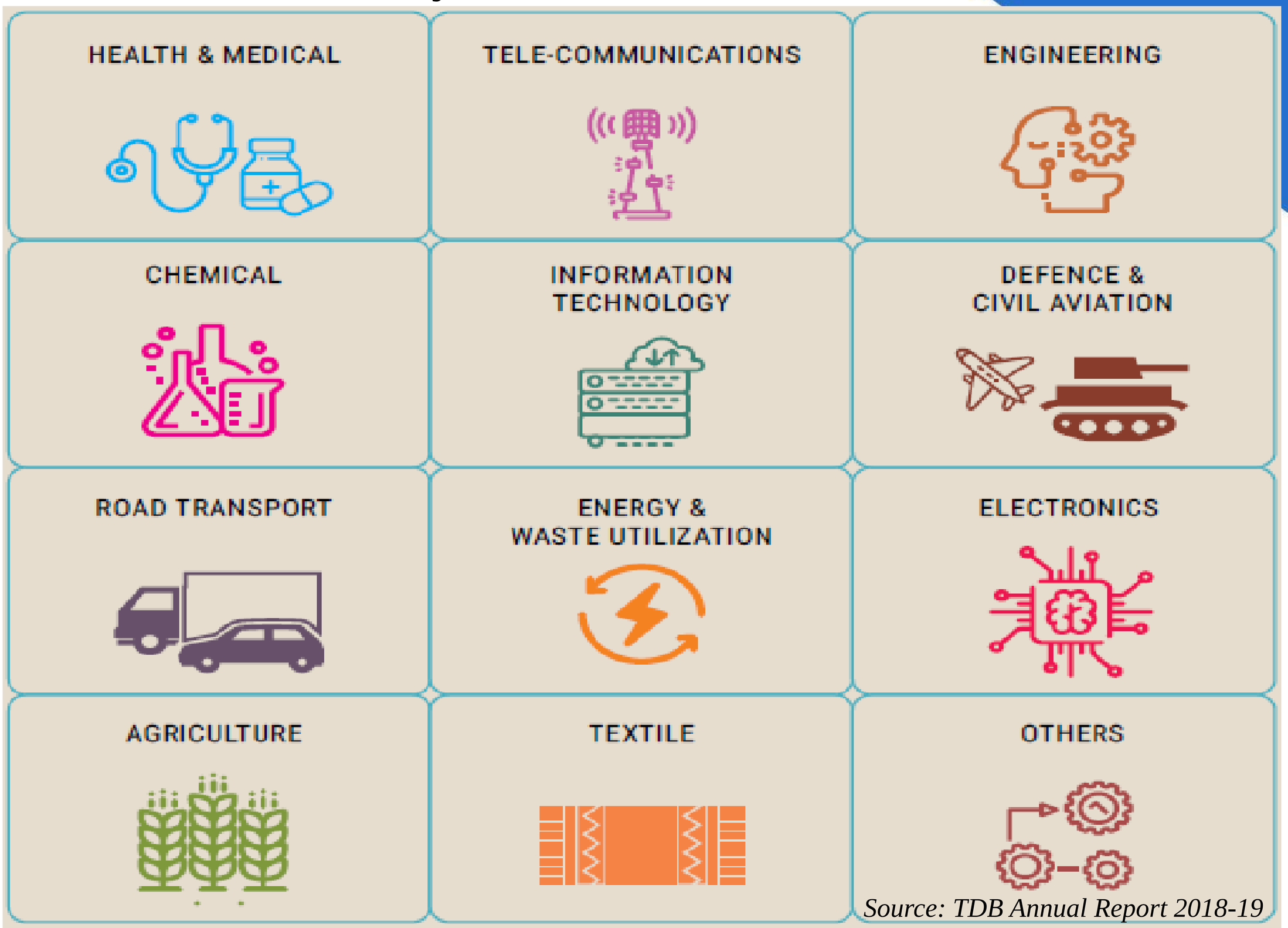
1. Technology Development Board, Goverment of India

The Technology Development Board (TDB) is a unique techno-commercial body of the Department of Science & Technology (DST), Government of India (GoI) that has encouraged innovators and entrepreneurs over the last two decades and given an impetus to indigenous technological growth. TDB provides financial assistance to the industrial concerns and other agencies attempting development and commercial applications of indigenous technology or adapting imported technology for wider domestic application.

Modes of Financial Assistance:

LOANS	EQUITY	GRANT
At 5% simple interest (per annum) Up to 50% of the project cost amount is provided to the applicants in instalments & Linked with milestones.	An amount up to 25% of the total project cost is provided under the condition that this amount does not exceed the capital paid-up by the promoters.	Only to organizations that undertake research and development for the generation of indigenous/home-grown technologies.

Sectors Funded by TDB



Source: TDB Annual Report 2018-19

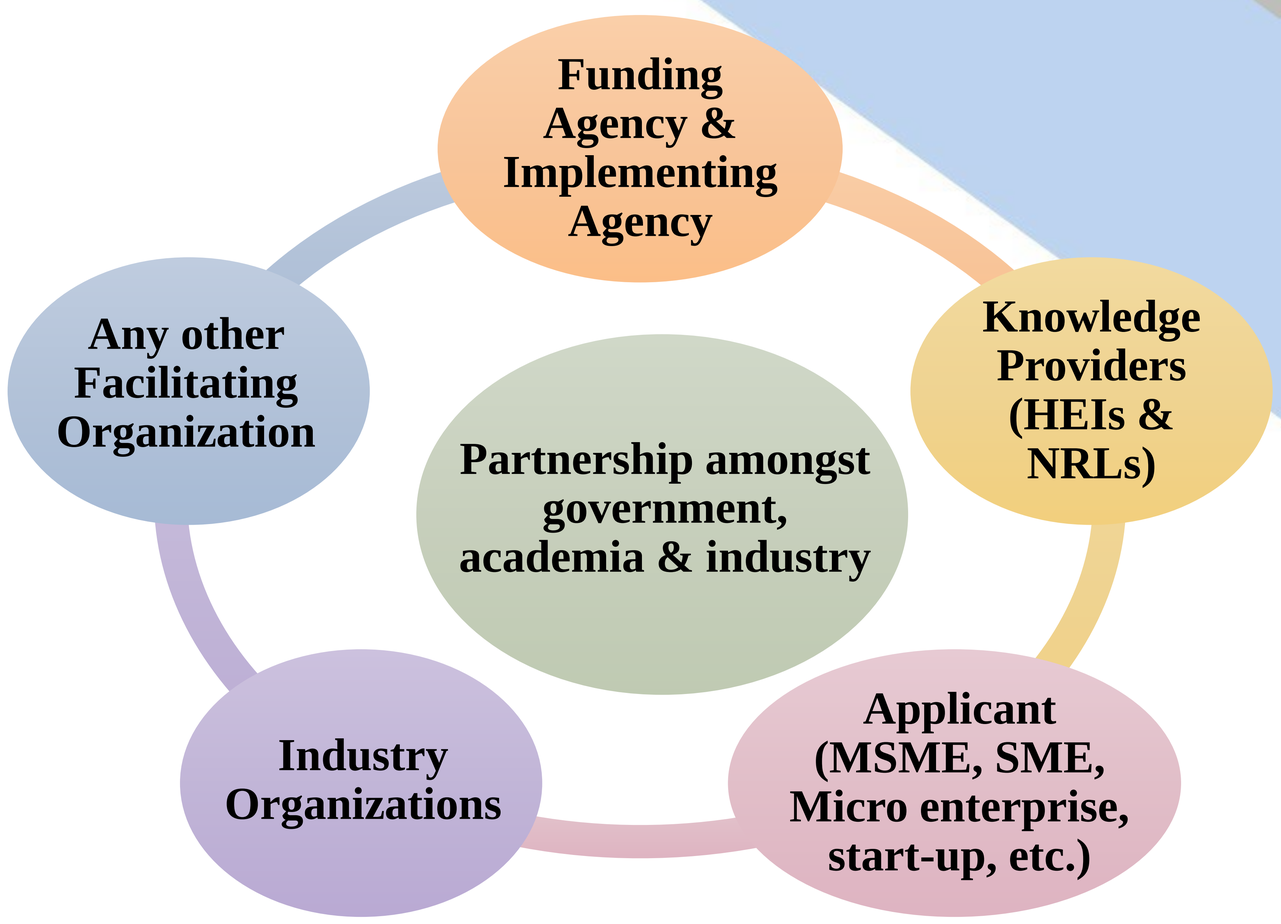
Venture Capital Funds - TDB participates in 11 VCFs in high-risk and high-return technology oriented projects. In the last 24 years of its functioning, TDB has signed nearly 350 agreements for providing financial aid either directly or in collaboration with auxiliary loaning firms including companies. It has materialized as one of the prime promoters of pioneering technopreneurs and established itself as a breakthrough agency for many critical sectors, such as Pharmaceuticals & Biotechnology, Electric Mobility, Information Technology, Chemicals, Medical Devices, Energy, Agriculture, Cyber Security, etc. TDB has evolved perpetually and enhanced its risk sharing capabilities with the Indian industrial sector ever since. The primary investment made by TDB delivers a comfort level to other financing and banking institutions and provides security for further co-investments, as each project application sanctioned by TDB undergoes strict & transparent examination by the experts in the domain who also assess the projects for their practical and commercial viability thoroughly.

The notable amongst the companies supported by TDB over the years are Bharat Biotech International Limited, Shantha Biotechnics Biocon India Limited, Reva Electric Car Company Tata Motors (for Indica), Zen Technologies VEM Technologies Su Kam Power System Limited, Sahajanand Laser Technology Limited, and many more. As per the annual reports, the funding for Health and Medical sector is accounted for 25% followed by Engineering (15%) and Road Transport (14%).

2. Innovation Voucher Programme (IVP), State of Tamil Nadu, India

IVP primarily focuses on strengthening the innovation capability of the industrial sector especially SMEs by aiding them to venture into R&D and advanced manufacturing. The main goal of the initiative is assisting SMEs and enhancing demand within research institutes for greater functionality and collaboration of researchers and companies.

Stakeholders: This scheme efforts to optimise the innovation ecosystem and bolster R&D activities and brings together many stakeholders.



STAKEHOLDERS OF THE INNOVATION VOUCHER PROGRAMME

Voucher Implementation Procedure

Even though the technical details and intricacies for schemes of different countries/regions are usually varying, the conventional steps followed for effective operation are more or less uniform.

Step 1 Identifying the idea (project)

Step 2 Choosing a Knowledge Partner/Mentor

Step 3 Approach Knowledge Partner for consent

Step 4 Filing of online application

Step 5 If selected, the applicant shall be called for the Technical Committee Meeting by EDII-TN

Step 6 If selected by the Technical Committee, the applicant is called for the Steering Committee Meeting

Step 7 If recommended by Supreme Court, the applicant is then selected for the grant of Innovation Voucher

Step 8 50% value of Innovation Voucher released and 12 month clock starts ticking, visits by Committee to review progress

Step 9 Knowledge Partners and Applicant submit completion report, technical committee clears it and balance 50% of Innovation Voucher value is released

CATEGORIES OF INNOVATION VOUCHERS UNDER IVP

	PURPOSE	AMOUNT	GOVT. CONTRIBUTION	VALIDITY	USES
Voucher A	Entry into Research/ Used for analyzing the innovation potential of a novel process/product	Upto INR 2 lakhs	80% of the Project Cost	12 months from the date of issue	Uses include, but not limited to: • Technology roadmap and market research • Feasibility studies, Financing Plan & Technology Audit • Material studies • Design studies • R&D for development of a new product or process
Voucher B	Entry into Market/Promote existing or Early Stage Company in assessing potential markets	Upto INR 5 lakhs	50% of the Project Cost	12 months from the date of issue	Uses include, but not limited to: • Service engineering • Prototyping • Design services • Technology Transfer & IP procurement • Product testing, Quality Assurance, validation and certification • Project management

Characteristics for Implementing and Adopting the Scheme by Other Regions/States

- In order to harness full advantage of this programme, the knowledge partners play a pre-emptive and active role. It is critical for them to undertake practical research, identify the problems of industry, draft project proposals, etc. for driving this initiative.
- To avoid any probable ‘conflict of interest’ and hold in place the definitive scope and goals, the scheme should be administered and/or implemented by a public agency.
- Brokering i.e. matchmaking is a factor crucial to the success of IVP. Developing and providing an enriched brokerage facility is not only vital to the efficacy but also to the reputation of the initiative by allowing firms to identify appropriate academic partners.
- To get the demand side involvement i.e. MSMEs it is also important to tap the Corporate Firms/Large industries and get them to look at their supply chain innovations. Corporates can push MSMEs to take a lead in innovation and create accelerator programmes in industrial clusters. An example of accelerator programme in one of the industrial hubs of Chennai with TVS Training and Services Ltd., for bringing in demand side focus in the activity.
- To leverage the strength of knowledge partners and enable them to take part in IVP, an entrepreneurial ecosystem needs to be developed in academia. Value added courses on entrepreneurship may be added to curriculum especially by autonomous institutions. Certificate programmes may be conducted by the Entrepreneurship Cells in academia.

STI Based Public Private Partnership (PPP) Models in India

Institutional/Infrastructural	Joint R&D Programmes	PPP Facilitators
Institutes: IIITs; ICT-Mumbai; BCP-Mumbai	Strategic and High risk: NMITLI (CSIR)	Human Resource: Mobility and Training Prog.; industrial chairs; industrial PhD.
Agency/Organization: GITA; Invest India; Textile Research Assoc.	Tech. Develop.: National Biopharma Mission (BIRAC); TIDE, MGS (MeitY)	Commercialization: DRDO-ATAC, DI2TM (DRDO); NRDC (DSIR); Antrix Corporation Limited (DoS)
CoEs, Incubators & City Clusters: TCOE; NcFlexc	Stage Specific Prog.: SBIRI, BIPP, PACE, BIG (BIRAC); PRISM (DSIR); IMPRINT (MoE)	Clusters/hubs, TBIs, Incubators and S&T Parks: AGNIi & City Clusters (O/oPSA); NIDHI (DST); CIC (BIRAC); AIM (NITI Aayog)
Cooperative Labs: Industrial labs set up in IITs and IISc	Int. PPP: IIGP (DST); TAFP, TDF (GITA); prog. of CEFIPRA, IGSTC; IUSSTF	Incentivization: Tax Super-deduction; financial support

Note: Abbreviations used-

AGNIi: Accelerating Growth of New India's Innovations

AIM: Atal Innovation Mission

ATAC: Accelerated Technology Assessment and Commercialization

BCP: Bombay College of Pharmacy

BIG: Biotechnology Ignition Grant

BIPP: Biotechnology Industry Partnership Programme

BIRAC: Biotechnology Industry Research Assistance Council

CEFIPRA: Indo-French Centre for the Promotion of Advanced Research

CIC: Cluster Innovation Centre

CSIR: Council of Scientific and Industrial Research

DI2TM: Directorate of Industry Interface & Technology Management

DoS: Department of Space

DRDO: Defence Research and Development Organisation

DSIR: Department for Scientific & Industrial Research

DST: Department of Science and Technology

GITA: Global Innovation & Technology Alliance

ICT: Institute of Chemical Technology

IGSTC: Indo-German Science & Technology Centre

IIGP: India Innovation Growth Program

IIIT: Indian Institutes of Information Technology

IISc: Indian Institute of Science

DoS: Department of Space

IIT: Indian Institute of Technology

IMPRINT: Impacting Research Innovation and Technology

IUSSTF: Indo-U.S. Science and Technology Forum

MeitY: Ministry of Electronics and Information Technology

MGS: Multiplier Grants Scheme

MoE: Ministry of Education

NcFlexc: National Centre for Flexible Electronics

NIDHI: National Initiative For Developing And Harnessing Innovations

NMITLI: New Millennium Indian Technology Leadership Initiative

PACE: Promoting Academic Research Conversion to Enterprise

PRISM: Promoting Innovations in Individuals, Start-ups and MSMEs

PSA: Principal Scientific Adviser

SBIRI: Small Business Innovation Research Initiative

TAFP: Technology Acquisition Fund Programme

TBI: Technology Business Incubator

TCOE: Telecom Centres of Excellence

TDF: Technology Development Fund

TIDE: Technological Incubation and Development of Entrepreneurs

Challenges for Science, Technology and Innovation in Disaster Risk Management- *Development and adaption of suggestive policies to increase public private partnership (PPP) in Disaster Risk Management*

Disaster as per United Nations Office for Disaster Risk Reduction (UNDRR) is a "Serious disruption of the functioning of a community or a society at any scale due to hazardous events interacting with conditions of exposure, vulnerability and capacity, leading to one or more of the following: human, material, economic and environmental losses and impacts". Therefore, in order to be prepared for disasters, saving lives & money, as well as speeding up people's recovery, there is a need for **Disaster Risk Management (DRM).**

Source: https://www.undrr.org/newsevents

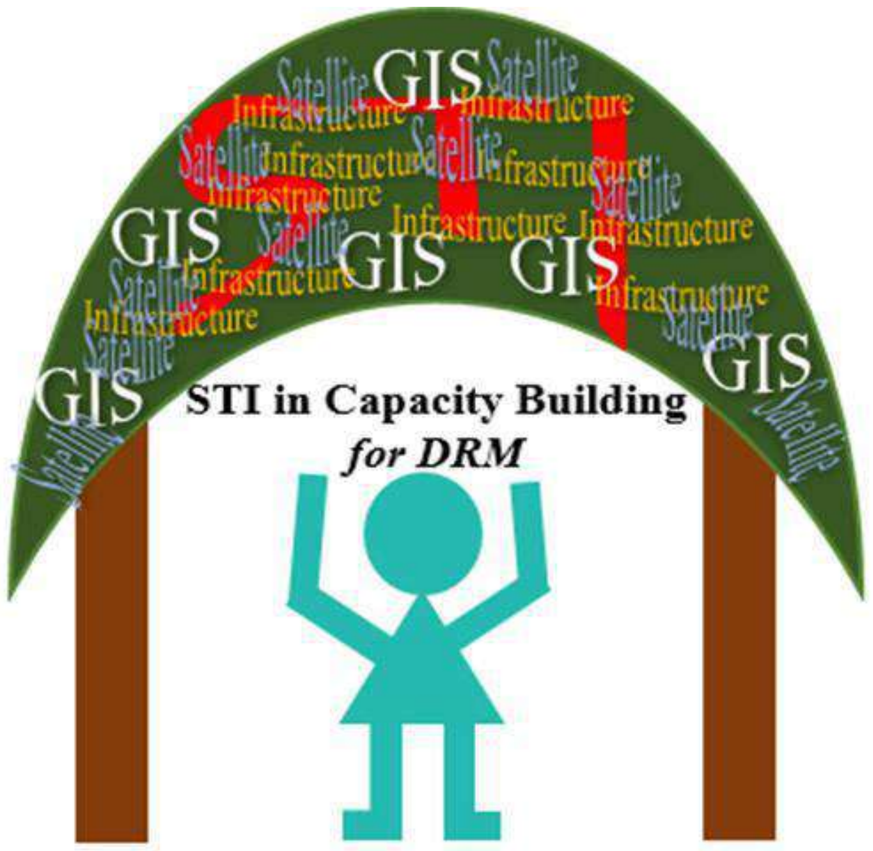
Rather there is a need for modern disaster risk management. It is important for the governments and people alike. It has special significance today because of increasing dangers to the world environment posed by natural hazards like COVID-19 and their effects on socio-economic development. These hazards have opened new possibilities of research as well as affected previously existing avenues too. Thus has added more dimensions to DRM as a result implementation of disaster risk management should be broadened. It should be more inclusive and incessant rather than rigid and intermittent.

The Centre is focusing on developing the framework aimed at creating a resilient and result oriented DRM. It will provide regulations and guidance to the authorities/organizations/officials in charge pertaining to disasters. It should be holistic and cater to the disaster management responsibilities such as a wide range of planning, organizational, operational, and other matters. Capacity building for resilience, research and mitigation should be at the forefront in this framework that integrate an approach for resilience and mitigation.

National Disaster Management Plan (NDMP) - The Indian 'National Policy on Disaster Management' is a framework that touches all the aspects of capacity building for disaster risk management (The five C's) with a vision of "Building a safe and disaster-resilient India by developing a holistic, proactive, multi-disaster and technology-driven strategy". With this vision upcoming National Science, Technology and Innovation Policy (STIP Draft) to play a crucial role in preparing country for the unprecedented instances that include establishing mitigation strategies for external and internal risks such as increasing climate resilience.

The five C's

1. Community based disaster management, including last mile integration of the policy, plans and execution.
2. Capacity development in all related areas.
3. Consolidation of past initiatives and best practices.
4. Cooperation with agencies at the national, regional and international levels.
5. Compliance and coordination to generate a multi-sectoral synergy.



One such area of DRM that needs to be focused is Public-Private Partnerships (PPP). Involvement of Private Institutions in capacity building for DRM can excel the delivery of resilience services by the government. In addition it will boost the financial instrumentations of the Indian economy pre or post disasters. Further, as demand is growing for multidisciplinary inquiry to address the complex and inter-related problems of climate change, disasters and sustainable development; the role of private institutions in DRM becomes important to overcome logistics challenges

Public Private Partnerships in Disaster Risk Management has gained momentum in 2021 as can be seen in COVID-19 scenario. However partnerships bond needs to broaden to

- *Increase scientific research for coordination in DRM.*
- *To strengthen government infrastructure disaster risk mitigation by development of Industry-to-Community linkages.*
- *Enhancing Investment and Involvement level in resilience such as in disaster data management i.e. Open data access, knowledge management and sharing, Capacity to generate good data on disasters.*
- *Share responsibilities and Contributions for enhancing disaster preparedness for effective response and to "Build Back Better" in recovery, rehabilitation and reconstruction.*
- *Strengthen transfer of technologies and Continuation of technical support in partnership.*

To address above said perspectives there is a need for revamping the role of Private institutions in capacity building for resilience and bring forward suggestive policies to increase public private partnership (PPP) in DRM. With this aim the following themes are under study at the Centre.

1. *Analysis of organizational, public commitment and institutional frameworks for DRM with aim to study Cooperative Social Responsibility in DRM.*
2. *Exploration of disaster risk policies, legislation and community action in Indian context to enhance PPP in DRM in context of "Build Back Better" inclusive in National Disaster Management Plan (NDMP) as well as governance and social inclusion in Disaster Risk Reduction for building resilience.*
3. *Public Private Partnership and networking overview for Disaster risk management for instance analyzing FICCI members working under the ARISE India initiative in disaster risk reduction in collaboration with Govt. of India's Ministries and Institutes such as MHA, NDMA, DST, MoEF and NIDM.*
4. *Analysis of financial instruments in disaster risk reduction such as studying PPP in National Disaster Response Reserve (NDRR).*
5. *Knowledge development including education, training, research and information in context of DRM in collaboration with National Institute for Disaster Management (NIDM), New Delhi working for the initiative.*

OBJECTIVE 2

Identify areas of policy gaps for stimulation of private sector investment in R&D and suggest changes in policy environment.

With the onset of the 21st century, the emerging need and importance of knowledge and research driven industries for sustainable growth and economic development of the nation is being widely realized. One of the major key drivers for the country's development is generation and uptake of scientific innovations. These innovations are the result of high-end innovative research practices undertaken by the public (government and academia) and private sectors (industry). Developed and developing nations are continuously strengthening their national research and development (R&D) ecosystem by revisiting R&D support mechanisms. Worldwide, countries have come up with impactful steps in their R&D strategy to stimulate increased involvement and expenditure in research by public and private sectors.

Indian government has continuously made efforts to stimulate private sector's investment in R&D by introducing a tax benefit regime for the private sector engaged in R&D along with funding support for pursuing R&D projects. In spite of continuous efforts, the aim of the Indian government to achieve public and private investments in R&D under 1:1 range by the end of Decade of Innovation (2010-2020) remains yet to be accomplished.

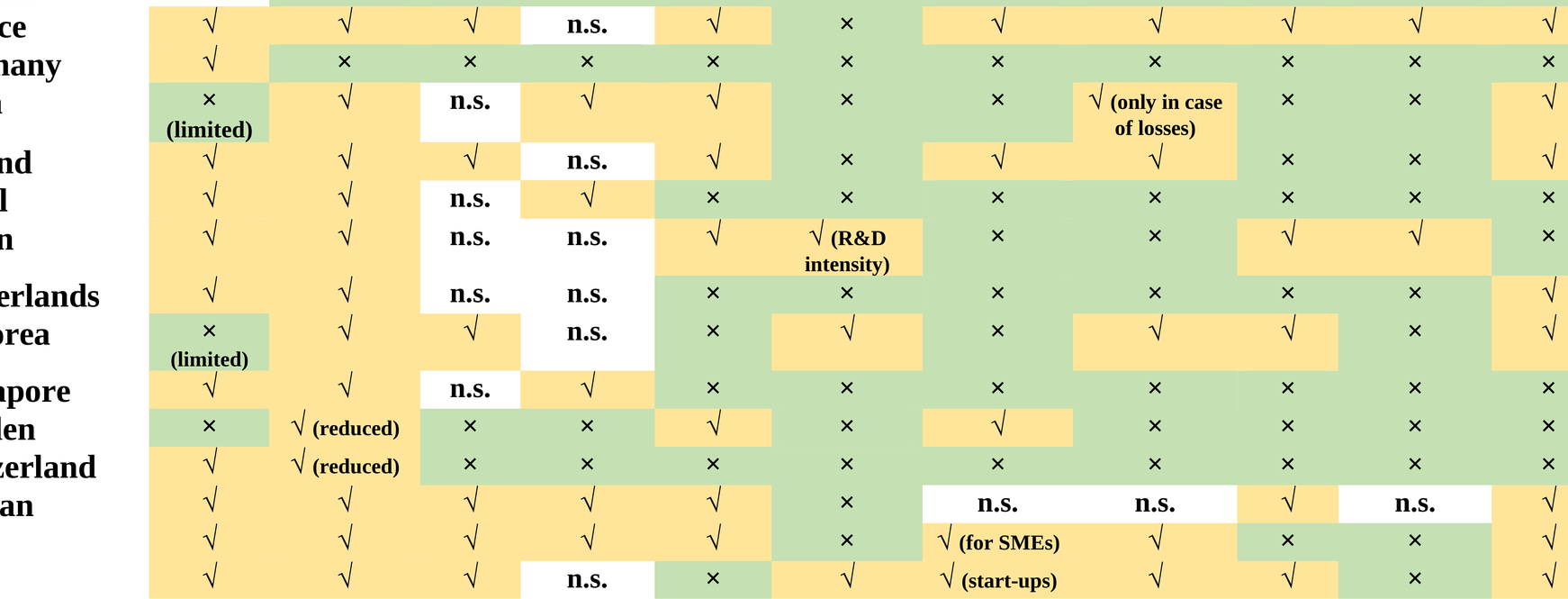
Studies Carried out at the Centre

A. R&D incentivization followed by select countries

S. No.	Country	Funding Support	R&D Tax (combined)	R&D Tax Credit	R&D Tax Deduction	Volume based	Incremental based	Refundable	Carry Forwarded	Preferential Tax Incentives		Patent Box	CAPEX incentives
										SMEs	collaboration		
1.	Australia	√	√	√	n.s.	√	×	√ (SMEs)	√	√	×	×	√
2.	Canada	√	√	√	n.s.	√	×	√ (SMEs)	√	√	×	×	√
3.	China	√	√	n.s.	√	×	×	×	×	×	×	√	×
4.	Finland	n.s.	×	×	×	×	×	×	×	×	×	×	×
5.	France	√	√	√	n.s.	√	×	√	√	√	√	√	√
6.	Germany	√	×	×	×	×	×	×	×	×	×	×	√
7.	India	× (limited)	√	n.s.	√	√	×	×	√ (only in case of losses)	×	×	√	√
8.	Ireland	√	√	√	n.s.	√	×	√	√	×	×	√	√
9.	Israel	√	√	n.s.	√	×	×	×	×	×	×	×	×
10.	Japan	√	√	n.s.	n.s.	√	√ (R&D intensity)	×	×	√	√	×	√
11.	Netherlands	√	√	n.s.	n.s.	×	×	×	×	×	×	√	√
12.	S. Korea	× (limited)	√	√	n.s.	×	√	×	√	√	×	√	√
13.	Singapore	√	√	n.s.	√	×	×	×	×	×	×	×	×
14.	Sweden	×	√ (reduced)	×	×	√	×	√	×	×	×	×	×
15.	Switzerland	√	√ (reduced)	×	×	×	×	×	×	×	×	×	×
16.	Taiwan	√	√	√	√	√	×	n.s.	n.s.	√	n.s.	√	√
17.	UK	√	√	√	√	√	×	√ (for SMEs)	√	×	×	√	√
18.	USA	√	√	√	n.s.	×	√	√ (start-ups)	√	√	×	√	√

Compiled from2017 Survey of Global Investment and Innovation Incentives-Deloitte; Worldwide R&D Incentives Reference Guide 2017-EY]; Global R&D Incentives Group-pwc; Compendium of R&D Tax Incentive Schemes: OECD countries and selected economies, 2016-OECD; n.s: .not specified; ***Source:*** ***Adapted from book: Public Private Partnerships in R&D…A Global Perspective (Tewari et al., 2020)***

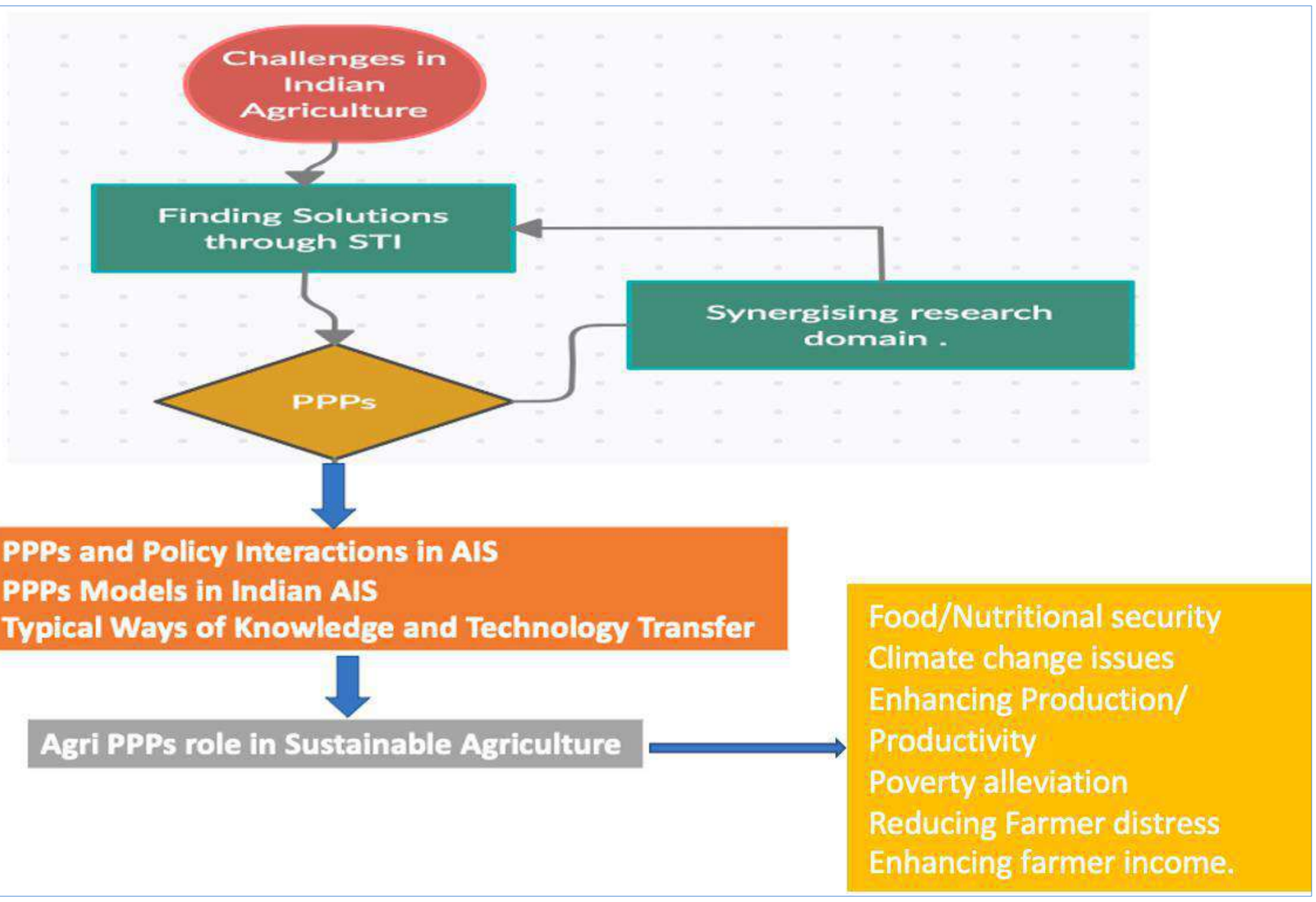
B. Government mediated R&D stimulation of private sector in India



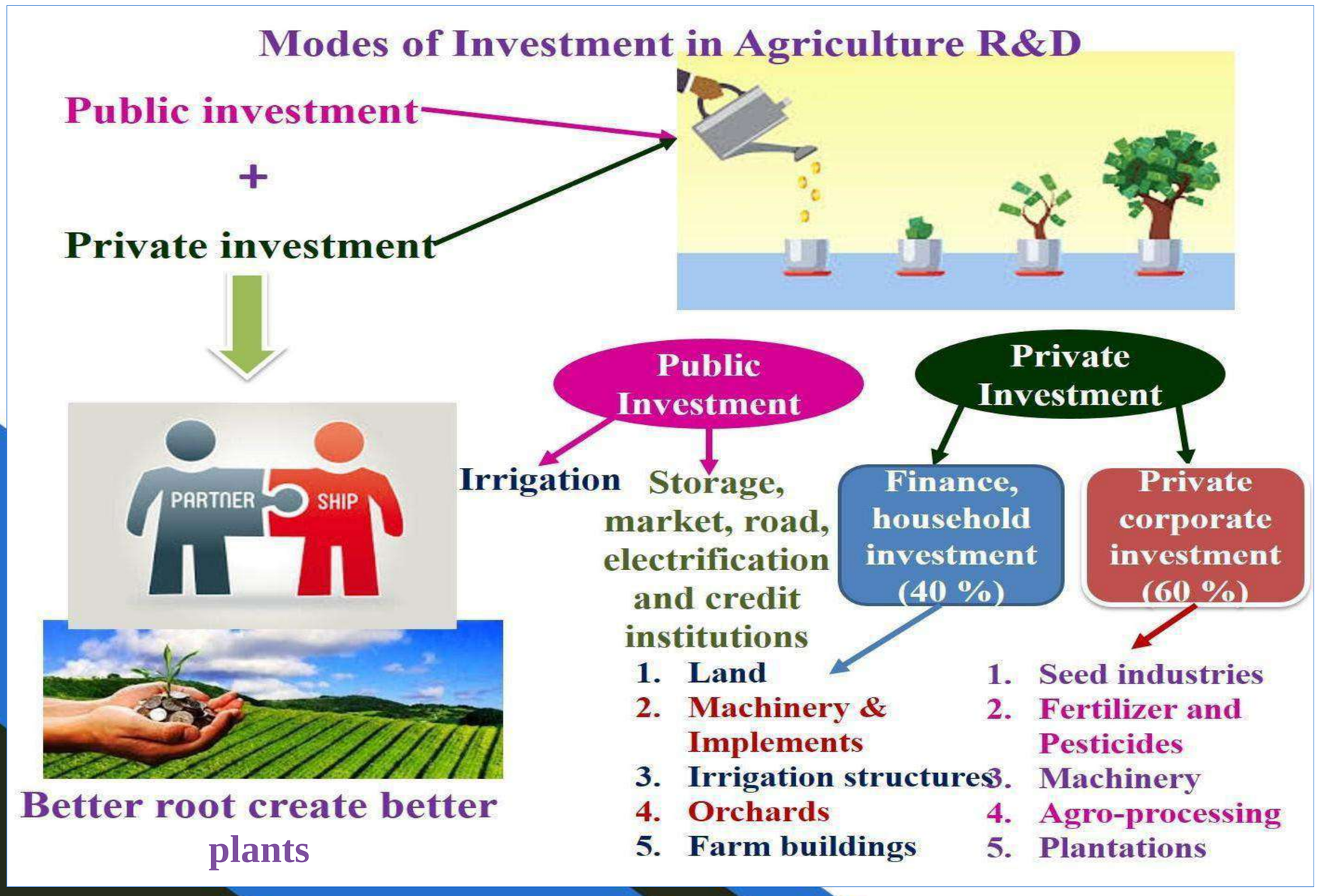
Public Private Partnership (PPP) and Policy Interactions in Indian Agricultural Innovation System (AIS)

There is an urgent need to public private partnership and policy interactions in the agriculture innovation system in India. Assessment of the recent PPPs of few agricultural universities is essential to analyse their contribution in promoting sustainable agriculture in India.

PPP in Agricultural Innovation System



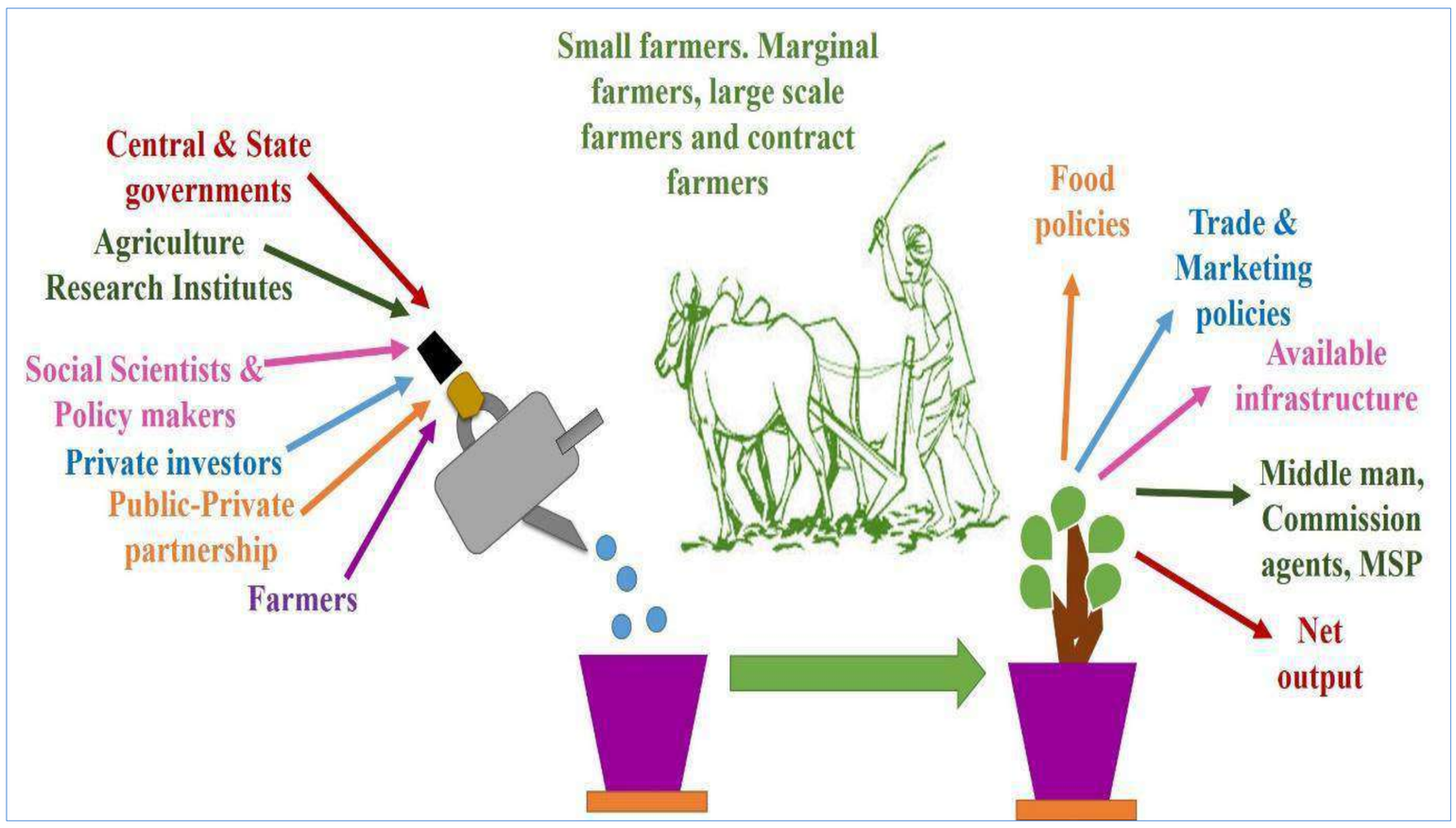
Role of PPP in Agriculture R&D



Analyzing various policy gaps in Agricultural R&D of India in Punjab.

Current scenario of agriculture R&D requires detailed study of the various parameters enabling private investment and management of farmer's security. An initial study has indicated that there is a lack of crop diversification due to non-supportive subsidies, R&D and felicitating policies and inappropriate infrastructure. It is essential to have a liberal Agriculture Produce Marketing Committee (APMC) law for incentivizing private players. Moreover, there is a lack of effective communication between government, private investors, research organizations and farmers. PPPs in agricultural R&D will enable advances in biotechnology strengthened IPRs, globalization of markets and new opportunities to collaborate with public sector institutions. Moreover, liberalization and rectification of regulations will encourage private players.

Role of stakeholders in Agricultural R&D



Methodology to be adopted for the study

OBJECTIVE 3

Adopt evidence-based approaches for identifying and promoting areas for generation of intellectual properties

According to various national and international rankings, India is amongst the top 5 nations in the parameter of 'Research Publications' but fares poorly in the generation of 'Intellectual Properties (IP)'. DST-Centre for Policy Research at Panjab University, Chandigarh undertook a study of 904 institutes, comprising 351 HEIs (based on National Institutional Ranking Framework) and all the national research labs (553). The study revealed that, a large number of institutes publish a sizable number of research publications, however, only a handful of them contributed significantly in the domains of research publications as well as patents generation as shown below in Table. 1,2 & 3.

In the second phase, the study was extended to examine the commercialization status of the patents granted to the above mentioned institutions by checking the working/non-working status of the patents from a prescribed 'Form-27' filed by the applicants. A total of 1961 patents were granted to the institutes during the period 2010-17 in India only. It was observed that, the funding agency Council of Scientific & Industrial Research (CSIR) led in patents commercialization followed by Defence Research & Development Organisation (DRDO), Indian Space Research Organisation (ISRO), Indian Institutes of Technology (IITs), Indian Council of Agricultural Research (ICAR) and Department of Biotechnology (DBT). It was observed that only a handful educational institutions like IIT-Madras, IIT-Bombay, ITC-Mumbai, Delhi University, IISc-Bangalore are engaged in the patents commercialization but major chunk of the academic sector are hesitant of converting the research into IP. Low commercialization rate of patents could be largely attributed to poor Technology Readiness Levels (TRLs) of the technologies/products and less awareness and efforts put in by the inventors or the applicants.

Part 1: PATENTS GENERATION

Table – 1 Top 20 Institutions based on Research Publications (2010-16)

S. No.	Institutes	Res. Publications	S. No.	Institutes	Res. Publications
1.	DU, New Delhi	15052	11.	VIT, Vellore	6267
2.	IISc., Bangalore	10852	12.	IIT, Roorkee	6028
3.	IIT, Kharagpur	8724	13.	IIT, Kanpur	5622
4.	BHU, Varanasi	8140	14.	AU, Chidambaram	5400
5.	BARC, Mumbai	7887	15.	IIT, Hyderabad	5398
6.	UoH, Hyderabad	7649	16.	PGIMER, Chandigarh	5380
7.	IIT, Delhi	7148	17.	GU, Ahmedabad	4871
8.	AIIMS, New Delhi	6591	18.	PU, Chandigarh	4733
9.	IIT, Madras	6440	19.	AMU, Aligarh	4588
10.	IIT, Bombay	6300	20.	IICT, Hyderabad	4534

Table – 2 Top 20 Institutions based on Patents Granted (2010-16)

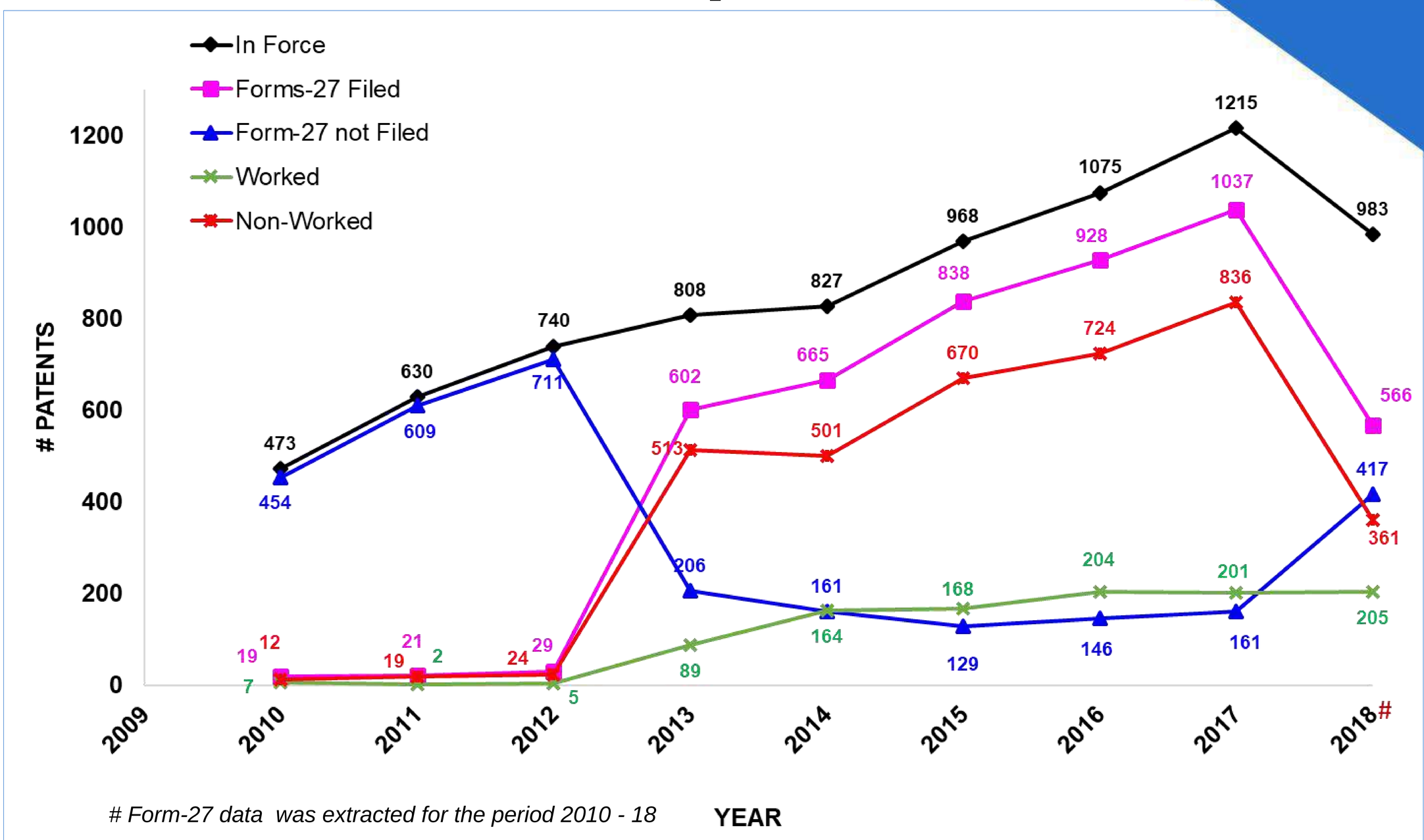
S. No.	Institutes	Patents Granted	S. No.	Institutes	Patents Granted
1.	IISc, Bangalore	174	11.	IIT, Kanpur	44
2.	CFTRI, Mysore	144	12.	CDRI, Lucknow	42
3.	NCL, Pune	114	13.	NIIH, Maharashtra	41
4.	IIT, Bombay	100	14.	CSMCRI, Bhavnagar	40
5.	IICT, Hyderabad	76	15.	ICT, Mumbai	39
6.	IIT, Delhi	56	16.	IIP, Dehradun	38
7.	JNCASR, Bangalore	53	17.	NII, New Delhi	37
8.	CLRI, Chennai	50	18.	AIIMS, New Delhi	31
9.	IIT, Madras	48	19.	DU, New Delhi	26
10.	NML, Jamnagar	48	20.	NIPER, Mohali	21

Table – 3 Institutes Excelling in Research Publications, but Low on Patents Granted, 2010-16

S. No.	Institute	Res. Publications	Patents Granted
1.	PGIMER, Chandigarh	5380	1
2.	IARI, New Delhi	3934	4
3.	Saha Institute of Nuclear Physics, Kolkata	2543	1
4.	IVRI, Izatnagar	2242	2
5.	BHU, Varanasi	8140	3
6.	UoH, Hyderabad	7649	5
7.	VIT University, Vellore	6267	3
8.	IIT, Roorkee	6028	1
9.	Annamalai University, Chidambaram	5400	1
10.	IIT, Hyderabad	5398	2
11.	Gujarat University, Ahmedabad	4871	0
12.	PU, Chandigarh	4733	2
13.	AMU, Aligarh	4588	2
14.	IIT, Guwahati	4205	0
15.	S.R.M Institute of S&T, Chennai	3509	4
16.	Sathyabama University, Chennai	3211	0
17.	Jawaharlal Nehru University, Delhi	2739	6
18.	IIT, Dhanbad	2323	3
19.	NIT, Rourkela	2275	0
20.	Bharath University, Chennai	2082	0

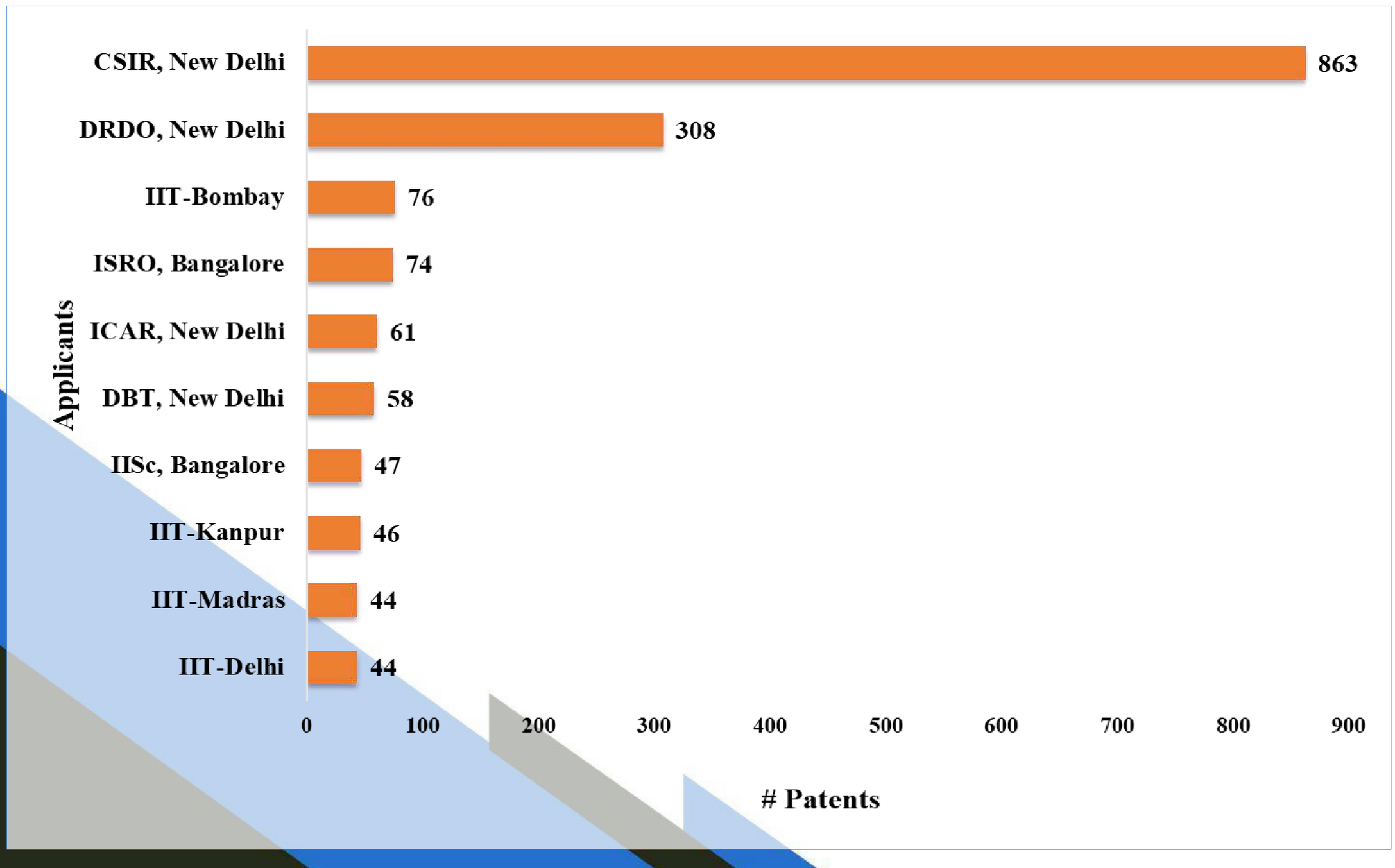
Part 2: PATENTS COMMERCIALIZATION

Year-wise statistics for parameters studied

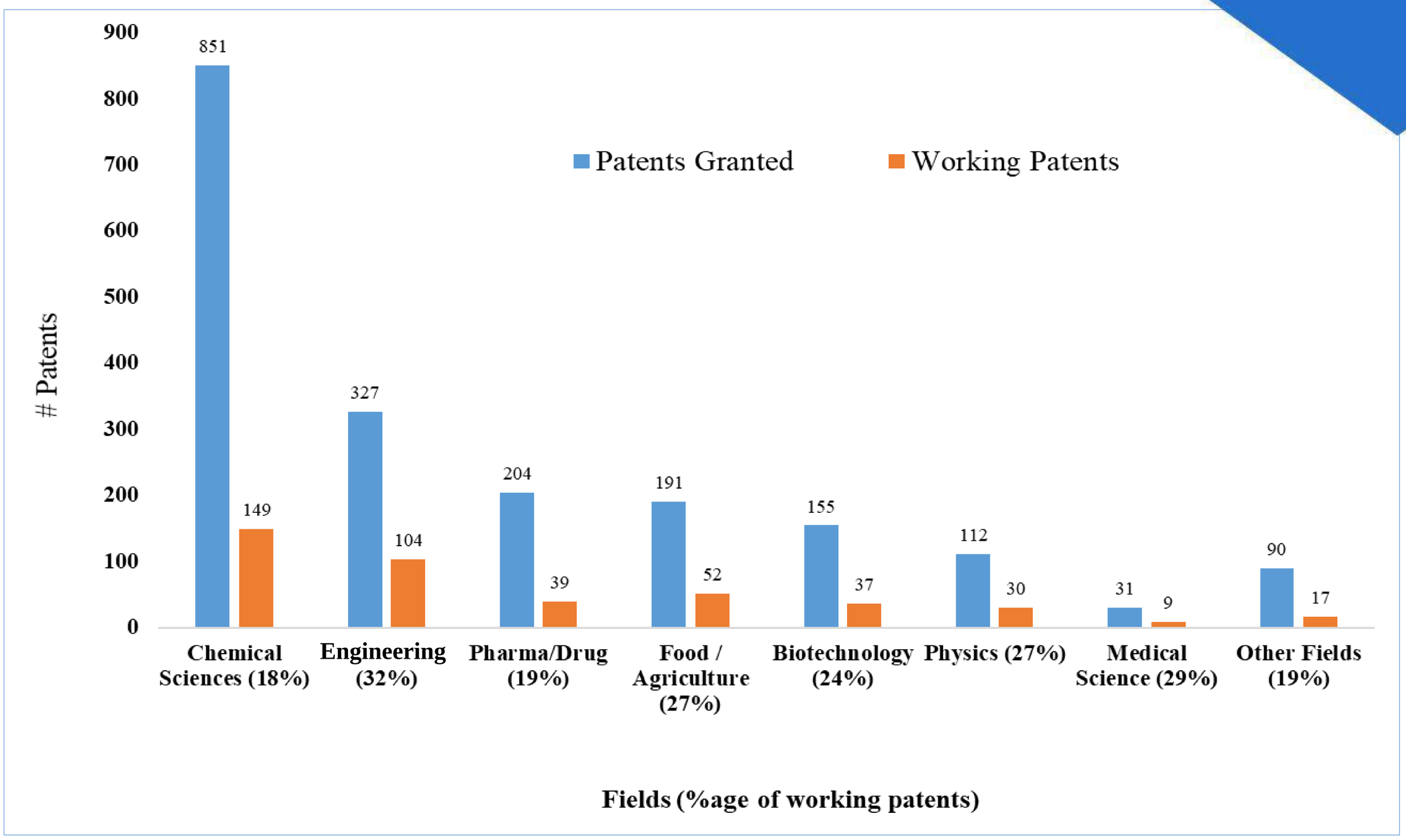


 # Form-27 data was extracted for the period 2010 - 18

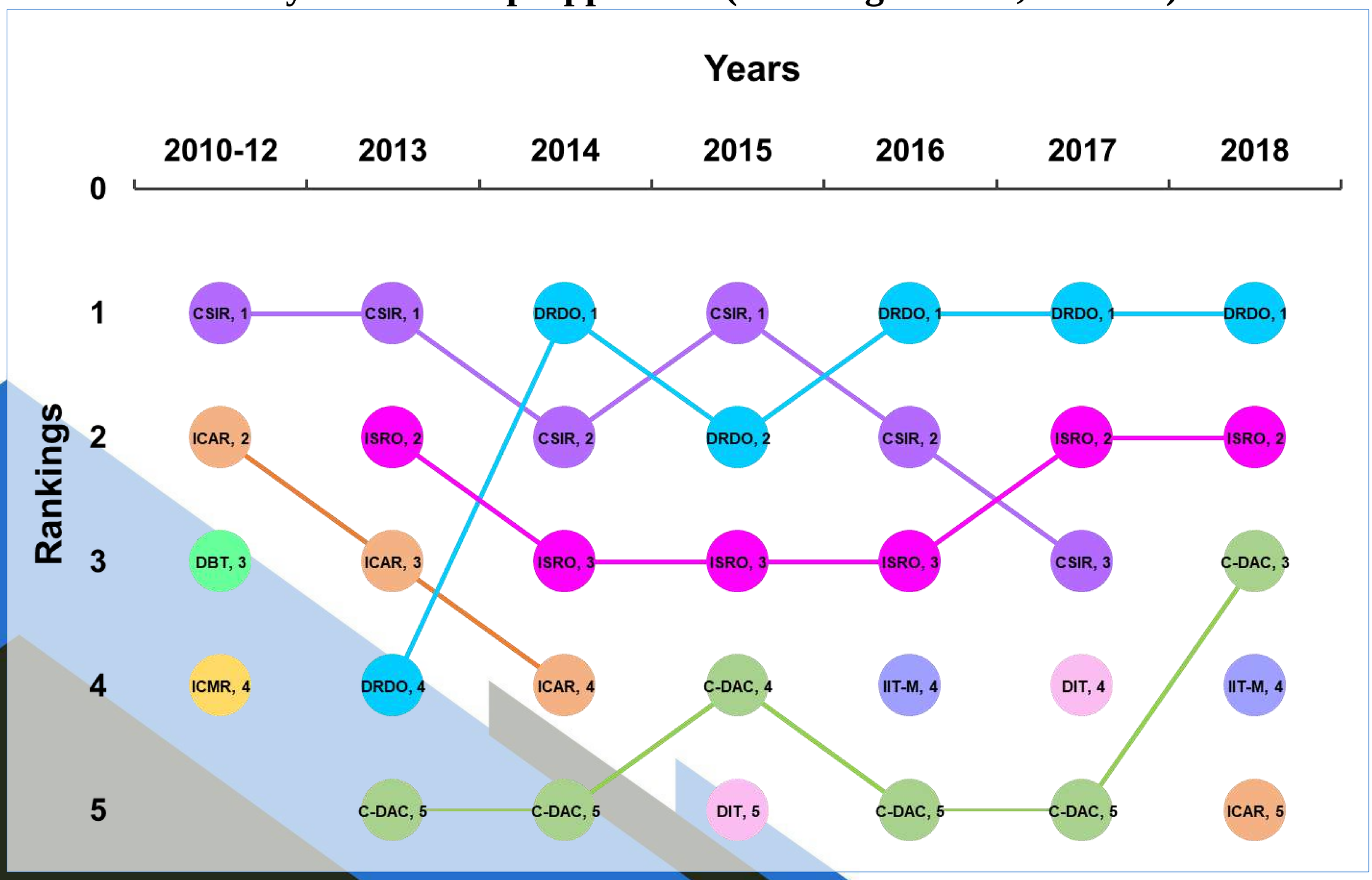
Top 10 institutes with maximum granted patents



Field-wise breakup and percentage share of total patents granted



Yearly Trend of Top Applicants (Working Patents, 2010-18)

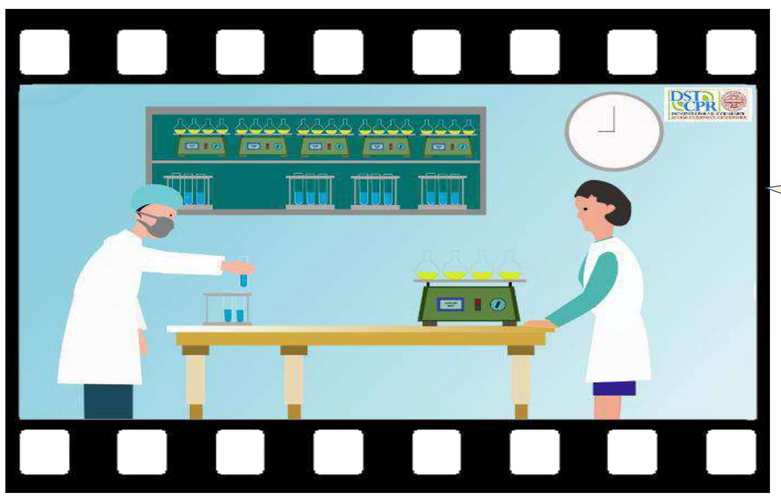


Outreach plan for sensitization of IPR and patent filing

It is very essential to sensitize researchers about the proper channels of patent filing. To execute this task, the Centre is in the process of making an interactive animated video and flyer pertaining to all the details, from patent filing to its commercialization in Panjab University. Some of the glimpses of the video are as below:

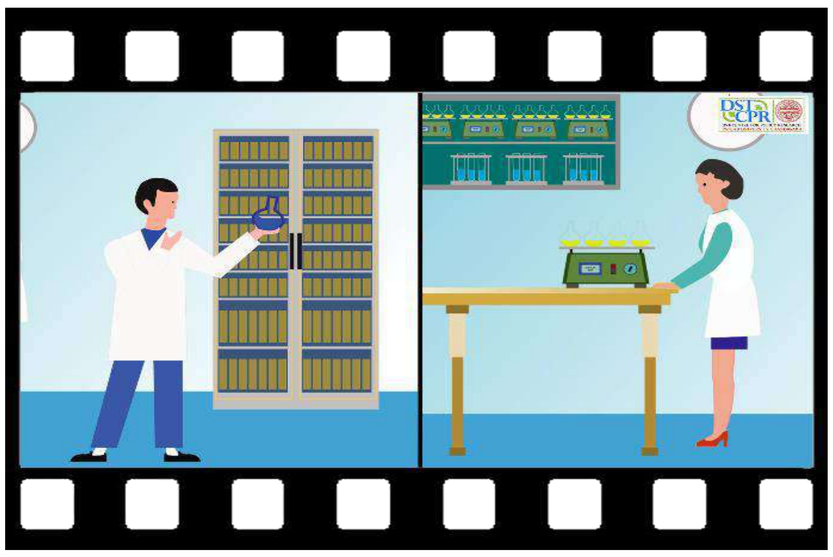
Welcome to DST-Centre for Policy Research, Panjab University, Chandigarh. We are here to help you to be aware about various topics of Intellectual Property Right (IPR)

Let us begin with learning about the process involved, documents and time required to file a patent through CIIPP at Panjab University



Are you a researcher of Panjab University and working on some important projects?
If yes, do you know that your novel research which has industrial application needs protection from infringers?

Getting your invention secured through a patent will protect your work and also can get financial benefits with your innovation or invention
If you are a scientist working under Panjab University, you can file a patent free of cost through CIIPP or through a private attorney.



In the previous studies conducted by DST-CPR at PU, Chd, it was found that researchers in the universities and higher education institutes are not aware of the process of patent filing. Maximum researchers were not even aware of the existing IP Cell within the premises. In a feedback study it was also found that they consider the process of patent filing very complicated and time-consuming, so ultimately, they end up with publishing their research in the public domain and prefer to fulfil their PhD submission requirements.
Video will be circulated to all departments and affiliated colleges of Panjab University. This will sensitize more researchers to file patents and make the university among one of the top universities in IP filing and commercialization. We hope that we will be successful in achieving this mandate and the same model can be created for other universities for enhancing the translational research ecosystem in the academic sector.

Science, Technology and Innovation Policy Draft (STIP 2020 Draft

https://dst.gov.in/draft-5th-national-science-technology-and-innovation-policy-public-consultation

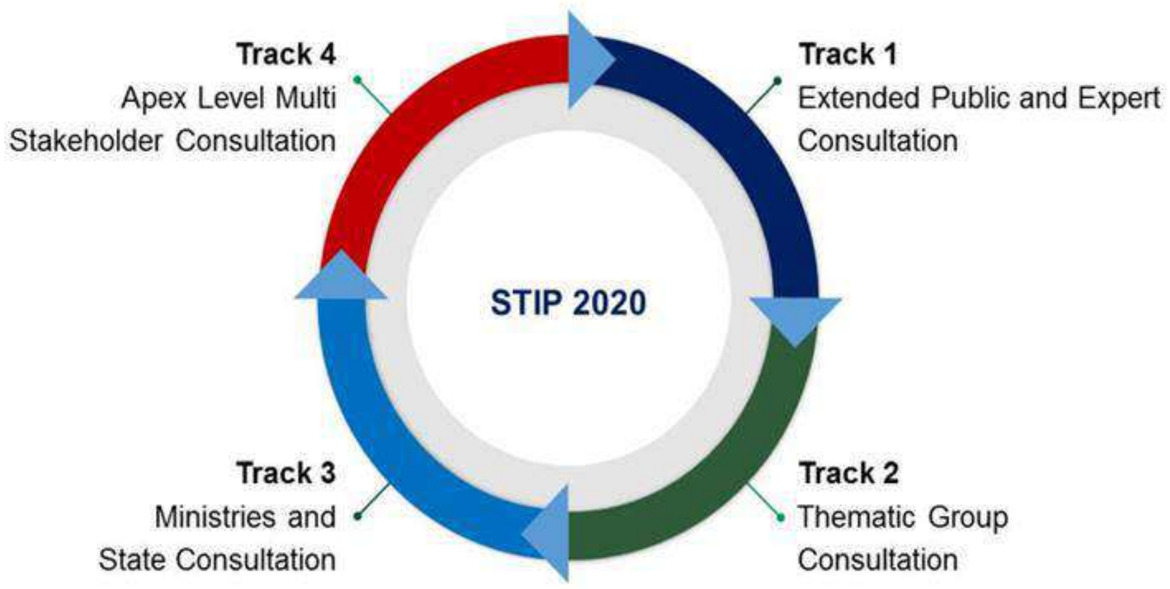
Source: https://thesciencepolicyforum.org/initiatives/science-technology-and-innovation-policy-stip-2020/

The Government of India is on its way to release *India's 5th National Science, Technology and Innovation Policy (STIP), a joint initiative of the Office of Principal Scientific Adviser to the Government of India and Department of Science and Technology, Government of India*. STIP aims to reorient the National Science, Technology and Innovation landscape in alignment with the national needs and priorities. *The unique attributes of the impending STIP formulation process* comprise being inclusive and decentralized in nature and policy building through a bottom-up, expert-driven, and evidence-informed approach. Our Centre has been actively involved in the formulation process

The current COVID pandemic has called upon a wake-up call to every nation to reorient and strategize their socio-economic and emergency preparedness. India's upcoming STIP at this crucial juncture aims to reorient national priorities and capabilities by invigorating and strengthening the STI ecosystem. India is gearing itself to establish a guiding policy for making India self-reliant supporting the clarion call of our Honorable Prime Minister Shri Narender Modi of '*Atmanirbhar Bharat*' by following the *'Vigyan se Vikas*' mantra.

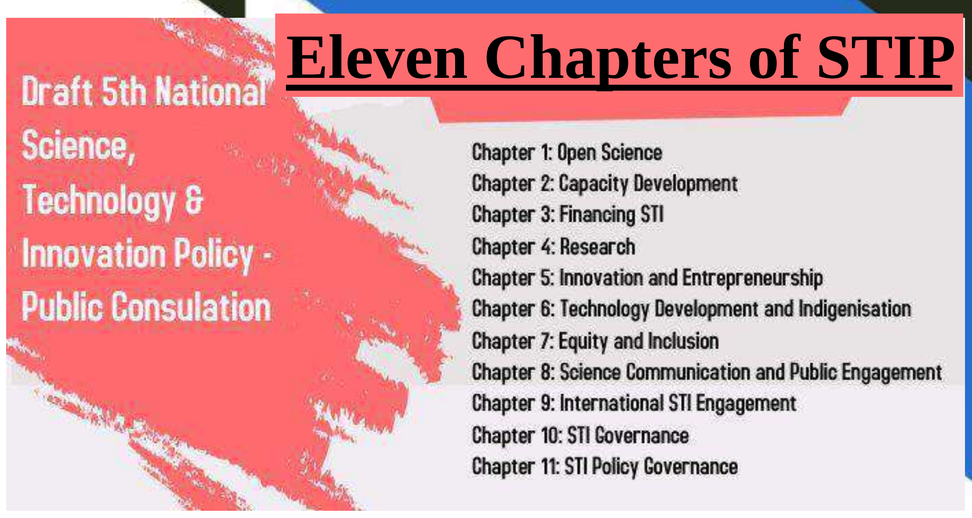
The policy formulation process parallelly worked under four tracks, track I focusing on extended public and expert consultations, track II comprising of 21 thematic oriented expert-driven and evidence-informed consultation that formed the base of the new policy, track III involving consultations with science and technology ministries along with socio-economic ministries, States and Union Territories and track IV the final binding track comprising of apex level deliberations with high-level multi-stakeholders (national and global) on science policy matters. The process involved nearly *300 rounds of consultations with more than 40,000 stakeholders well distributed in terms of region, age, gender, education, economic status, etc*. The formulation process, by design, envisioned as a very inclusive and participative model with intense interconnectedness among different tracks of activities.

Four track for policy formulation



Source: https://thesciencepolicyforum.org/initiatives/science-technology-and-innovation-policy-stip-2020/

STIP draft was released for public consultation from 31st December 2020 to 31st January 2021. The STIP draft document laid out the trajectory for revamping Indian STI landscape. The STIP draft comprises eleven chapters covering the whole ambit of STI ecosystem.



Source: https://cpr.puchd.ac.in/

Each chapter has transformative policy directives with an aim to reinvigorate and revamp Indian STI to make India self-sufficient and self-reliant. The transformative recommendations are presented below.

National STI Observatory that will act as a central repository for all kinds of data related to and generated from the STI ecosystem. Open Science Framework	*A future-looking, all-encompassing Open Science Framework will be built to provide access to scientific data, information, knowledge, and resources to everyone in the country and all who are engaging with the Indian STI ecosystem on an equal partnership basis.*
Strategies to improve STI education making it inclusive at all levels and more connected with the economy and society will be developed through processes of skill building, training and infrastructure development.	*Expand the financial landscape of the STI ecosystem, each department/ ministry in the central, the state and the local governments, public sector enterprises, private sector companies and startups will set up an STI unit with a minimum earmarked budget to pursue STI activities.*
Hybrid funding models with enhanced participation from public and private sectors will be created through the Advanced Missions in Innovative Research Ecosystem (ADMIRE) initiative.	*Research and Innovation Excellence Frameworks (RIEF) will be developed to enhance the quality of research along with promotion of engagements with relevant stakeholders.*
The policy envisions strengthening of the overall innovative ecosystem, fostering Science & Technology (S&T)- enabled entrepreneurship, and improving participation of the grassroots levels in the research and innovation ecosystem	*An institutional architecture to integrate Traditional Knowledge Systems (TKS) and grassroots innovation into the overall education, research and innovation system will be established.*
A two-way approach of indigenous development of technology as well as technology indigenization will be adopted and focused upon in alignment with national priorities, like sustainability and social benefit, and resources.	*A Strategic Technology Board (STB) will be constituted to act as a link connecting different strategic departments. A Strategic Technology Development Fund (STDF) will be created to incentivize the private sector and HEIs.*
The policy provides renewed impetus to the mainstreaming of equity and inclusion within the STI ecosystem. An India-centric Equity & Inclusion (E&I) charter will be developed for tackling all forms of discrimination, exclusions and inequalities in STI leading to the development of an institutional mechanism.	*The policy will work towards mainstreaming science communication and public engagement through the development of capacity building avenues through creative and cross-disciplinary platforms, research initiatives, and outreach platforms.*
STIP charts pathways to a dynamic, evidence-informed and proactive international S&T engagement strategy. Engagement with the Diaspora will be intensified	*A decentralized institutional mechanism balancing top-down and bottom-up approaches, focussing on administrative and financial management, research governance, data and regulatory frameworks and system interconnectedness, will be formulated for a robust STI Governance.*
A robust Research and Innovation (R&I) governance framework will be set up to facilitate, stimulate and coordinate R&D activities across the sectors	*To serve all the aspects of STI policy governance and to provide the knowledge support to institutionalised governance mechanisms, a STI Policy Institute will be established to build and maintain a robust inter-operable STI metadata architecture.*

Source: https://dst.gov.in/sites/default/files/STIP_Doc_1.4_Dec2020.pdf

Post Draft Science, Technology and Innovation Policy (STIP) Consultation

'Post-Draft STIP Consultation with Thought Leaders and Representatives of Govt., Academia and Industry from Northern Region of India'

S.No.	Expert	Designation
Presented on '*Major Recommendations of Draft Science, Technology and Innovation Policy 2021'* by Dr Akhilesh Gupta, Head STIP Secretariat and Advisor, DST		
Representatives from Government		
1.	Dr. J. K. Arora	Executive Director, Punjab State Council for Science & Technology, Chandigarh.
2.	Mr. Sudesh Mokhta	Director cum- Member Secretary, Himachal Pradesh Council for Science Technology & Environment, Government of Himachal Pradesh.
3.	Dr. Nasir Ahmad Shah	Joint Director/Additional Director, Jammu & Kashmir Science Technology and Innovation Council, Government of Jammu & Kashmir
4.	Dr. Rajesh Kumar Gangwar	Joint Director, Council of Science & Technology, Lucknow, Government of Uttar Pradesh
5.	Dr. Deepak Gupta	Chief Scientific Engineer, Haryana State Council for Science, Innovation and Technology, Government of Haryana
Representatives from Academia		
6.	Dr. Lovi Raj Gupta	Executive Dean , Faculty of Technology & Sciences, Lovely Professional University, Jalandhar
7.	Prof. Ashwani Pareek	Executive Director, National Agri-Food Biotechnology Institute (NABI). Mohali
8.	Smt. Sunita Goyle	Director, National Institute of Electronics & Information Technology Ministry of Electronics and information Technology, Ropar
9.	Prof. Shubhini A. Saraf	Professor and Dean (School of Pharmaceutical Sciences), Babasaheb Bhimrao Ambedkar University, Lucknow.
10.	Prof. S. K. Mehta	Professor, Department of Chemistry, Panjab University, Chandigarh and Coordinator, Chandigarh Region Innovation and Knowledge Cluster (CRIKC).
Representatives from Industry		
11.	Mr. Manish Gupta	Vice-Chairman CII, Chandigarh Office
12.	Dr. Vinay Mehta	CEO and Co-Founder, PoleVault Technologies Pvt. Ltd. & Head, Technology Transfer Office at KIIT-Technology Business Incubator

STIP 2020 Post Draft Consultation for IPR, On 23rd March, 2021, Tuesday at 3:00 PM – 4:00 PM

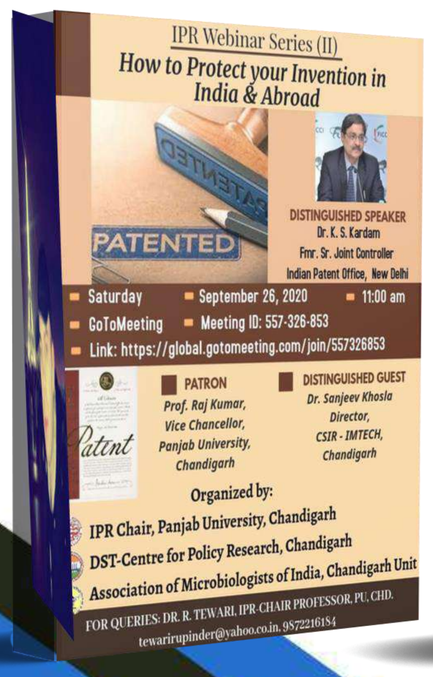
S. No.	Experts Member	Details
1.	Dr. K. S. Kardam,	Fmr. Senior Joint Controller of Patents & Designs. Patent Office Delhi, New Delhi
2.	Dr. Yashawant Dev Panwar	Scientist- E, TIFAC, Vishwakarma Bhavan 'A' wing, New Delhi.
3.	Shri Avinash Kumar	Adjunct Professor & Head IPR Cell Sharda University, Greater NOIDA Fmr. Addl Director (IPR), DRDO (HQ) Ministry of Defence, New Delhi, Govt. of India
4.	Mr. Jitin Talwar	Attorney, Patent Agent, Founder XLPAT - TT Consultants-Talwar Advocates Bestech Business Tower, Mohali
5.	Dr. Viswajanani J Sattigeri	Head CSIR - Traditional Knowledge Digital Library Unit 14, Satsang Vihar Marg, New Delhi
6.	Prof. Unnat P. Pandit	Professor Intellectual Property Management Cell Jawaharlal Nehru University, Delhi
7.	Dr. Arul George Scaria	Associate Professor National Law University, New Delhi
8.	Dr. Ruchi Sharma	Associate Professor School of Humanities and Social Sciences Indian Institute of Technology Indore Simrol, Indore

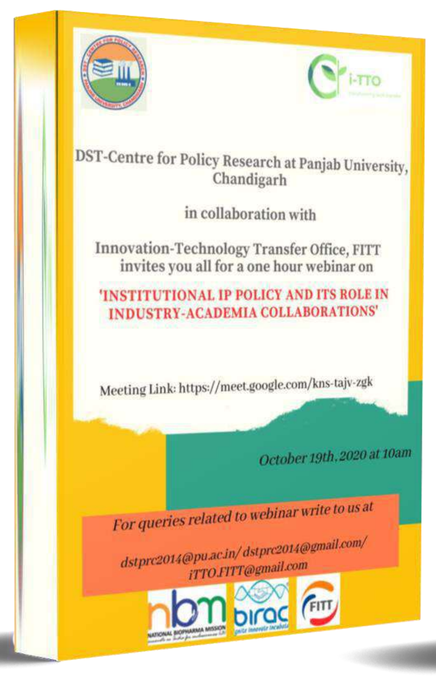
EVENTS/WEBINARS

Sl.	Date	Events/Webinar/ Keynote Speaker
1	OCTOBER 8, 2021	The Black Box - Innovation and Public Policy in India SPEAKER: Prof. Rakesh Basant, Department of Economics, IIM, Ahmedabad, Dean, Alumni and External Relations, IIM, Ahmedabad, JSW Chair Professor of Innovation and Public Policy
2	SEPTEMBER 28, 2021	Xlscout: Leverage AI to Innovate Faster SPEAKER: 1. Ms. Komal Talwar, Founder, TT Consultants & XLPAT, Mohali 2. Mr. Pranav Sharma, Chief marketing Officer, XLPAT Labs, Mohali 3. Mr. Ranjan Mukherjee, Development Manager Xlscout, Mohali
3	SEPTEMBER 18, 2021	Scope of Skill Development and Entrepreneurship in Bamboo Sector SPEAKERs: 1. Ms. Susanne Lucas, Executive Director, WBF, USA 2. Dr. Merdelyn Tauyan Caasi-Lit, Vice Chancelor for Research and Extension, University of Philippines, Los Banos Philippines 3. Dr. Sanjeev Karpe, Founder & director, Konkan Bamboo & Cane Development Center, Kudal, Maharashtra 4. Dr. Ajit Naosekpam, Independent Consultant, South East Asia, BamCore, Chandigarh 5. Dr. Natasha Saini, Asst. Professor, Abhilashi Group of Institutions, Mandi, HP 6. Dr. Oinam Santosh, Scientific Officer, DST- CPR at Panjab University, Chandigarh 7. Dr. Harjit Kaur Bajwa, Asst. Professor, UIBT-Biosciences, Chandigarh University, Mohali, India
4	SEPTEMBER 14, 2021	Development of National STI Ecosystem: Role of Public and Private Enterprises SPEAKER: Dr. Ranjana Aggarwal, Director, CSIR-National Institute of Science Communication & Policy Research, New Delhi
5	AUGUST 26, 2021	Need of a targeted Policy Framework for spurring innovation & collaborative R&D SPEAKER: Mr. Jibak Dasgupta, Director & Head, CII Naoroji Godrej Centre of Manufacturing Excellence Confederation of Indian Industry (CII), Mumbai
6	JULY 14, 2021	STI Based Public-Private Partnerships in India: Global Innovation & Technology Alliance (GITA) an exemplary PPP model SPEAKER: Mr. Rahul Kulshreshtha, Head Strategic Project Management, Global Innovation & Technology Alliance (GITA), New Delhi
7	JUNE 24, 2021	Scope and relevance of industry led Public Private Partnership for R&D in India SPEAKER: Prof. Anuradda Ganesh, Director & Chief Technical Advisor, CTIPL, Pune, Adjunct Professor, IIT Bombay, Mumbai
8	FEBRUARY 19-20, 2021	Collaborative Workshop on Science Technology and Innovation Policy for Transformative Change – SPRU & DST CPR

EVENTS/WEBINARS

Sl.	Date	Events/Webinar/ Keynote Speaker
9	FEBRUARY 3, 2021	Plant Breeders' View on Protection of Intellectual Property (IP) and Comparison of IP Protection in the Seed Sector between India and Germany SPEAKER: Mr. Dieter Rucker, Federal Association of German Plant Breeders, Bonn, Germany
10	JANUARY 25, 2021	How Strong Bamboo Policies can Help in Achieving UN Sustainable Developmental Goals SPEAKER: Ms. Susanne Lucas, Executive Director, World Bamboo Organization, Massachusetts, USA
11	JANUARY 11-15, 2021	Patent Search & Filing: The Roadway to IP Commercialization SPEAKERs: 1. Ms. Divya Kaushik, Scientist, PIC-TISC, Punjab State Council for Science & Technology, Chandigarh 2. Dr. Kavita Bansal, Patent Agent, Shodh Raksha, Mohali 3. Dr. Deepa Tiku, Partner and Practice lead Biotech Biosciences, K&S Partners, Gurugram 4. Ms. Reema Sahni, i-TTO, FITT, IIT Delhi 5. Ms. Komal Sharma Talwar, Founder, TT Consultants, Mohali 6. Mr. Pranav Sharma, Chief Marketing Officer, XLPAT Labs, TT Consultants, Mohali, Punjab 7. Ms. Pragati Aggarwal, i-TTO, FITT, IIT New Delhi 8. Dr. Rahul Kapoor, Turn IP Innovations
12	JANUARY 5, 2021	How to take Idea from Lab to Market SPEAKERs: 1.Prof. O. P. Katare, UIPS, Panjab University Chandigarh 2.Dr. Shachindra Kumar Pandey Partner, K&S Partners, Gurgaon 3.Dr. Kavita Bansal, Patent Agent, Shodh Raksha, Mohali
13	DECEMBER 13-27, 2020	Virtual Webinar Series to Promote IP Literacy in India SPEAKERs: 1.Ms. Jyoti Chauhan, Chief Manager -IPR, Dy. President-CIMSME, Mentor-Startups/MSME, Patents & Trademarks Consultant 2.Mr. Akshay Ajaykumar, Associate at Sim and San Intellectual Property Attorney 3.Mr. Shourabh Banerjee, Head-Strategic IP Consulting IIPRD, Khurana & Khurana Advocates and IP Attorneys
14	DECEMBER 9, 2020	Science Technology & Innovation – Sub National Perspective SPEAKER: Dr. Jatinder Kaur Arora, Executive Director, PSCST, Chandigarh
15	NOVEMBER 26, 2020	Researcher as the communicator for public awareness of science SPEAKER: Prof. Manoj Kumar Patairiya, Head & Adviser of Science & Engineering Research Council, DST, GoI
16	OCTOBER 19, 2020	Institutional IP Policy and its Role in Industry-Academia Collaborations SPEAKER: Ms. Reema Sahni, Project Manager, Innovation-Technology Transfer Office, FITT, IIT Delhi
17	OCTOBER 16, 2020	Role of Patent Information in Driving Research in Universities SPEAKER: Dr. Yashawant Dev Panwar, Scientist F, Head PFC, TIFAC GoI, New Delhi
18	SEPTEMBER 26, 2020	Patent Protection in India and Abroad SPEAKER: Dr. K. S. Kardam, FMR. Sr. Joint Controller, Indian Patent Office, New Delhi
19	AUGUST 14, 2020	Industry Institute Interaction- The Institute of Chemical Technology (ICT) Story SPEAKER: Dr. Padma V. Devarajan, FMAS, President Innovation Council and Member Board of Governors, ICT, Mumbai
20	JULY 31, 2020	The French Innovation Process for Technology Transfer – Funding and Guidance SPEAKER: Dr. Jean-Luc Kouyoumji, Scientist FCBA Institute of Technology, France





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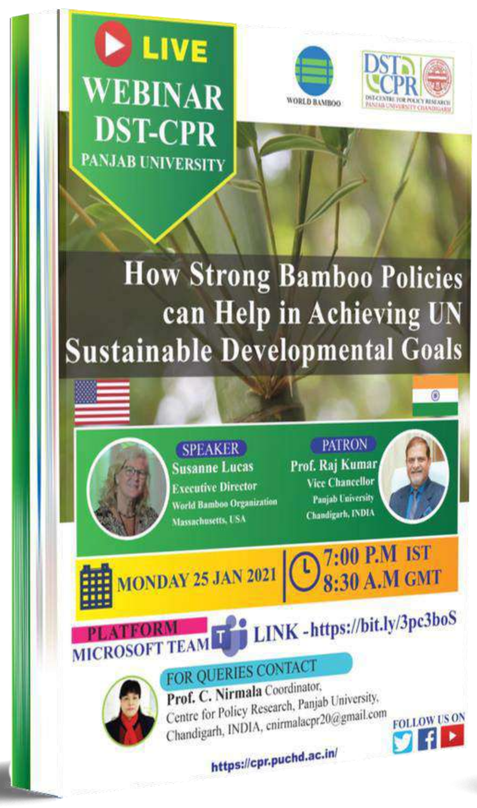
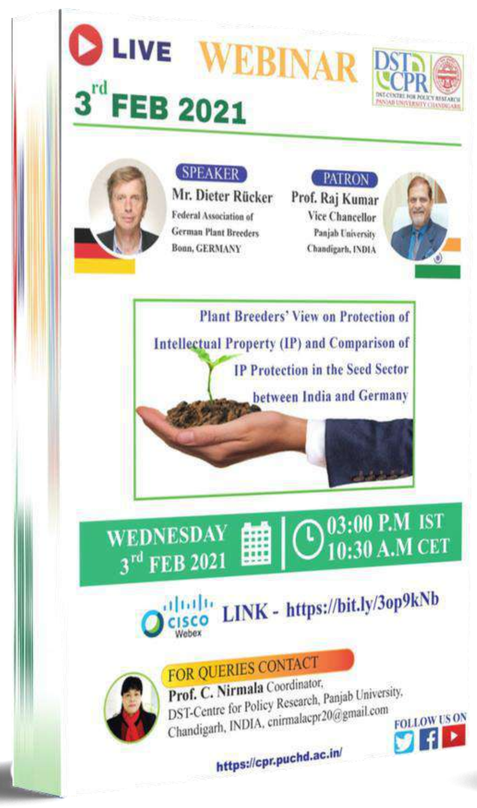
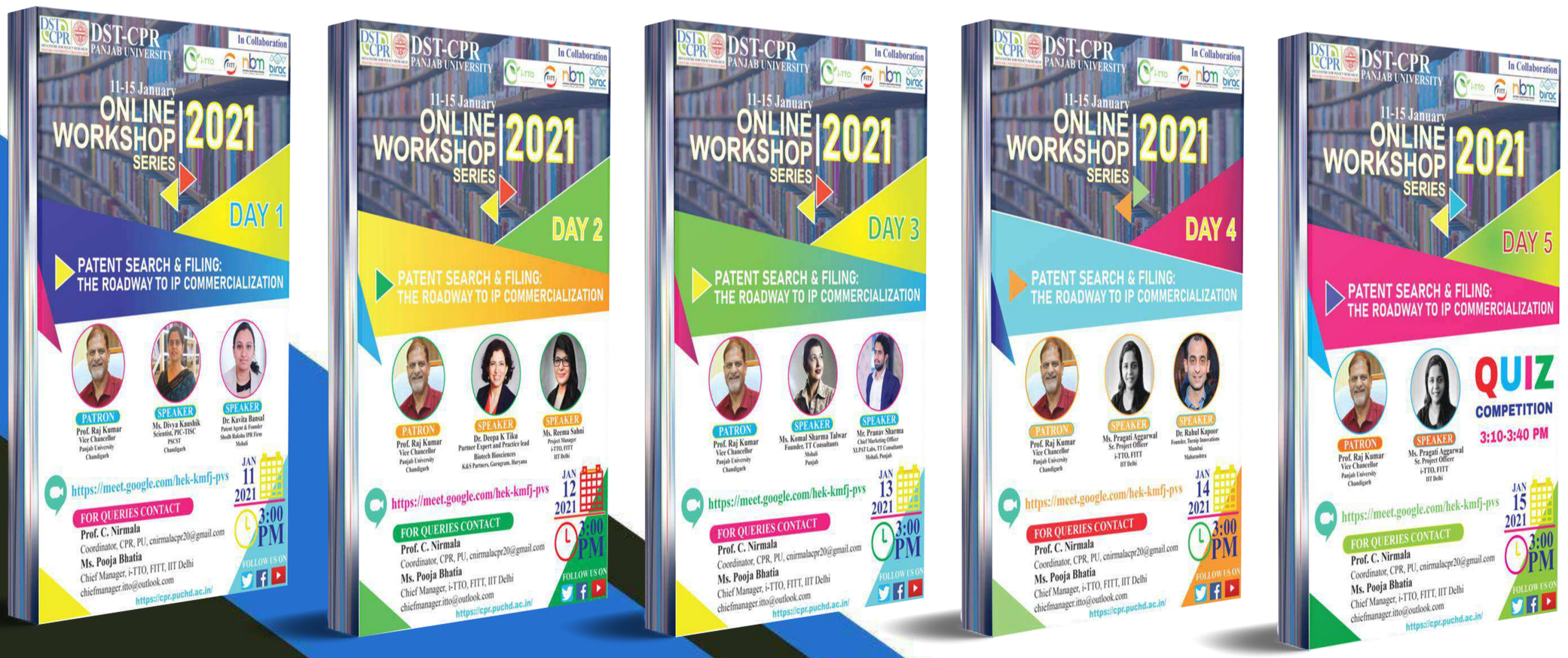




5 DAY WORKSHOP SERIES



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A COMPARATIVE ANALYSIS OF PRIVATE SECTOR R&D INCENTIVISATION: LESSONS FOR INDIA

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Abstract:

Research and Development (R&D) has become one of the essential parameters for determining national economic growth and productivity. Countries like USA, China, Japan, Germany and S. Korea, which have been spending substantially on R&D have emerged as the most innovative and technological advanced nations. India is not a major player in this domain and spends nominally (less than one percent of GDP) on R&D. In India, two-thirds of the R&D expenditure comes out of the government's kitty and the contribution of the private sector is much below par. In the present study, a comparative analysis of R&D incentive award schemes executed by India and the top ten R&D spending countries (USA, China, Japan, S. Korea, France, Russia, U.K. and Brazil) has been carried out to draw relevant lessons for India to boost private sector R&D. The study offers ways and means to stimulate private sector engagements in R&D in India.

Key Words: Tax Credits, Super Deductions, Tax Incentives, Patent Box, Research and Development

Introduction:

With the onset of the twenty-first century, the emerging need of knowledge and research-driven industries for the sustainable economic development of the nation is being widely realized. One of the major key drivers for the country's development is the generation and dissemination of scientific innovations. These innovations are the result of high-end innovative research practices undertaken by the public and the private sectors[1] (Federation of Indian Chambers of Commerce and Industry [FICCI] & Edelman India Private Limited, 2017). Developed and developing nations are continuously strengthening their national R&D ecosystem by revisiting R&D support mechanisms (Deloitte Touche Tohmatsu Limited, 2017). To enhance the competitiveness of a business, innovations have become an important driver for generating new genera of products, processes and technologies addressing socio-economic needs of the nations. Globally, most of the national governments have come up with the R&D incentivisation programs specific for the private sector in order to boost their productivity and contribution to the R&D to evolve as competitive companies (Deloitte Touche Tohmatsu Limited, 2017).

Globally, total R&D investments for the financial year 2016-17 have accounted for almost US Dollars (USD) two million in Purchasing Power Parity (PPP) and the major contributor is the private sector (Advantage Business Media [ABM] & Industrial Research Institute [IRI], 2017), primarily composed of industrial units. In most of the developed economies like USA, U.K. and emerging technological economies like China, private sector investments in R&D are almost double in comparison to the public sector's investments in R&D (ABM & IRI, 2017). On the other hand, in India two-third of R&D investments is incurred by the public sector and the rest (one-third) by the private sector (FICCI & Edelman India Private Limited, 2017). India needs to strengthen and stimulate the private sector for investing in R&D to generate more competitive companies at par with foreign companies (Gopalakrishnan & Dasgupta, 2015, pp.121-130). The Indian Government has made efforts to stimulate the investment of the private sector in R&D by introducing a tax benefit regime for private sector engaged in R&D along with funding support for pursuing R&D projects (World Bank, 2007). In spite of these efforts, the aim of the Indian government to achieve public to private investments in R&D under the one is to one range by 2017 (Department of Science and Technology [DST] & Confederation of Indian Industry [CII], 2013) is a far-off dream.

The governments of nearly forty countries across the globe are offering dedicated fiscal incentives to corporate businesses to increase their R&D strength in order to increase their productivity and growth (Deloitte Touche Tohmatsu Limited, 2017; OECD, 2015). These countries follow a set pattern of awarding incentives to private sector engaged in R&D, one, in terms of direct funding and two, through tax incentives by providing tax relief or allowance on a portion of R&D expenditure (OECD, 2015). In addition, each country has set norms for R&D incentives depending upon variables like innovation performance, industrial structure, corporate tax system, R&D growth, etc. (OECD, 2015). In countries like Germany and New Zealand, government mediated funding and subsidy support is the preferred mode for stimulating private sector R&D (OECD, 2015; Deloitte

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Comparative study of Asian economies: lessons for India

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Abstract

Purpose – This paper represents a comparative study of five Asian countries, namely, Singapore, Taiwan, South Korea, China and India, based on the Global Competitiveness Index (GCI) 2015-2016 published by the World Economic Forum. The purpose of this study is to assess India's position vis-a-vis the various comparator Asian economies and to identify areas for improvement so as to enhance India's competitiveness.

Design/methodology/approach – The study is based on the comparisons and analysis of the ranks of each country. These ranks are based on the indicators related to three categories, i.e. "Basic Requirements", "Efficiency Enhancers" and "Innovation and Sophistication" Factors. The GCI included data from internationally recognised agencies such as the IMF, the WHO and the United Nations Educational, Scientific and Cultural Organization.

Findings – On the basis of the aforementioned comparisons among these five Asian economies, it was found that Singapore (Rank-2) has made stupendous economic progress and is amongst the top five successful economies of the world. Taiwan, South Korea and China also have taken significant economic strides and are ranked globally at 15, 26 and 28, respectively. India, on the other hand, is ranked 55 out of 140 nations.

Research limitations/implications – In this paper, the countries were compared on the basis of their rank in the GCI Report 2015-2016. For an in-depth and more holistic study, comparison can be done by taking into consideration other important reports and analysis in this regard.

Originality/value – This is an original study where the developments that have taken place in the five Asian economies have been analysed based on the GCI. Most importantly, this study identifies the area/indicator in which India needs to improve to be placed among the developed nations.

Keywords China, Taiwan, India, Singapore, Global Competitiveness Index Report, South Korea

Paper type Conceptual paper

Introduction

These Asian countries are progressing at a fast pace and becoming a significant part of the global economy. Countries like, Singapore, Taiwan and South Korea (S. Korea), despite being small in size and population, have made remarkable progress in various economic parameters, and they have leap-frogged into the category of "innovation-driven economy", which was earlier dominated by Western countries such as the USA, the UK, Germany, Canada and France. Singapore has been recognised as the world's leading international financial centre; Taiwan has become the largest importer and exporter of merchandise; and S. Korea has earned the reputation of being a leading manufacturer of information technology equipment. Global think-tanks perceive that in the near future, two other Asian countries, India and China, will be the leading economies of the world, as they have all the ingredients needed for becoming economically stable nations, e.g. ample natural resources, large land and coastal areas, abundant scientists and universities, many advanced research laboratories/institutions and a young workforce. China has reformed its economic policies and is quite serious in its implementation as well. India's economic policies and mode of governance have also been reformulated, but implementation of the policies needs a fresh impetus.

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Full Length Research Article

COMPARISON OF INDIA AND CHINA BASED ON GCI INDEX: CHALLENGES AHEAD

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India,
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ABSTRACT

India and China are emerging as leading economies of the world. The robust economic growth of these two countries is largely attributed to the significant progress in the domains of science and technology. China and India share similarities in population size, market size, natural resources, investment risk and market entry barriers. In spite of these similarities, China has recently forged ahead of India both in terms of overall developmental achievements and economic growth. India has developed commendable strength in a few key areas such as space, atomic science and technology, information technology and pharmaceuticals. However, India has progressed at a slow pace *vis a vis* China. A comparative study of these two countries based on the Global Competitiveness Index (GCI) 2015-16 throws light on the crucial indicators where India and China needs to improve in order to move forward.

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INTRODUCTION

It is perceived by think tanks of the world that in near future, India and China will be the leading economies of the world. Both countries have made significant progress in the domains of science and economy. China and India share some important similarities such as, both countries became independent nations in 1940s, possess large reservoirs of natural and biological resources, huge population size, market size, investment risks and market entry barriers (Sandhya *et al.* 2014). Up to 1970s, India and China were almost similar in their overall development. However, China has recently forged ahead of India both in terms of overall science and technology achievements and economic growth. In recent decades, India has also earned repute as an emerging economy and enjoys a unique position among the developing countries. However, unsatisfactory rankings in competitiveness indicators, slow growth in the industrial sector, stunted value addition, frail Industry-Academia (I-A) collaborations are some of the chronic problems which India has to overcome. In this paper, a comparative study has been undertaken, between India and China, based on the Global Competitiveness Index (GCI) indicators associated, directly or indirectly, with the economy, health, education and research of a nation have been analyzed. GCI Reports are prepared and published by the World Economic Forum. The paper also highlights the areas in which improvement is needed by these countries for becoming a more economically stable nation.

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Rankings of India and China based on GCI

GCI is indicative of the competitive performance of nations by examining the microeconomic and macroeconomic foundations of the nation. The elements of sustainability are also taken into consideration by including social and environmental dimensions.

This paper is based on the comparative data mentioned in the latest GCI Report (2015-16). GCI takes into consideration 114 parameters, termed as indicators. These indicators have been placed in 12 sub groups, termed as pillars, which have been further grouped into 3 main categories i.e. Basic Requirements, Efficiency Enhancers and Innovation & Sophistication Factors (Fig. 1). As per GCI Report (2015-16), China and India have been ranked 28 and 55 respectively, thereby suggesting China is far ahead of India.

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Full Length Research Article

FOUNDATION FOR INNOVATION AND TECHNOLOGY TRANSFER (FITT): A CASE STUDY ON INDUSTRY–ACADEMIA INTERFACE IN INDIA

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Foundation for Innovation
and Technology Transfer (FITT),
Indian Institute of Technology (IIT),
Industry-Academia interaction,
Innovation, Public-Private Partnerships.

ABSTRACT

The Industry-Academia (I-A) research linkages are considered to be the backbone of technological innovations. In developed nations, there is a strong handshake of Research and Development (R&D) programmes of universities and industries and has led to the most impactful technological innovations of the world. However, in developing nations including India, I-A interactions have not been given due credit. In 2014, though India published over 100,000 research papers and was globally ranked 9th, it fared poorly in converting academic research into patents and transfer of technologies. It was not even ranked in the top 50 nations. The major drawback of transforming academic knowledge into commercial products is due to lack of requisite expertise/centres in the universities. However, a few Higher Education Institutes (HEI) having strong and effective I-A centres are at par with many universities of developed countries in terms of promoting entrepreneurship, start-ups, patents and technology transfers. To bring academia and industry closer to each other, India needs to set up these I-A centres in large numbers in the universities. In this paper, we present the results of a case study carried out on one of the successful I-A interface existing in India i.e. Foundation of Innovation and Technology Transfer (FITT) located in Indian Institute of Technology, Delhi (IIT-D), a premier Higher Education Institute of India. FITT runs myriad of programmes such as technology incubation facilitation centres, courses for knowledge augmentation, entrepreneurship, start ups, business management and corporate partnership of industrial sector. In the past two decades, FITT has promoted the Intellectual Property Right (IPR) prominence of IIT-D by filing more than 200 IPR applications. It has aided the licensing of ~40 technologies developed in the institute in the last 10 years. Close to 15 spin-offs have graduated and another 15 start-up companies are current residents at the incubation facility of FITT. This I-A interface has grown into a successful self-sustaining centre having plenty of financial reserves in the form of bank deposits and company shares (~ INR 356 million as of 2014-15 financial year). The establishment of centers like FITT in various universities across India will act as a catalyst for enhanced I-A activities, which will culminate into increased number of technologies/ products/ patents and thus contributing to technological advancements and strengthening of the economy of nation.

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INTRODUCTION

In 21st century, I-A collaborations have become a subject of great interest to academicians, industry leaders and policymakers, as it is now acknowledged that scientific innovations will be the key driver of the economy of the nations. For innovations of applied nature, strong research collaboration between industry and academia is imperative.

In the developed countries, universities and private sector have effective and flourishing I-A bond and many successful I-A models exist. Whereas in the developing nations, the collaboration between the academia and the industry has not been harnessed to its full capacity. India, a developing country and presumably one of the futuristic top global economy of the world, currently ranks 50th in university-industry collaboration (Global Competitiveness Report 2015-2016). It has a vast network of over 700 Higher Education Institutes (HEIs) comprising of universities, Indian Institute of Technologies (IITs) and National Institute of Technologies (NITs), Indian Institute of Managements (IIMs). It also has over 300 national

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Mapping of Research Publications and Patents Portfolio of Top 100 NIRF Engineering Institutes in India

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India	India	India
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Abstract **- Research publications and patents (granted) are two important indicators for judging the Science, Technology and Innovation ecosystem of a nation. India enjoys an impressive global ranking of 5 in the indicator of research publications as per Global Competitive Index, 2017. However, its patent applications filing is very poor viz a viz many countries including Asian countries like China, Japan and S. Korea which filed 13,38,503; 3,18,381 and 1,08,830 patent application reported by World Intellectual Property Organization, 2017. In order to boost the patent ecosystem in India, it is imperative to understand the patents and publication portfolio of Higher Education Institutes of India. In the present study, top 100 National Institutional Ranking Framework Engineering Institutes were mapped for research publications and patents (granted), in order to identify institutes performing well in domains of research publications, or patents or both. The study revealed that only a handful of institutes namely, Indian Institute of Technology (IIT)-Bombay, IIT-Madras, IIT-Delhi and IIT-Kanpur are performing satisfactorily in the domains of research article publications as well as patent generation. However, a large number of engineering institutes such as National Institutes of Technology, autonomous institutes/colleges and universities are good in the publication of research articles but have not been able to make a niche in the domain of patent generation. This limitation is being attributed to the lack of or absence of 'Translational Research Ecosystem' in their respective institutes. The translational research ecosystem of IITs can be adopted by other institutes to strengthen their patent regime. The data was also categorized on the basis of fields of specialization. The results showed that IITs are leading not only in the fields of Engineering but also have good profile in the fields of Chemical Engineering, Physics, Phrama/Drug Biotech/Food/Agriculture and Medical Sciences.**

Keywords— Engineering, IIT, NIT, Publications, Patents, Translational Research Ecosystem

I. INTRODUCTION

The 21st century is considered to be the era of knowledge and innovation in which patents and research publications occupy prominent positions as the global indicators for ranking of the world economies. Research articles reflect the academic excellence, whereas patents reflect the ability to translate fundamental research into a product/technology for commercial or societal benefits. By global standards, India's performance in publishing research articles is impressive and has been ranked among the top 5 countries in the indicator of research publications [1], but on the other hand, in terms of intellectual property rights, India fairs poorly with 45th global ranking [2]. India's record of 'Patent applications filing' is a cause of concern as it filed and processed only 45,057patents as compared to other countries such as China (13,38,503), USA (8,05,571); Japan (3,18,381)and S. Korea (1,08,830) [3]. This data is indicative of the fact that Indian scientists are more inclined towards research publications and pay less attention to convert their academic excellence into innovative products/technologies. Of late, the Indian government is planning to prepare a roadmap for stimulating translational research in the Higher Education Institutes (HEIs), for generation of more patents, which can be licensed out to industry for economical and societal gains. The Indian Higher Education system is composed of over 900 institutes comprising of 837 universities and 91 Institutes of National Importance (INIs) including Indian Institutes of Technology (IITs) and National Institutes of Technology (NITs). The first and foremost step in this direction is to map HEIs for their number of research publications and patents. Such a study will yield important data about institutes excelling in translational research, which can act as models for institutes producing only large number of research publications but generate less or no patents.

The Department of Science and Technology (DST)-Centre for Policy Research (CPR) at Panjab University (PU), Chandigarh undertook a task of mapping the publications and patent profiles of top 100 engineering institutes in accordance with National Institutions Ranking Framework (NIRF) published in 2016 [4]. NIRF is published by Ministry of Human Resource and Development (MHRD), Government of India to rank the Indian Institutions of Higher Education on the basis of quality of education and research.

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Working/non-working status of patents granted to HEIs and NRLs in India

Mamta Bhardwaj and Amandeep Sandhu*

The era of knowledge economy has seen a transition in the business market, from the need to control raw materials towards the protection of ideas, either as tangible or non-tangible assets. These assets may be secured in the form of various intellectual property (IP) instruments such as patents, know-how or technologies. These IP instruments (patents) not only give the IP owners (patentees) a monopoly over the use of their ideas/inventions, but also mandate them to commercially exploit the same for the benefit of the population at large. While economically developed countries (like China, USA, South Korea, Japan, etc.) appreciate this fact, developing countries like India are yet to make their mark in this transition; thus it is imperative to evaluate the IP landscape of the country. It is well acknowledged that major contributors to fundamental research in any country are the higher educational institutions (HEIs) and national research laboratories (NRLs). Hence, this study evaluates the patent commercialization ecosystem of Indian HEIs (351) and NRLs (553) for the period January 2010 to December 2017, based on the working statements filed by the patentees/assignees in the prescribed Form-27 at the Indian Patent Office.

Keywords: Granted patents, higher educational institutions, knowledge economy, national research laboratories.

UNIVERSITIES and higher educational institutions (HEIs) are the two founding pillars of a nation's economy. An academic institution is deemed successful if the knowledge imparted to its students finds its way as a tangible or non-tangible property through innovation. Further, with increase in value being assigned to 'patents filed', 'patents granted', 'patents commercialized', etc. during the rankings of institutions, it has become imperative for academic institutions to shift their focus towards innovation-oriented results. Although considering only patents generation to analyse the technological advancement or innovation index of a nation may not be appropriate, countries giving more emphasis to open science and innovation are leading in technological advancement as well.

The policy-makers and intellectual think-tanks consider that the main focus of universities and HEIs in India is to publish their research instead of securing it through patents. According to the SCImago Country Ranking[1] India ranks fifth in research publications, whereas it is ranked at 50th position in 'Intellectual Property Rights' (IPR)[2]. The country has the third largest education system, after USA and China. However, the academic fraternity in India focuses mainly on imparting knowledge to students with less interest in converting that knowledge into a commercial commodity. This scenario can be attributed to the lack of entrepreneurial system with some vital voids in governmental or institutional level policies/guidelines. Moreover, while countries like China, Singapore, Japan, USA, South Korea, Germany, Canada and Australia give equal importance to both research publications and patents generation, Indian academic institutions limit themselves mainly to research publications. However, the scenario is now changing in the country with the implementation of the National IPR Policy[3] and introduction of model guidelines on the implementation of IPR policy for academic institutions[4]. Recently, the Ministry of Education, Government of India (GoI) has announced a new policy on higher education[5] and proposed the establishment of National Research Foundation (NRF) to enable a culture of research to permeate through universities and HEIs.

The Department of Science and Technology (DST)-Centre for Policy Research (CPR; hereafter 'Centre') had earlier conducted a study on research publications and status (granted and filed) of patents of 904 institutions in India (HEIs (351) + national research laboratories (NRLs) (553))[6]. Here, the study has been extended further to assess the commercialization ecosystem in Indian academic and research institutions. The Centre has compiled data on working and non-working status of patents granted to the aforementioned institutions during the last eight years (January 2010–December 2017). Figure 1 provides the break-up of 904 institutes considered in this study.

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DST CPR PU IN THE NEWS

Hindustan Times

INDIAN INSTITUTES ARE LAGGING IN PATENT GENERATION FINDS STUDY

HT Correspondent

chandigarh@hindustantimes.com

CHANDIGARH: A study conducted by the scientists of DST-Centre for Policy Research at Punjab University, has revealed that Indian higher educational Institutions (HEIs) are doing well in research publications but lagging in patent generation and its commercialization.

The study authored by Mamta Bhardwaj and Amandeep Sandhu has been published in current Science this month. It puts into the spotlight the need to sensitizes researchers in HEIs and universities about the technology readiness level and translational research eco-system.

According to organizations such as the Council of Scientific Industrial Research (CSIR) Defense Research and Development Organization (DRDO), Indian Spacer Research organizations (ISRO) and Indian council of Agricultural Research (ICAR) and first-generation Indian Institutions of Technology (IITs in Bombay, Madras and Kanpur) have good Patent commercialization profile.

The study revealed that the CSIR an autonomous and Publicly funded Research organization leads the chart in with a total of 863 Patents (in India Only) and has a share of 44% of the total granted Patents for the period 2010-17 The DRDO. Dedicated to Research for the military under the defense ministry is the second with 308 Patents followed by IIT Bombay with 76 patents

North region's post-draft STIP consultation tomorrow

CHANDIGARH: Centre for Policy Research at Panjab University is hosting a post-draft Science, Technology, and Innovation Policy (STIP) consultation with the representatives of government, academia and industry from the northern region on Thursday. The consultation is being hosted to deliberate on the policy draft and get suggestions and inputs. The key recommendations of the 5th National Science, Technology and Innovation Policy will be presented by Dr Akhilesh Gupta, adviser and head, STIP Secretariat. HTC

The Tribune

28 JANUARY 2021

Study finds patent regime abysmal

Only handful of organizations & first-gen IITs has good patent commercialists profile

TRIBUNE NEWS SERVICE

CHANDIGHAR JANUARY 27

Scientists from DST-Centre for Policy Research Panjabi University (PU) have conducted a study on patents commercialization profile of 904 institution comprising Indian higher education instep tuitions(HEIs) and national research laboratories (NRLs).

The study has been authored by scientist-C Mam ta Bhardwaj and scientific officer Amandeep Sandhu The study is first of its kind in the country in which patent commercialization of HEIs and NRLs has been exam lined and published in current Science on January 10.

DATA BASED ON STATEMENTS OF PATENTEE

Year	In Force (Active)	Forms-27 Filed by the patentee	Working patents	Not-working patents	%age of working patents
2010	473	19	7	12	37%
2011	630	21	2	19	10%
2012	740	29	5	24	17%
2013	808	602	89	513	15%
2014	827	665	164	501	25%
2015	968	838	168	670	20%
2016	1075	928	204	724	22%
2017	1215	1037	201	836	20%
2018	983	566	205	361	36%

The Council of Scientific and Industrial Research (CSIR) Ideas the chart with 863 Patents granted (in India only)and has 44% share of the total granted Patents for The period2010 -17.

The Defense Research and Development Organization (DRDO) is at the second position with 308 Patents fool-lowed by Indian Institute of Technology (IIT) Bombay with 76 patents.

The study has been com piled based on working/ non-working statements submit ted by patents in the prescribed Form 27'of the Indian Patent Office.

The study reveals that only a handful of organizations and first generation IITs like the CSIR, New Delhi: DRDO, New Delhi: ISRO, Bangalore; ICAR, New Delhi; DBT, New Delhi; CDAC, Pune; ICMR, New Delhi; DIT, New Delhi and IIT Bombay IIT Madras and IIT Kanpur have good patent commercialization profile.

Indian HEIs are doing well in research publications but lagging in Patents genera ton and its commercialism ton In the study it has been found that Indian Patentees do not take submitting of the Form 27. Seriously More over reasons mentioned for the non-working status are unconvincing.

The abysmal patent regime in India is the result of the lack of awareness among Inventors/researchers and the absence of dedicated PPR/tech transfer Policies Most Prominent is the lack of awareness and those who are aware are hesitant in filing Patent as the Process is time consuming and costly for an individual.

अमर उजाला

28 JANUARY 2021

खुलासा

पीयू स्थित सेंटर फॉर पॉलिसी के दो वैज्ञानिकों ने किया यह शोध, डीएसडी को भेजी रिपोर्ट

904 शोध संस्थानों ने 8 साल में 1961 पेटेंट करवाए, पर समाज को नहीं दे पाए लाभ

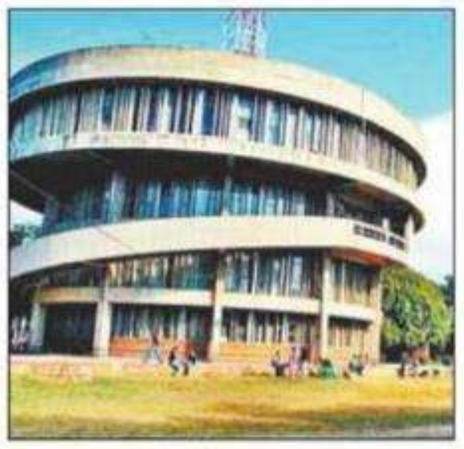
माई सिटी रिपोर्टर

चंडीगढ़। पंजाब यूनिवर्सिटी स्थित सेंटर फॉर पॉलिसी की दो वैज्ञानिकों ने अपने शोध में बड़ा खुलासा किया है। उन्होंने शोध में बताया है कि 904 शोध संस्थानों ने आठ साल में 1961 पेटेंट करवाए, लेकिन उनको कॉमर्शियल नहीं करवा पाए यानी उनका शोध समाज के विकास में काम नहीं आ सका, जबकि एजेंसी और सरकारों के जरिए जो शोध फंड मिलता है, उस शोध के जरिए समाज आदि को लाभ पहुंचाना होता है।

हालांकि, 904 संस्थानों में से 20 फीसदी ने कॉमर्शियल प्रयोग के लिए फार्म 27 भरा है। हैरत की बात यह है कि भारत सरकार में बैठे कंट्रोलर जनरल कार्यालय की ओर से इनके खिलाफ कोई कार्रवाई अमल में नहीं लाई गई, जबकि नियमों का उल्लंघन करने पर छह साल की सजा और दस लाख रुपये तक जुर्माना भी डाला जाता है।

ममता भारद्वाज

अमनदीप संधू



इस तरह आगे बढ़ा शोध

सेंटर फॉर पॉलिसी की वरिष्ठ वैज्ञानिक ममता भारद्वाज, यहीं पर काम कर चुकीं साइंटिफिक ऑफिसर अमनदीप संधू ने देशभर के 904 संस्थानों के पेटेंट व उनकी वर्तमान स्थिति पर शोध किया। इसमें 351 हायर एजुकेशन इंस्टीट्यूट व 553 नेशनल रिसर्च लैब को शामिल किया गया। रिसर्च टीम ने वर्ष 2010 से लेकर दिसंबर 2017 तक के पेटेंट इन शिक्षण संस्थानों के देखे। आठ साल में 1961 पेटेंट जारी किए गए, जिनमें से 20 से 22 फीसदी ही संस्थानों ने इनका कॉमर्शियल प्रयोग के लिए फार्म 27 भरा। पेटेंट मिलने के बाद कॉमर्शियल प्रयोग बहुत जरूरी है ताकि समाज को उस शोध से लाभ मिल सके।

यह पाया शोध में..

शोध में पाया गया है कि यूनिवर्सिटी व अन्य शिक्षण संस्थान केवल रिसर्च व पेटेंट लेने तक ही काम कर रहे हैं। उसके आगे की तैयारी नहीं करते। ईंडिया पेटेंट ऑफिस की वेबसाइट से लिए गए डाटा से यह भी सामने आया है कि पेटेंट आदि करवाने के बाद संस्थान आगे की कार्रवाई न करने से वह पिछड़ रहे हैं। आईआईटी कानपुर, मुंबई व मद्रास में पेटेंट के ऊपर बेहतर कार्य हो रहा है। सीएसआईओ, आईसीआरओ, सीएसआईआर, इसरो आदि संस्थान भी मानकों का पालन कर रहे हैं। शोध टीम ने यह भी देखा कि नियमों का उल्लंघन करने वाले शिक्षण संस्थानों पर कितनी कार्रवाई हुई, जिसमें पाया कि अधिकांश पर कोई कार्रवाई अमल में नहीं लाई गई। शोध में कई अन्य खुलासे भी हुए हैं। इसकी रिपोर्ट केंद्र सरकार के डिपार्टमेंट ऑफ साइंस एंड टेक्नोलॉजी नई दिल्ली को भेजी गई है।

चंडीगढ़ भास्कर

9 JANUARY 2021

बातचीत• पंजाब यूनिवर्सिटी के डीएसटी सेंटर फॉर पॉलिसी रिसर्च की सीनियर पॉलिसी फैलो डॉ. राधिका बोलीं-

लीडरशिप में महिलाओं को मौके और कमेटियों में बराबर रिप्रेजेंटेशन की सिफारिश करती है एसटीआई

एजुकेशन रिपोर्टर | चंडीगढ़

किसी भी अन्य काम के मुकाबले अगर साइंस की बात की जाए तो यहां पर लीडरशिप के रोल में महिलाओं की बहुत ज्यादा कमी है। यही वजह है कि भारत की पांचवीं नेशनल साइंस टेक्नोलॉजी एंड इनोवेशन पॉलिसी (स्टिप) में इस बात पर खास जोर दिया गया है कि सभी सलेक्शन और इवैल्यूएशन कमेटियों में महिलाओं की भागीदारी को बढ़ाया जाए।

यह बताती हैं पंजाब यूनिवर्सिटी के डीएसटी सेंटर फॉर पॉलिसी रिसर्च की सीनियर

• भारत की जरूरतों को ध्यान में रखकर बनाई जानी थी पॉलिसी... राधिका त्रिखा बताती हैं कि पॉलिसी खासतौर पर भारत की जरूरतों को ध्यान में रखकर ही बनाई जानी थी। आत्मनिर्भर भारत का सपना पूरा करने के लिए इसमें ट्रेडिशनल नॉलेज सिस्टम को बढ़ावा देने और ग्रास रूट इन्नोवेटर्स को प्रमोट करने की बात है। उनका मानना है कि एक ओपन साइंस फ्रेमवर्क होना चाहिए। फिलहाल अलग-अलग डिपार्टमेंट अपने काम या अपने एरिया से संबंधित रिसर्च को ऑनलाइन प्लेटफॉर्म पर देते हैं। यह बहुत ही लिमिटेड सा एरिया है लेकिन एक ऐसा मंच होना चाहिए जहां पर साइंस के हर विषय से जुड़ी हर तरह की रिसर्च उपलब्ध हो और यह भारत में बैठक कोई भी व्यक्ति कहीं पर भी देख सकता है। पब्लिक फंडिड रिसर्च को एक डेडिकेटेड पोर्टल पर उपलब्ध कराने की योजना इसके तहत बनाई गई है। अभी तक सिर्फ दो डिपार्टमेंट अपनी रिसर्च को ओपन करते हैं और अलग-अलग पीएचडी भी शोधगंगा पर डाले जाने का नियम है लेकिन सभी इंस्टीट्यूट इसका पालन नहीं करते। भारत के माहौल को देखते हुए महिलाओं के लिए समान पक्के का एक हिस्सा रखा गया है। सिर्फ महिलाएं ही नहीं बल्कि ग्रामीण एरिया के कैंडिडेट, मार्जिनलाइज्ड कम्युनिटी, दिव्यांग आदि को बराबर अवसर दिया जाए। ऐसे लोगों का सेलेक्शन और इवैल्यूएशन कमेटियों में भी योगदान होना चाहिए। इसमें लोकल स्तर पर एलिमेंट और कल्चर के अनुसार पेसिफिक मॉडल बनाने की भी बात है। इसका मकसद है फुल टाइम रिसर्च एस की संख्या दोगुना करना, रिसर्च एंड डेवलपमेंट पर ग्रॉस डोमेस्टिक एक्सपेंडिचर को बढ़ाना और प्राइवेट सेक्टर कंट्रीब्यूशन को भी बढ़ाना।

कि लॉकडाउन पीरियड में भी इस पॉलिसी के लिए लगातार काम चलता रहा। हालांकि महामारी के दौर में काम आसान नहीं था

उनके साथ पोस्टडॉक्टोरल फैलोशिप ईरान ने भी इस पॉलिसी के लिए काम किया है। स्टोर के सेक्रेटेरिएट में इस तरह की 25

है जिसमें हर रीजन, उम्र, लिंग, शिक्षा, आर्थिक स्थिति आदि

DST CPR PU IN THE NEWS

पंजाब यूनिवर्सिटी में विज्ञान प्रौद्योगिकी और नवाचार पर वेबिनार आयोजित

चंडीगढ़। नीति निर्माताओं, शिक्षाविदों और शोधकर्ताओं को प्रौद्योगिकी हस्तांतरण, व्यावसायीकरण और विभिन्न सार्वजनिक–निजी–साझेदारी (पीपीपी) मॉडल के बारे में जागरूक करने के लिए, डीएसटी– सेंटर फॉर पॉलिसी रिसर्च (सीपीआर), पंजाब विश्वविद्यालय, चंडीगढ़ ने भारत में विज्ञान प्रौद्योगिकी और नवाचार (एसटीआई) आधारित सार्वजनिक–निजी भागीदारी– वैश्विक नवाचार और प्रौद्योगिकी गठबंधन (जीआईटीए) एक अनुकरणीय पीपीपी मॉडल थीम पर एक वेबिनार का आयोजन किया। राहुल कुलश्रेष्ठ, हेड, स्ट्रैटेजिक प्रोजेक्ट मैनेजमेंट, ग्लोबल इनोवेशन एंड टेक्नोलॉजी एलायंस (जीआईटीए), नई दिल्ली ने ग्लोबल इनोवेशन सिस्टम की तुलना में हमारे देश की वर्तमान नवाचार प्रणाली में अंतराल को कम करने के लिए निभाई गई अनिवार्य भूमिकाओं पर प्रकाश डाला। **GITA** प्रौद्योगिकी विकास बोर्ड (**TDB**), भारत सरकार और भारत के शीर्ष औद्योगिक संघ भारतीय उद्योग परिसंघ (**CII**) की भागीदारी से पीपीपी मोड के तहत स्थापित एक संगठन है। संयुक्त उद्यम परियोजनाओं के वित्त पोषण, क्षमता निर्माण और स्थायी पारिस्थितिकी तंत्र बनाने पर ध्यान केंद्रित कर रहा है, जबकि आर एंड डी प्रभावकारिता बढ़ाने और उसी के लिए विभिन्न हितधारकों के बीच जागरूकता फैलाने के लिए सरकारी नीतियों के लचीलेपन को प्राप्त करने के लिए विभिन्न बाधाओं की पहचान करता है।

Demokratic Front

DST, CPR, PU, a part of STIP

January 4, 2021 / 0 Comments / in CHANDIGARH, EDUCATION, HARYANA, HIMACHAL, MOHALI, PANCHKULA, PUNJAB, STATES, TRICITY, UNIVERSITY / by Demokratic Front Bureau

The Department of Science and Technology (DST), Centre for Policy Research, Panjab University, Chandigarh has been involved in the drafting of the recently released Science, Technology, and Innovation Policy Draft, a landmark policy initiative to strengthen India's National STI ecosystem and to make it globally competitive.

The 5th national STI policy revolves around its core principles of being decentralized, evidence-informed, bottom-up, experts-driven, and inclusive. The objective of the policy is to identify and address strengths and weaknesses of the Indian STI ecosystem to catalyse socio-economic development of the country and also make the Indian STI ecosystem globally competitive.

Dr Radhika Trikha, Senior Policy Fellow and Dr Sheeraz, Post-Doctoral fellow from DST-Centre for Policy Research at Panjab University have been a part of this initiative under the STIP Secretariat-S25 team. The STIP Draft is open for public feedback, suggestions, and comments and DST, CPR, Panjab University invites valuable suggestions, comments, and inputs on the policy draft to make policy formulation truly inclusive

पंजाब यूनिवर्सिटी में विज्ञान प्रौद्योगिकी और नवाचार पर वेबिनार आयोजित

» मदरलैंड संवाददाता

चंडीगढ़। नीति निमार्ताओं, शिक्षाविदों और शोधकताओं को प्रौद्योगिकी हस्तांतरण, व्यावसायीकरण और विभिन्न सार्वजनिक-निजी-साझेदारी (पीपीपी) मॉडल के बारे में जागरूक करने के लिए, डीएसटी- सेंटर फॉर पॉलिसी रिसर्च (सीपीआर), पंजाब विश्वविद्यालय, चंडीगढ़ ने भारत में विज्ञान प्रौद्योगिकी और नवाचार (एसटीआई) आधारित सार्वजनिक-निजी भागीदारी: वैश्विक नवाचार और प्रौद्योगिकी गठबंधन (जीआईटीए) एक अनुकरणीय पीपीपी मॉडलह्न थीम पर एक वेबिनार का आयोजन किया। राहुल कुलश्रेष्ठ, हेड, स्ट्रैटेजिक प्रोजेक्ट मैनेजमेंट, ग्लोबल इनोवेशन एंड टेक्नोलॉजी एलायंस (जीआईटीए), नई दिल्ली ने ग्लोबल इनोवेशन सिस्टम की तुलना में हमारे देश की वर्तमान नवाचार प्रणाली में अंतराल को कम करने के लिए निभाई गई अनिवार्य भूमिकाओं पर प्रकाश डाला। ऋकळअ प्रौद्योगिकी विकास बोर्ड (ळऊइ), भारत सरकार और भारत के शीर्ष औद्योगिक संघ भारतीय उद्योग परिसंघ (उकक) की भागीदारी से पीपीपी मोड के तहत स्थापित एक संगठनहै।संयुक्तउद्यमपरियोजनाओं के वित्त पोषण, क्षमता निर्माण और स्थायी पारिस्थितिकी तंत्र बनाने पर ध्यान केंद्रित कर रहा है, जबकि आर एंड डी प्रभावकारिता बढ़ाने और उसी के लिए विभिन्न हितधारकों के बीच जागरूकता फैलाने के लिए सरकारी नीतियों के लचीलेपन को प्राप्त करने के लिए विभिन्न बाधाओं की पहचान करता है।

पंजाब यूनिवर्सिटी में विज्ञान प्रौद्योगिकी और नवाचार पर वेबिनार आयोजित

ह्यूमन इंडिया/ब्यूरो

चंडीगढ़। नीति निर्माताओं, शिक्षाविदों और शोधकर्ताओं को प्रौद्योगिकी हस्तांतरण, व्यावसायीकरण और विभिन्न सार्वजनिक-निजी-साझेदारी (पीपीपी) मॉडल के बारे में जागरूक करने के लिए, डीएसटी- सेंटर फॉर पॉलिसी रिसर्च (सीपीआर), पंजाब विश्वविद्यालय, चंडीगढ़ ने भारत में विज्ञान प्रौद्योगिकी और नवाचार (एसटीआई) आधारित सार्वजनिक-निजी भागीदारी: वैश्विक नवाचार और प्रौद्योगिकी गठबंधन (जीआईटीए) एक अनुकरणीय पीपीपी मॉडल थीम पर एक वेबिनार का आयोजन किया। राहुल कुलश्रेष्ठ, हेड, स्ट्रैटेजिक प्रोजेक्ट मैनेजमेंट, ग्लोबल इनोवेशन एंड टेक्नोलॉजी एलायंस (जीआईटीए), नई दिल्ली ने ग्लोबल इनोवेशन सिस्टम की तुलना में हमारे देश की वर्तमान नवाचार प्रणाली में अंतराल को कम करने के लिए निभाई गई अनिवार्य भूमिकाओं पर प्रकाश डाला। GITA प्रौद्योगिकी विकास बोर्ड, भारत सरकार और भारत के शीर्ष औद्योगिक संघ भारतीय उद्योग परिसंघ की भागीदारी से पीपीपी मोड के तहत स्थापित एक संगठन है। संयुक्त उद्यम परियोजनाओं के वित्त पोषण, क्षमता निर्माण और स्थायी पारिस्थितिकी तंत्र बनाने पर ध्यान केंद्रित कर रहा है, जबकि आर एंड डी प्रभावकारिता बढ़ाने और उसी के लिए विभिन्न हितधारकों के बीच जागरूकता फैलाने के लिए सरकारी नीतियों के लचीलेपन को प्राप्त करने के लिए विभिन्न बाधाओं की पहचान करता है। प्रो. राजेश गिल, डीन रिसर्च ने अपने संबोधन में पीपीपी मॉडल पर एक घंटे की आवश्यकता का उल्लेख किया ताकि सामाजिक प्रभाव के साथ अनुसंधान परियोजनाओं की प्रतिकृति और कार्यान्वयन के लिए उद्योगों के साथ तालमेल बिठाया जा सके। पंजाब विश्वविद्यालय चंडीगढ़ में डीएसटी-सीपीआर की समन्वयक प्रो. निर्मला चोंगथम ने वैश्विक रैंकिंग के बीच भारत को जोड़ने में सक्षम बनाने के लिए शिक्षाविदों, शोधकर्ताओं और उद्योगपतियों की टीम वर्क के महत्व पर जोर दिया। उन्होंने यह भी कहा कि फंडिंग एजेंसियों को भी कभी-कभी ब्रांड नामों के माध्यम से प्रोत्साहन मिलता है और नए विचारों को स्वीकार करने में जोखिम भरे व्यवहार से बचते हैं।

THE AMERICAN BAZAAR

Diaspora key to success of India's new Science, Technology, Innovation Policy

By Rajesh Mehta January 17, 2021 12:58 pm

By Rajesh Mehta and Badri Narayanan Gopalakrishnan

As India and the world reorient in the present context of the covid-19 crisis, a new **Science, Technology, and Innovation Policy** (STIP) was initiated at this crucial juncture during mid-2020. The emergence of disruptive and impactful technologies poses new challenges and simultaneously greater opportunities. The Covid-19 pandemic unexpectedly to an extent provided a compelling opportunity for R&D institutions, academia and industry to work in unison for sharing of purpose, synergy, collaboration and cooperation.

It is almost impossible to have a well-rounded discussion about India's growth story without pooling in the role of the Indian diaspora. Standing at 32 million and comprising NRIs (Non-Resident Indians) and PIOs (Persons of Indian Origin), India has one of the largest diasporas in the world. The role of Indian diaspora in the success of new STIP is important.

Unlike previous STI policies, which were largely top-driven in terms of their formulation, the 5th National STI policy revolved around its core principles of being decentralized, evidence-informed, bottom-up, experts-driven, and inclusive. According to Dr. Ashutosh Sharma, Secretary at the Department of Science & Technology, "The aim of draft STIP will create an end to end science, technology and innovation ecosystem, which is inclusive and brings equal benefits to all stakeholders in the process".

The Science, Technology and Innovation Policy has been guided by the following broad vision:

(i) To achieve *technological self-reliance* and position India among the top three scientific superpowers in the decade to come;

(ii) To *attract, nurture, strengthen and retain critical human capital* through a "people centric" science, technology and innovation (STI) ecosystem;

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MIRROR 365

Webinar on Science Technology and Innovation at PU

By **admin@webkrafts** - July 14, 2021 12

Chandigarh July 14, 2021

Webinar on Science Technology and Innovation at PU

To sensitize policy-makers, academicians and researchers, about technology transfer, commercialization and various Public-Private-Partnership (PPP) models, DST-Centre for Policy Research (CPR), Panjab University, Chandigarh organized today a webinar on the theme of "Science Technology and Innovation (STI) Based Public-Private Partnerships in India: Global Innovation & Technology Alliance (GITA) an exemplary PPP model".

Mr. Rahul Kulshreshtha, Head, Strategic Project Management, Global Innovation & Technology Alliance (GITA), New Delhi highlighted the imperative roles played by GITA, to obviate the gaps in the current innovation system of our country in comparison to the Global innovation system. GITA is an organization set up under PPP mode by partnering of Technology Development Board (TDB), Government of India and India's apex industrial association Confederation of Indian Industry (CII). The joint venture is focusing on funding projects, capacity building and creating sustainable ecosystems, while identifying various bottlenecks to attain flexibility of government policies for enhancing R&D efficacy and spreading awareness among various stakeholders for the same.

Prof. Rajesh Gill, Dean Research, in her address mentioned an hour's need of ventures on PPP models to have synergy with industries for having replica and implementation of research projects with a social impact.

Prof. Nirmala Chongtham, Coordinator, DST-CPR at Panjab University Chandigarh emphasized the significance of teamwork of academicians, researchers and industrialists for enabling =PPP in plugging India amongst global rankings. She also added that funding agencies also sometimes get incentivized through brand names and avoid risky behaviour in accepting novel ideas, which acts as a gap in proliferating an innovative project.

A significant view on exploring PPPs for revamping Indian STI terrain was shared by Dr. Rakesh Tuli, Senior Research Advisor & J C Bose Fellow, Panjab University, Chandigarh and Dr. Shishir Shrotriya, Councillor of S&T, Embassy of India, Moscow Russia.

The webinar was attended by faculty members, researchers of the university and industry people. The webinar aimed at motivating and guiding Indian r academicians, industries and entrepreneurs about the significance of P scientific innovations.

WAY FORWARD/FUTURE ACTIVITIES

Vision For 2022-2023

VISION 2022-2023

01 **DST-CPR at PU, Chandigarh aims at being a Nodal Centre for STI Policy Research for the Northern Region in a hub and spoke model under the guidance of DST, New Delhi. GoI.**

02 **Provide evidence base for Science, Technology and Innovation Policy formulation and Research framework in India**

03 **Creation of Virtual STI Policy Institute.**

04 **Building capacity in IP through trainings and workshops/online courses.**

STAFF DETAILS

Prof. Kashmir Singh, Coordinator

Dr. Kashmir Singh is Professor and Chairperson in the Department of Biotechnology, and the Coordinator, DST- Centre for Policy Research, Panjab University, Chandigarh. He has over 16 years of teaching and research experience. He has vast international exposure and worked as Marie Curie post doc fellow in Adam Mickiewicz University, Poland. Research associate, Missouri State University, USA and visiting scientist, McGill University, Canada. He has authored more than 100 national and international publications and editor of reputed international journals. He has been running and completed over 14 Research Projects funded by agencies like DBT, DST, SERB, CSIR and ICAR. He has produced over 21 Ph.D. students. He is having an active association with different societies and academies around the world. Dr. Kashmir Singh made his mark in the scientific community with the contributions and widely recognition from honourable subject experts around the world. Received several awards for the contributions to the scientific community. Dr. Kashmir Singh major research interest involves Plant Genetic Engineering and Biotechnology.

Prof. C. Nirmala, Fmr. Coordinator

Dr. Nirmala Chongtham is a Professor in the Department of Botany, Panjab University, Chandigarh and the Coordinator, DST- Centre for Policy Research, Panjab University. She did her postdoc in Biotechnology and Genetic engineering from Department of Molecular Genetics, University of Hannover, Germany. She was involved in making recommendations for the 5th National Science and Innovation Policy draft and also drafting policies regarding bamboo shoot industries to assist in developing strategies and roadmap for the development of circular economy in the bamboo sector in India in conjunction with NITI Aayog, Vigyan Bhawan, New Delhi, North-Eastern Development Finance Cooperation Limited (NEDFi) and North East Centre for Technology Application and Reach (NECTAR), Guwahati, Assam. She has been awarded research grants from University Grants Commission, Department of Science and Technology, Department of Biotechnology and Ministry of Food Processing Industries, Govt. of India and has published more than 120 research papers in National and International journals.

In recognition of her work in bamboos, she was selected as the World Bamboo Ambassador from India by the World Bamboo Organization, USA in 2015. She served as Chair of the Technical Committee of the 10th World Bamboo Congress Korea in 2015 and 11th WBC Mexico. She has travelled widely to deliver keynote and invited lectures in several countries of Europe, North America, South America and Costa Rica and also in many states of India. She is a recipient of a grant from the Ned Jaquith Foundation and American Bamboo Society (USA) to aid her ongoing research on nutritional and health benefits of bamboos and how the usage of bamboo shoots can help in the economic development of society, food and nutritional security, especially in rural areas. She has published a book recently titled “Bamboo shoots: Superfood for Nutrition, Health and Medicine” by CRC Press, USA, which is available on Amazon, https://www.amazon.com/Bamboo-Shoot-Superfood-Nutrition-Medicine/dp/0367467410

Prof. Manmohan Gupta, Co-cordinator

After having a very brilliant academic record at Panjab University, Prof Gupta, did his PhD under the renowned Professor Asoke N Mitra at University of Delhi and did his post- doctoral work with Nobel Laureate Professor Sheldon Lee Glashow at Harvard University, USA. For the last four decades, Professor Gupta has been associated with PU as a faculty member and at present continues as Professor Emeritus. Professor Gupta is internationally known and well recognized scientist in the field of Hadronic and Flavor Physics, wherein he has made several important contributions at the fundamental level. He has more than 100 publications in journals of international repute with more than 1500 citations many of these by well known scientists in the area of his research activity. He has been a distinguished speaker in many of the prestigious international conferences.

Apart from being passionate about research and teaching, Prof Gupta is also committed towards the overall academic growth of the university. In fact, he has played crucial role in university’s recent innovative initiatives, viz., creation of Chandigarh Region Innovation and Knowledge Cluster (CRIKC) as well as Centre for Policy Research (CPR) sponsored by Department of Science and Technology. He has been a founder coordinator of both of these initiatives. He is associated with the CPR since its inception and looks after the synergises between CRIKC activities and those of the CPR

STAFF DETAILS

Dr. Mansimaran Khokhar
Scientist D/ Assistant Coordinator

Dr. Mansimran Khokhar has studied the promotion of industry-academia ecosystem in India, focussing primarily on Objective 1 of the centre. She has certifications in various IPR courses. She is credited with 3 research publications in national and international journals; co-authorship of two books in I-A interaction and Public-Private Partnership in R&D ecosystem of India.

Ms. Mamta Bhardwaj
Sr. Scientist C

Ms Mamta Bhardwaj has been working in the domain of Intellectual Property Rights. She also has certifications in various IPR courses from national and international organizations. She is credited with many research publications in national and international journals and co-author of two books in I-A interactions and translational research ecosystem in India.

Dr. Oinam Santosh Meetei
Scientific Officer

Dr. Oinam Santosh Meetei assists in compiling, designing, making animations and video presentations of topics on Science, Technology and Innovation i.e., Patents, Public-Private Partnership, Industry-Academia activities. He maintain the official website of the centre and also the creative head in the centre & helps in organizing webinars, conferences and workshops.

Dr. Sukhdeep Kaur
Scientific Officer

Dr. Sukhdeep Kaur expertise in interdisciplinary mixture of fields: physics, statistics, cryosphere, computer languages, geo-physical Instrumentation and analytic tools. Currently, she is exploring the research and development executed in India in conjunction to climate variability and its effect. She has worked with noted R&D organisations in India (CSIR and DRDO) as well as abroad (WSL-SLF, Switzerland) to developed innovative products which put her knowledge to practical use.

Dr. Radhika Trikha
Senior Policy Fellow

Dr Radhika Trikha's policy-research domain is 'Incentivization of Private Sector R&D, and Public-Private Partnership Models for R&D, Nationally and Internationally'. She is also working in the area of science diplomacy and her interest lies in open innovation and system interconnectedness in the STI ecosystem.

Dr Sheeraz Ahmad Alaie
Post-Doc Fellow

Dr Sheeraz Ahmad Alaie is studying the Public-Private Partnership and Policy Interactions in Indian Agricultural Innovation System. His areas of interest are- Innovation and Innovation system, Agricultural Innovation system, Innovation and Sustainable Development, Science and Innovation Policy.

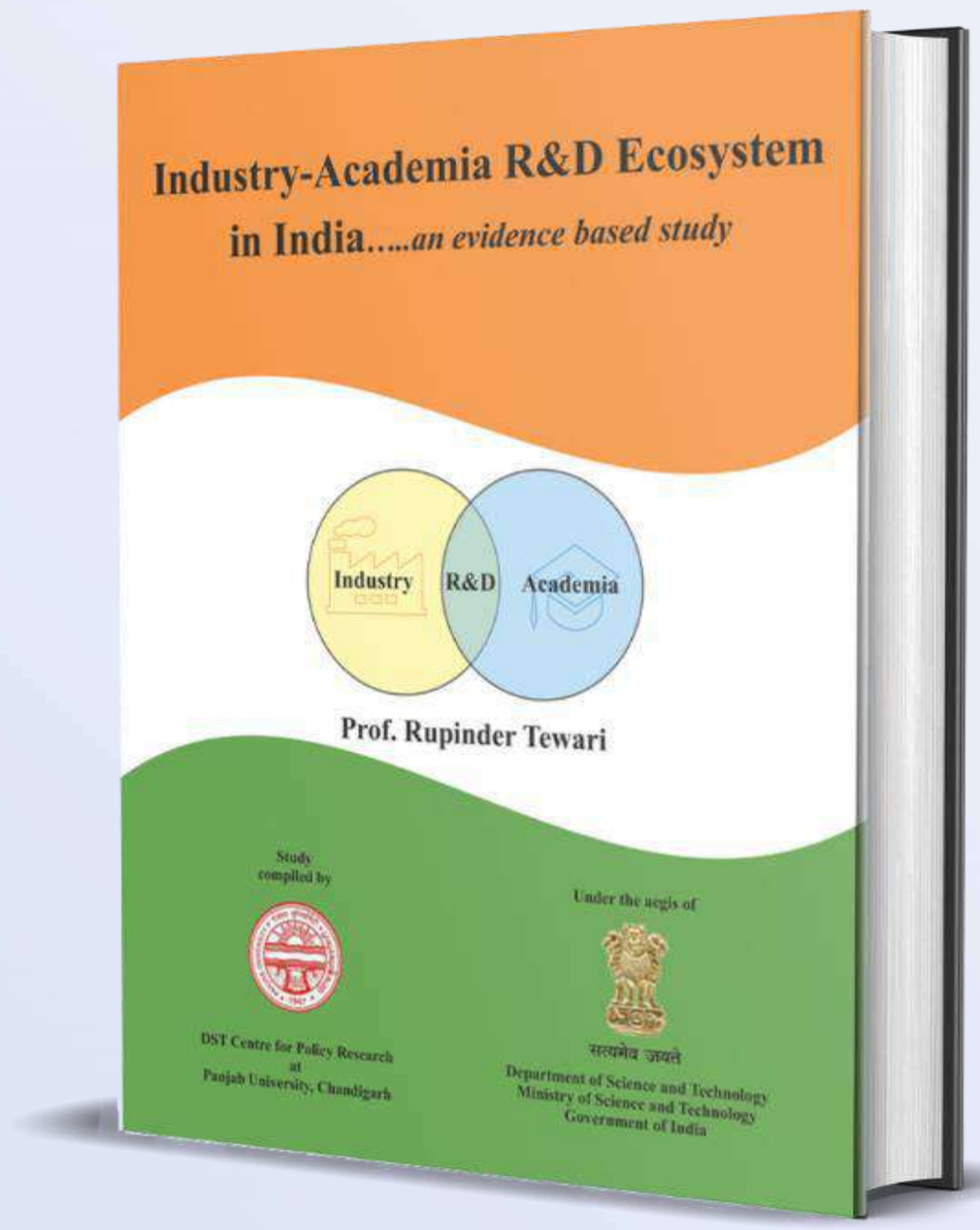
Ms. Ruchika
Secretarial Staff/ Data Entry Operator

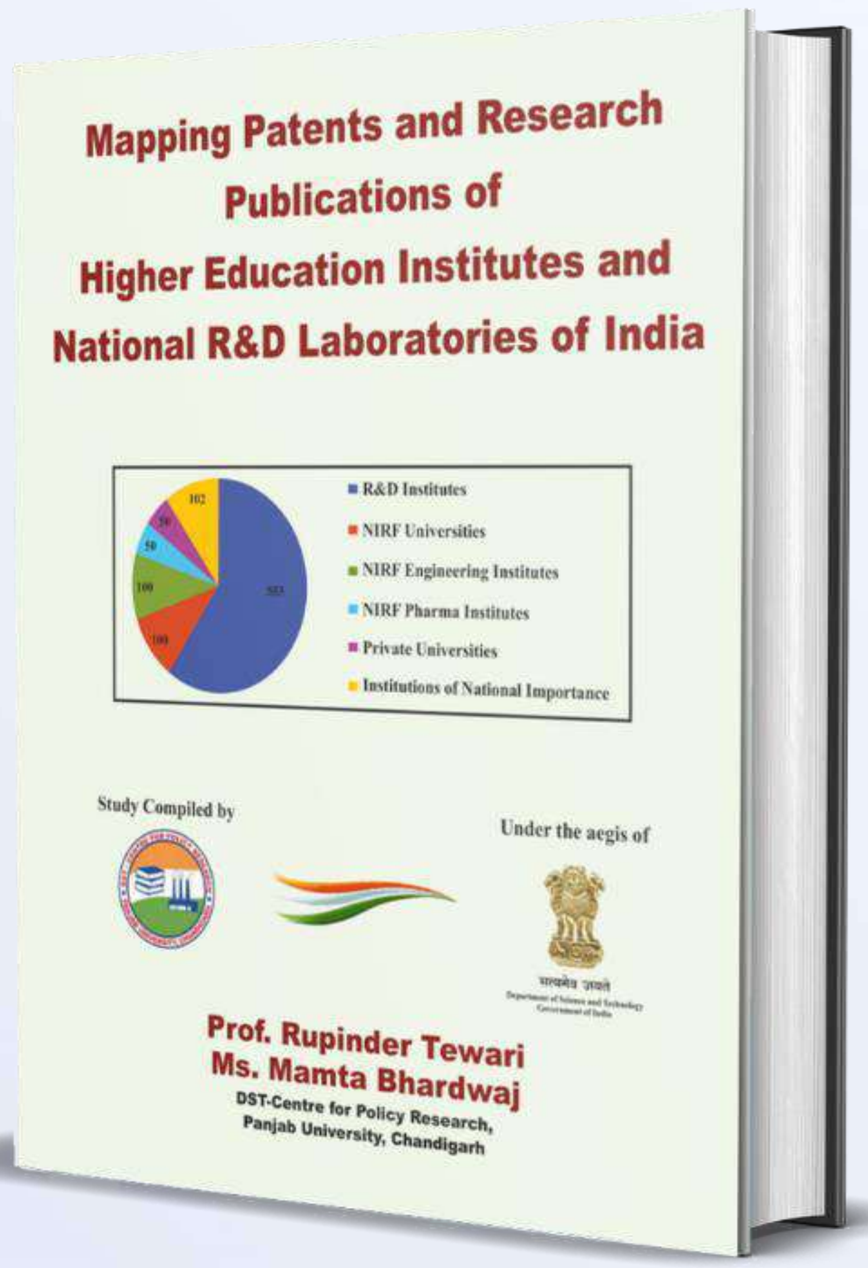
Ms. Ruchika takes care of clerical work related to the DST Centre, manages meetings conducted by the centre

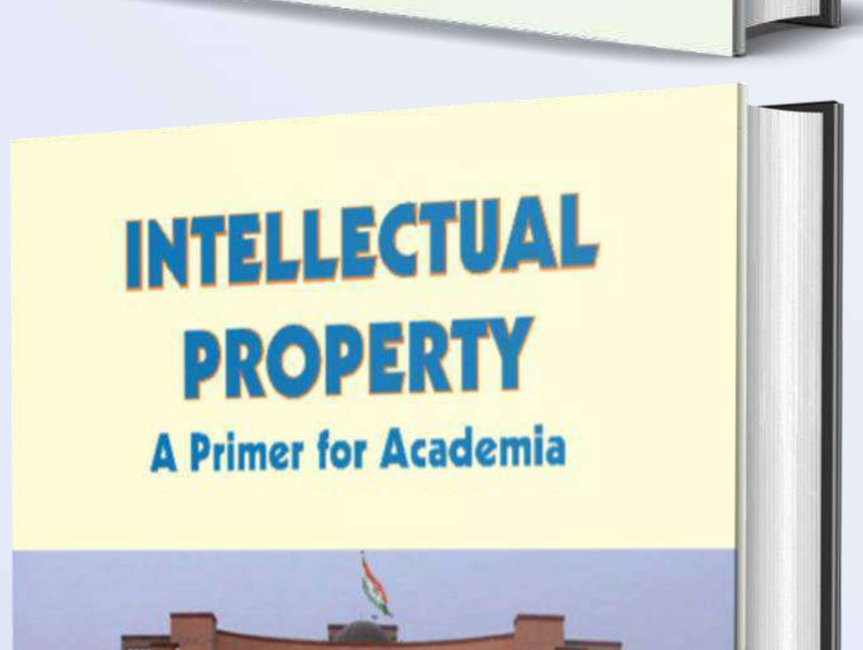
Mr. Ravinder Kumar
Helper

Mr. Ravinder Kumar ensures that sitting arrangement in the office room is clean and hygenic before commencing of the office work. He carries files and mails from/to office. He also does other works assigned to him.

BOOK PUBLICATIONS BY DST CPR







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