



# Strategic Alliances

## Enabling Partnerships and Collaborations

Webpage: <https://www.psa.gov.in/innovation-science-bharat>

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# About Office of PSA to GoI

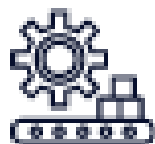
## Mission

- Provide pragmatic and objective advice to the Prime Minister and cabinet on matters related to science, technology and innovation with a focus on application of science and technology in critical infrastructure, economic and social sectors in partnership with government departments, institutions and industry

## Key Initiatives

- **PM-STIAC:** Appraises the status in specific science and technology domains, comprehends challenges, formulates interventions, develops a futuristic roadmap and advises the Prime Minister accordingly
- **Empowered Technology Group (ETG):** Proactively lays down, coordinates, and oversees national-level policies relating to procurement & induction; facilitates research and development (R&D) and provides timely advice for determining direction and trajectory of government's R&D and Technology Development Programmes
- **Science & Technology (S&T) Clusters:** Formal umbrella structures for S&T organizations in key Indian cities to have better synergy
- **Innovation and Science @Bharat:** Operates as the industry and foundation engagement department at Oo/PSA

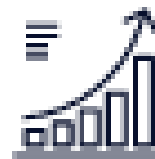
# Vision behind Innovation & Science @Bharat



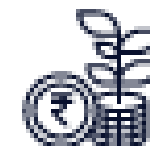
The industry in collaboration with academia and MSMEs/start-ups develops new products and offerings



Academia furthers the research in key areas as part of addressing the industry problems



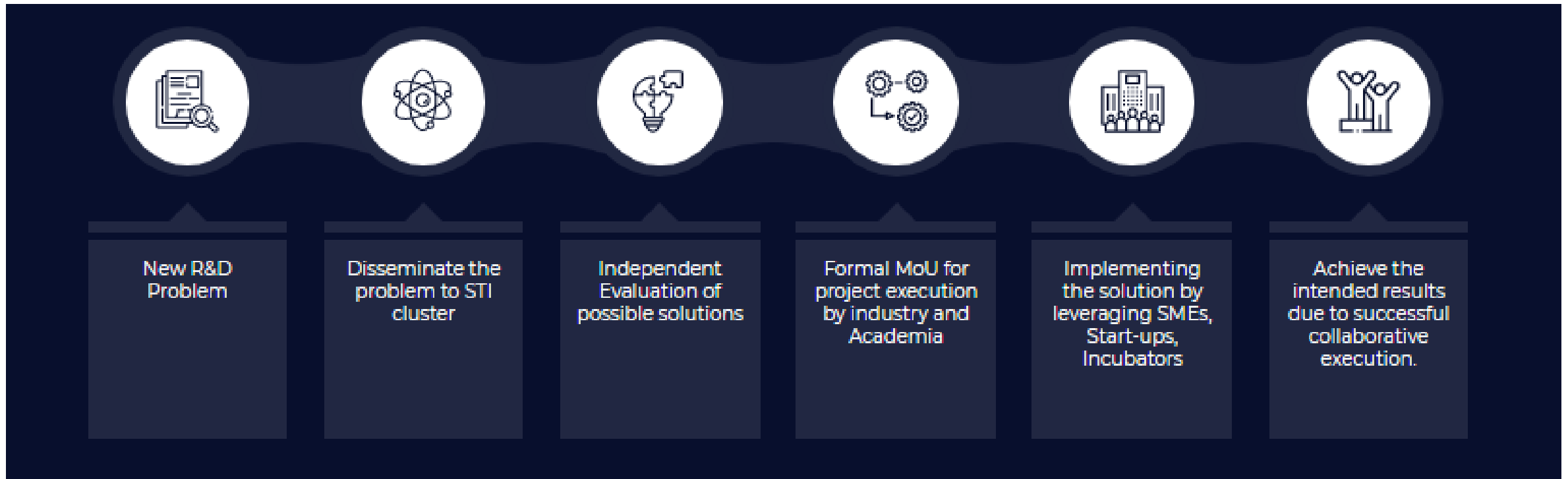
Start-ups and MSMEs provide solutions to the above challenges which enable their growth and capacity building



The country benefits from this process by synergizing the combined strengths of these three pillars to address challenges in agriculture, water, waste management and other key areas

Main objective: Leverage industry-academia partnerships to provide catalytic CSR funding for strategic R&D and innovations

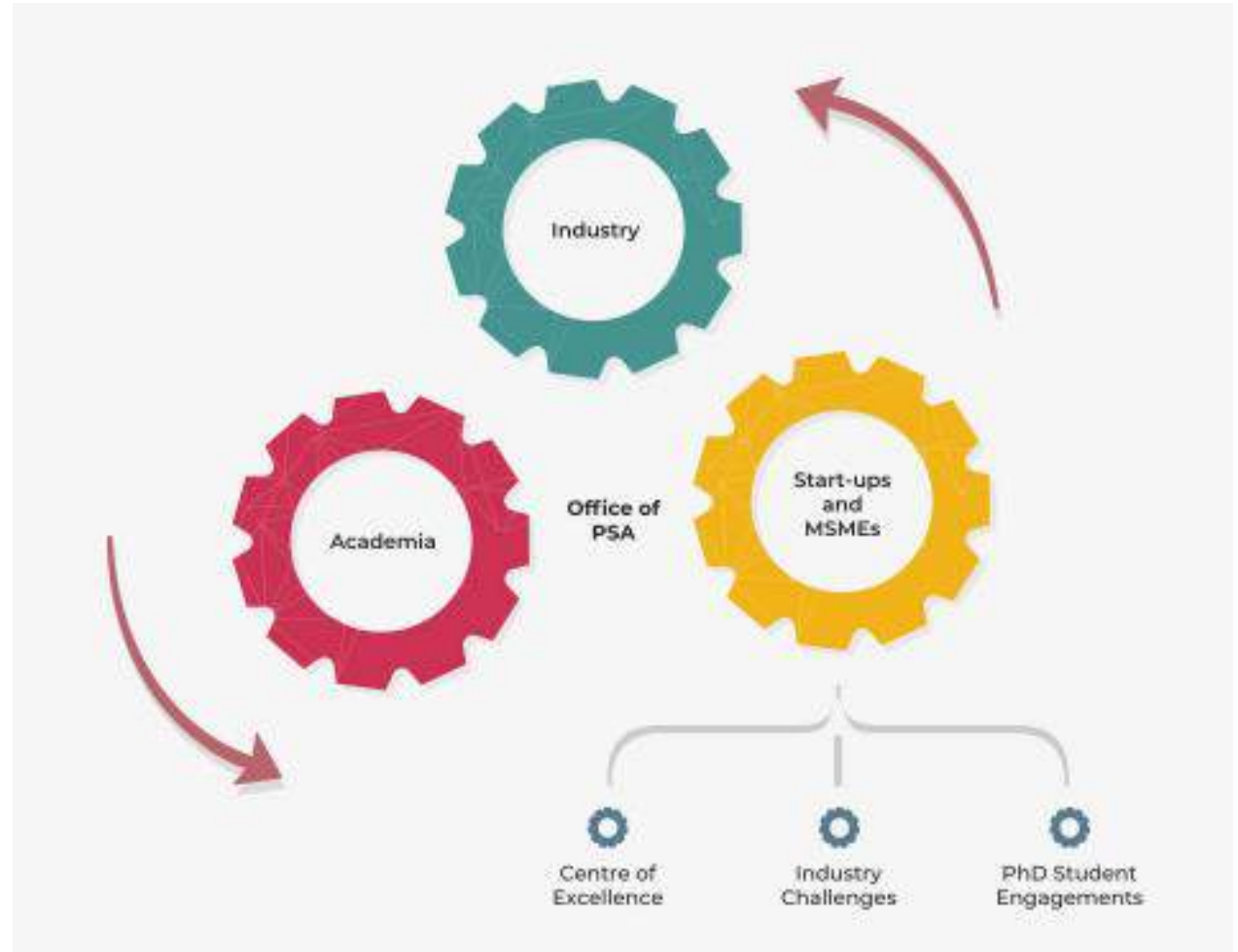
# Intended Process for Collaboration with Industry and Foundations



- Industry and foundations will sign MoU and route funding directly to the shortlisted institute
- The institute will provide CSR utilization and accounting certificates directly to the donor

# Innovation & Science @Bharat: Journey So Far

- **Oo/PSA** has been instrumental in facilitating industry-academia partnerships for social and industrial development
- Engaged with industry partners on **170+** projects in diverse areas such as **agriculture, electric vehicles, energy efficiency, defence, waste management, WASH, networking, biomedical innovation, chemicals, etc.**
- Facilitating engagements with academic and research institutes through a vast network of IITs, NITs, IISERs, CSIR labs, institutes of eminence such as IISc, research parks, AGNli and Atal Incubation Centres
- The industry-academia collaboration includes:
  - Joint R&D or contracted industry R&D
  - Establishment of theme-based Centres of Excellence (CoE) by industry in academic institutes to promote innovation
  - Finding innovative solutions to enable social development



# Partnerships and Outcomes

# Key Industry and Foundation Partnerships

<p><b>Technologies for Social Development</b></p>	<p>American India Foundation          BHEL          Bill &amp; Melinda Gates Foundation          CAMBI          CISCO          Deloitte          ECHO Network          Hindustan Unilever          HT Parekh Foundation          IFFCO          Indian Express Initiative          Keystone Foundation          KVIC</p>	<p>NIIF          Nudge Foundation          Pradhan          Railways          Rockefeller Foundation          Social Alpha          Space India Foundation          SWWW          TiE          Toilet Board Coalition,          UNEP          USAID</p>
<p><b>Emerging Technologies</b></p>	<p>ABB          Adobe          Amazon          AssisTech Foundation          Bajaj          BEL          Bloomberg          CISCO          Clean Air Asia          Daimler          DCM Shriram          Election Commission of India          Electronics Committee-CII          Himalaya          Honeywell          HP          IOCL</p>	<p>Microsoft          Nasscom          NTPC          Nuclear Power Corporation of India Ltd          Nvidia          PNB Housing          Rallis India          SAIL          Shell          Tata Chemicals          Tata Power          TCS          Toyota          UNDP          UNIDO          Villgro          VMware          Wadhvani AI          Youth4Jobs</p>

# 2020 and Beyond: Key Industry Partnerships in Various Sectors

Thematic area	Name of the Companies
<b>Agriculture</b>	Rallis India, DCM Shriram, CISCO, Indigram Labs Foundation, IFFCO, Social Alpha, Echo Network, Pradhan, Nudge Foundation, CISCO, DCM Sriram
<b>Automotives</b>	Daimler India, TATA Motors, ABB
<b>AI (Machine Learning)/IT</b>	Wadhvani AI, AssisTech Foundation, Youth4Jobs, Amadeus, VMware, Nasscom, TCS
<b>WASH (Water, Sanitation &amp; Hygiene)</b>	Hindustan Unilever, Toilet Board Coalition, Bill and Melinda Gates Foundation, Railways, Indian Express Initiative, USAID, UNEP
<b>Health/Biomedical Innovation</b>	Bill and Melinda Gates Foundation, Pune Cluster, South Korean RT-PCR Extract System, Project Nivaran-ICT Mumbai, America India Foundation
<b>Electronics &amp; Defence</b>	BEL, Electronics Committee-CII, Nuclear Power Corporation of India Ltd
<b>Oil &amp; Gas, Chemicals</b>	Rockefeller Foundation, GAIL, SAIL, UNDP, IOCL, Ministry of Petroleum
<b>Capacity Building/Skill Development</b>	CSR BOX, TiE, Amazon, Microsoft, BHEL, Deloitte, CISCO
<b>Power and Energy</b>	Tata Chemical, Tata Power, Kamposh Foundation
<b>Tech for Differently-Abled</b>	AssisTech Foundation, Youth4Jobs



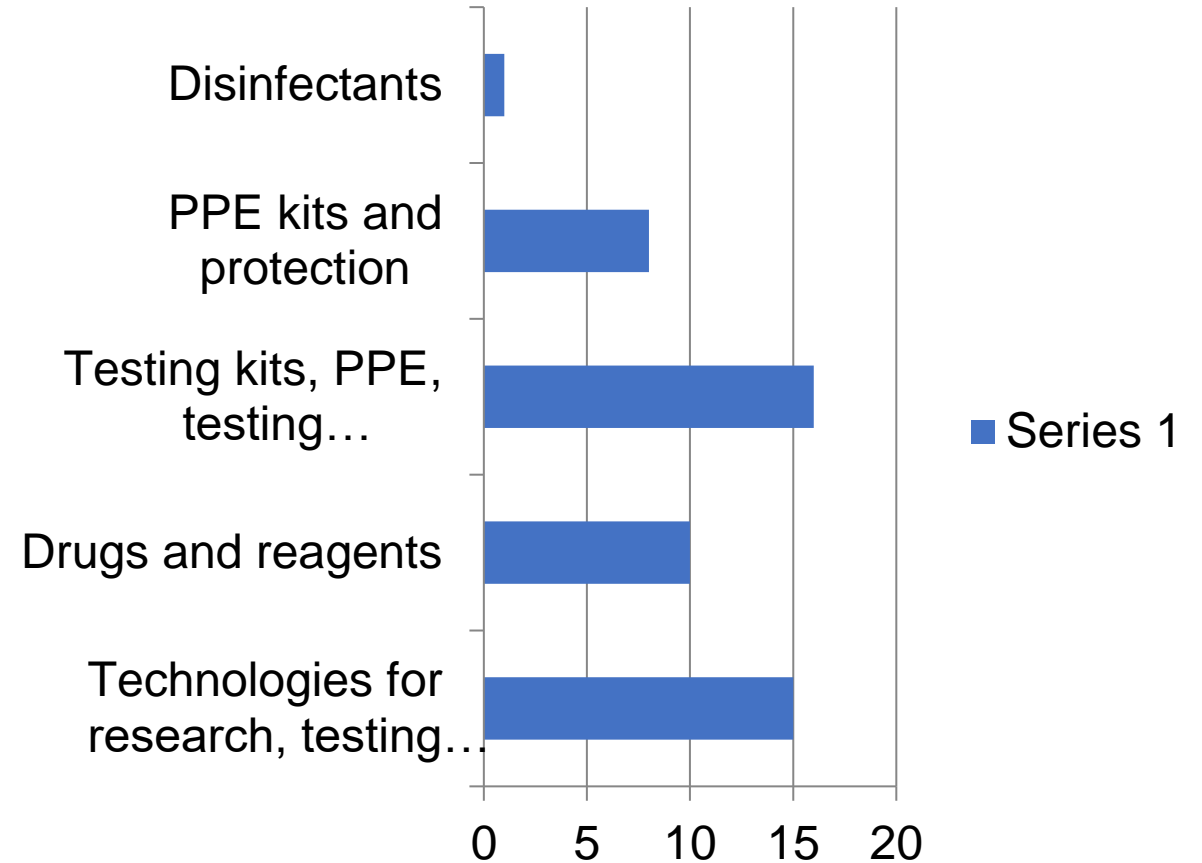


# Industry Support During COVID-19

56 projects executed through funding and technical collaboration with following companies:

Dell	Marico Innovation	Tata Steel	Flour Danial India Pvt. Ltd.
PNB Housing Finance Ltd	Mphasis & IIIT Bangalore	ACT Grants	Cholamandalam
Microsoft	Intel	ANSYS	Asian Paints
IT Firm	KisanKraft	Railways	Kirloskar Group
Standard Chartered	Wells Fargo	Syngene International	Persistent
Illumina	Infosys	Naukri.com	SBI Foundation
Tata Motors	Apollo	Cummins	Toyota
Capgemini	Murgappa	ICICI Securities	Infineon

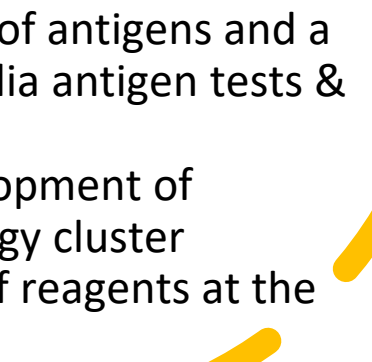
## No. of Projects Across Various Areas



# Major R&D and Innovation Outcomes During COVID

- Developed a **national digital platform** for COVID testing reagents in partnership with TCS
- Scaled up development and manufacturing of **RT-PCR and other molecular diagnostic kits**, ventilators and PPE kits
- Developed **mobile diagnostic labs** through a partnership between IISc and Toyota Kirloskar, Daimler and Tata Motors; DRDO, IIT Madras and IIT Guwahati developing additional labs using funding from Bill & Melinda Gates Foundation
- Conducted **national technician training for COVID diagnostics** at TIFR Hyderabad, IIT Delhi, TIFR Mumbai; project management across various IITs
- **Engaged MSME and start-ups** for manufacturing components
- Over **1.5 lakh face shields** manufactured and delivered


## Engaging Foundations

- **FIND:** Collaborated on a challenge for detection of antigens and a global marketplace for evaluation of Made in India antigen tests & exports
  - **Bill & Melinda Gates Foundation:** Funded development of reagents at the Hyderabad science and technology cluster
  - **Rockefeller Foundation:** Funded development of reagents at the Bangalore science and technology cluster
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# Other R&D and Innovation Outcomes

- **Ran innovation challenges from industry partners** such as UNDP, BEL, Tata chemicals and UNIDO
- **Provided innovations for a Smart Railway Station** to IRDSC in areas such as electrification, WASH, vendor systems, smart kiosks, etc.
- **Partnered with Gates/USAID** for sourcing tech innovations for tuberculosis prevention and control
- **Facilitated Daimler's engagement** on braking system with BARC and IIT Madras
- **Partnered with Amazon Web Services (AWS)** to support start-ups aimed at digital innovation for rural economy
- **Partnered with** Nudge Foundation, Indigram Labs Foundation, America India Foundation and Social Alpha to communicate important information to the academic ecosystem
- **Established an incubation center at IIM Bangalore** to promote women entrepreneurs
- **Facilitated setting up of a Centre of Excellence by NBCC** at IIT Madras for waste management

## Special Projects

- Partnered with Deloitte and IIT Madras to undertake capacity building of faculty members
  - Building digital platforms for industry-academia partnerships and WASH technologies
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# KISANMITR

## Phase 1 – 3 Agriculture Technologies Livestock SCIENTIFIC RESEARCH

Repository of agricultural technologies and scientific research to catalyze modernization of farming and solve information asymmetry.

- **Tech Suppliers:** IIT, IISER, CSIR, ICAR, MSME, Startups
- **Demand side:** 400 Nabard DDM, TAFE, ITC, Coromandel, Tata chemicals, Rallis, Nagarjuna, etc.
- **Convene:** NASSCOM, NIAM
- **Broadcast:** Doordarshan Kisan episodes funded by IFFCO
- **Outreach through redirecting on IFFCO Bazar, utilizing ITI network, KVK network, IIT Hyderabad Rural development department, IFFCO field officers, Village Level Enterprises (CSCs)**
- **Technology presentations by National Institute of Agriculture Management, NASSCOM Foundation & IIM Bangalore**

### Digital Platform

- **Filters** to easily find Tech, or Research
- **Payment gateway and escrow account**
- **Engagement** platform with video conferencing facility chat, rating system, click-to-call, and feedback forms
- **Data** regularly categorized, ingested, and displayed.
- RUTAG has dedicated space



## Phase 4 Himalayan Bazaar

Mountain States FPOs to provide to under nourished SHGs and Child/women health organizations/mid day meals/retail aggregators (nutritional, medicinal, aromatic, organic, GI tagged) agricultural products from the fringes.

- **Supply:** FPOs in mountain states, NE, and tribal areas from SFAC and NIAM
- **Demand:** Demand generated through Charitable Trusts and Retail aggregators. Will discuss with IKEA Foundation, ICICI Foundation, Akshaya Patra, and Rotary. Chevening alumni (Reliance retail, Big Basket & Future group)
- **Digital Platform:** Integration will commence with **NIC APP** for onboarding Mountain States and Tribal supply chain.







## Phase 5 APP Atmanirbhar Krishi

Aggregate and analyze data to generate agriculture insights for farmers.

- **Databases:** ISRO, IMD, GKVK, CGWB, ICAR, INM, etc.
- **Farming Inputs:** Soil health, Weather, Moisture, Pests, Land holding size.
- **Insights:** Crop selection, Fertilizer recommendations, Weather alerts
- **Digital Platform: APIs commenced to integrate to UMANG (offered to CSCs).**
- **Developed by Indian Centre for Social Transformation, Meark Enterprise and Tech Mahindra**
- **Ownership: PSA to discuss with Ministry of Agriculture regarding ownership of platform by end of month.**



## Phase 6 KALAMITR

Support weavers with inputs and marketing.

- **Technology of textiles and handloom** – for families of farmers
- Technologies – RUTAG, IITs, Industry, State Government technologies to be sourced.
- IKEA Foundation, INDUSTREE, DIRECT CREATE. Titan, Tata Trusts sourced **as demand**
- Ownership – Ideally Ministry of Textiles



## International Engagement

1. CII has provided details of startups from **Israel, Russia**, partnership through **GITA**.
2. In addition, there have been international enquiries for **replication** of the platform.
3. Providing access to global buyers interested in purchasing of Agri tech from India. Foreign language through google translator provided in addition to 14 Indian languages

***Next steps – Wadhvani AI/Google AI – to work on phase 2 of the Atmanirbhar APP to use AI to develop cropping patterns with help of inputs provided by Ministries. On the ground engagement to be increased***