



# TFK India Background for project funding call 2025



# Facts about India

**Population:** 1.4 billion

**Languages:** More than 19 000 languages or dialects, 22 constitutional languages, Hindi and English spoken widely

**Political system:** Federal Parliamentary Democratic Republic

**Current Government:** National Democratic Alliance (NDA) led by Bharatya Janata Party (BJP) is the present coalition government of India

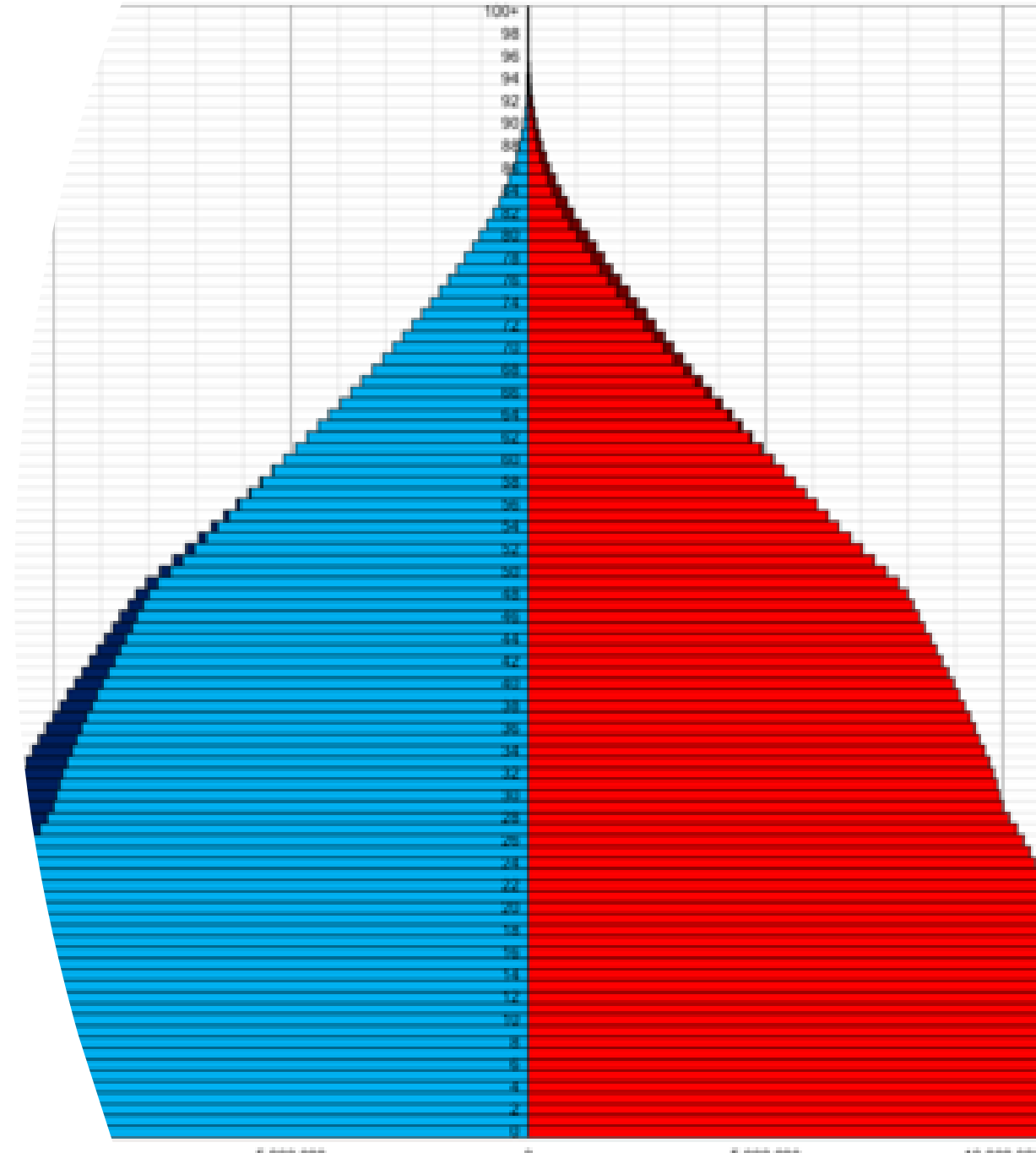
**Religions:** Hinduism (80%), Islam (12%), Buddhism, Jainism, Sikhism, Christianity etc

**President:** Droupadi Murmu (since 2022)

**Prime minister:** Narendra Modi (since 2014)

# India's young population

- More than 50% of Indians are under 25 yrs
- A demographic window of opportunity, the young bulge, the biggest resource



# Economy of India



- GDP: USD 3,9 billion (2024), 2.94 thousand per capita
- Economic growth estimated to be 6.4% 2024-25 (2023 – 2024 8.2%)



# Indian exports to Finland

Total: US\$638.76 Million during 2023, according to the United Nations COMTRADE database on international trade



Finland Imports from India	Value	Year
<a href="#">Machinery, nuclear reactors, boilers</a>	\$155.29M	2023
<a href="#">Electrical, electronic equipment</a>	\$95.82M	2023
<a href="#">Pharmaceutical products</a>	\$69.63M	2023
<a href="#">Articles of iron or steel</a>	\$29.74M	2023
<a href="#">Organic chemicals</a>	\$27.63M	2023
<a href="#">Articles of apparel, not knit or crocheted</a>	\$25.93M	2023
<a href="#">Rubbers</a>	\$24.65M	2023
<a href="#">Articles of apparel, knit or crocheted</a>	\$20.56M	2023
<a href="#">Other made textile articles, sets, worn clothing</a>	\$16.83M	2023
<a href="#">Footwear, gaiters and the like,</a>	\$16.70M	2023
<a href="#">Vehicles other than railway, tramway</a>	\$15.27M	2023

# Finland exports to India

Total: US\$902.58 Million during 2023, according to the United Nations COMTRADE database on international trade



Finland Exports to India	Value	Year
<a href="#">Electrical, electronic equipment</a>	\$425.26M	2023
<a href="#">Machinery, nuclear reactors, boilers</a>	\$116.32M	2023
<a href="#">Paper and paperboard, articles of pulp, paper and board</a>	\$62.14M	2023
<a href="#">Iron and steel</a>	\$44.19M	2023
<a href="#">Optical, photo, technical, medical apparatus</a>	\$41.88M	2023
<a href="#">Plastics</a>	\$38.07M	2023
<a href="#">Organic chemicals</a>	\$30.08M	2023
<a href="#">Aluminum</a>	\$25.23M	2023
<a href="#">Pulp of wood, fibrous cellulosic material, waste</a>	\$23.96M	2023
<a href="#">Copper</a>	\$20.49M	2023
<a href="#">Vehicles other than railway, tramway</a>	\$15.61M	2023
<a href="#">Miscellaneous chemical products</a>	\$13.27M	2023
<a href="#">Albuminoids, modified starches, glues, enzymes</a>	\$5.83M	2023
<a href="#">Furniture, lighting signs, prefabricated buildings</a>	\$5.45M	2023
<a href="#">Wood and articles of wood, wood charcoal</a>	\$4.91M	2023
<a href="#">Coffee, tea, mate and spices</a>	\$4.85M	2023
<a href="#">Articles of iron or steel</a>		



# Indian higher education

- Around 50% of Indian population are under 25 yrs – by 2030 there are more than 140 million young people in the higher education age
- The national target is to raise the GER (Gross enrollment ratio) to 50% by 2035 – that means 35 million new seats to be added in higher education
- India is the 2<sup>nd</sup> largest higher education system in the World with 43.3 million students
- More than 1100 universities and over 40 000 colleges

# Universities and other Higher Education Institutes in India



- **Central universities:** funded by the Central Government
- **State universities:** funded by State Governments
- **Deemed universities:** institutions recognised by government to have status equal to that of universities
- **Private universities:** sometimes subsidised by government
- **Institutes of National Importance:** top tier universities outside normal regulatory system
- **Colleges:** affiliated to a university, can be public or private, award degrees
- **Stand Alone institutes:** not affiliated to a university, award certificates and diplomas
- **Skills Universities:** award degrees that are skill-based, job-oriented and of applied nature



# Skills Universities (<https://nationalskillsnetwork.in/>)



- National Skills University Bill (2015) introduced new Higher Education Institutes offering skill-based and job-oriented degrees
- Skills Universities established to tackle the issue of low employability of Indian graduates – less than 50 % of graduates considered to possess the skills needed for employment
- So far a dozen of Skill Universities have been established in different states of India



# Indian Higher Education – Challenges

- By 2030 around 140 million young people will be in the higher education age – How to increase GER (Gross Enrollment Ratio)?
- Biggest education demand in the history of humankind
  - How to educate them for proper skills?
  - How to get them employed – it is estimated that less than 30% of the graduates have needed working life skills to be employed
- Academic vs skills education?
- Shortage of suitable teachers
- Public and Private institutions – how to develop both



# Indian Higher Education – Objectives

- Enabling the equal access to education
- Improving the enrollment rate and employability of the students
- Providing workinglife skills and aligning the education with the needs of society
- Developing industry – university cooperation, internships
- Boosting the start-up ecosystem by incubators
- Including everyday-life-skills as part of the education
- Student welfare initiatives

# National Institutional Ranking Framework (NIRF)

is used to rank colleges and universities in India. The rankings are based on several factors including teaching quality, research, outreach and infrastructure . NIRF has many categories incl engineering, business schools etc



## TOP Universities in India based on NIRF for 2025

- IIT (Indian Institute of Technology) Madras
- IISc (Indian Institute of Science) Bangalore
- IIT Delhi
- IIT Bombay
- IIT Kanpur
- Jawaharlal Nehru University (JNU)



# Indian Universities in Global Rankings

## QS World University Ranking 2025

- IIT Bombay (118.)
- IIT Delhi (150.)
- IIS Indian Institute of Science, Bangalore (211.)
- IIT Kharagpur (222.)
- IIT Madras (227.)



# Indian Education Diaspora

- In 2024 about 1.3 million Indians were studying abroad
- The most popular destinations were Canada (427 000), USA (331 000), Australia (120 000) and UK (111 000)
- In European Union about 85 000 Indian students, of which half in Germany
- Roughly 63% of Indian students return after studying abroad

# India develops its infrastructure, know-how, defence and self-sufficiency



”Make in India” is one of the leading missions to increase self-sufficiency and minimize dependence on esp. China in many products

- Atal Innovation mission
- National biodiversity Mission
- National Biopharma Mission
- National Health Protection Mission
- National Urban Livelihoods Mission
- **Digital India**
- National Solar Mission
- Integrated Development of Horticulture
- National Mission of Clean Ganga
- **National Mission for Electric vehicles**
- National Mission for Empowerment of Women
- **National Quantum Mission**
- **National Supercomputing Mission**
- **Climate change mission**
- **Semiconductor Mission** (to boost domestic chip manufacturing)
- **Indian Space Mission**
- **National AI Mission**
- National Mission for Waste to Wealth
- National Mission on Strategic Knowledge for **Climate Change**
- **Skill India**
- **Start up India**
- .....

# The Prime Ministers of Finland and India agreed in joint statement in 2021



**Finland and India would collaborate in two main areas  
” Sustainability” and ”Digitalization”**



# DESI Initiative by the Embassy of Finland aims to strengthen a preferred partnership between Finland and India



Finland's strategy in India is based on 4 pillars + today also "mobility", and is strongly connected to Finnish Flagship programme

- **Digitalization**
  - **Education**
  - **Sustainability**
  - **Innovations**
- + Mobility**

# India Finland Joint Science and Technology Committee meeting 2024



1. Clean Energy Transition
2. Sustainable Use of Natural Resources
3. Climate Change and Disaster Management
4. New and Emerging Technologies (AI, 6G, Quantum Technology, Space technologies, smart manufacturing etc)

New technologies are crucially important for effective development of any of the above mentioned sectors



# TFK funded projects in India 2023-2024

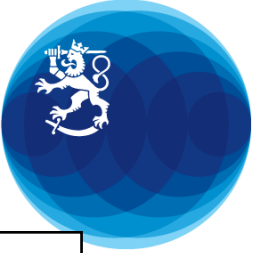
## 2024

- Information, communication and data processing technologies for response management in case of natural disasters  
Aalto korkeakoulusäätiö - IIT Indore, IIT Guwahati, IIT Varanasi \_\_€
- Educational Development on cultural Entrepreneurship through collaboration between aalto and IIM Bangalore  
Aalto korkeakoulusäätiö - IIMB - \_\_€
- Development of doctoral double degree programme between Åbo akademi University and IIT Mandi  
Åbo Akademi - IIT Mandi - \_\_€

## 2023

- Intensive courses for state-of-art atmospheric measurement and analysis of India  
University of Helsinki - IIT Delhi - \_\_€
- New perspectives to public and global health education in Finland and India  
Tampere korkeakoulusäätiö - Manipal Academy of Higher Education - \_\_€

# TFK funded projects in India 2021-2022



## 2022

- Development of multidisciplinary education in circular economy

University of Eastern Finland - IIT Delhi, IIT Dharwas, IIT Guwahati - \_\_ €

## 2021

- AI/ML (Artificial Intelligence / Machine Learning) for Beamforming in 6G

University of Oulu - IIT Indore, IIT Varanasi, IIT Goa - \_\_ €

- Approaches to digital Language Typology

University of helsinki - St Petersburg University, IIT Guwahati - \_\_ €

- Blended Intensive Study Programme in Pune and Oulu

University of Oulu - Savitribai Phule Pune University - \_\_ €

- Sharing best practices in crises preparedness in social work

University of Jyväskylä - University of Eastern Finland, Tata Institute - \_\_ €

of social sciences, Rajagiri College of social Sciences

# Indian Union budget 2025-26



## Focuses on two broad aspects:

- Generate inclusive growth, to stay afloat amidst global economic slowdown through increase in consumption and therefore demand.
- Make India a global supply chain hub by strengthening its MSMEs (micro, small and medium size enterprises), bringing about regulatory reforms and re-vamping the current tax structure.



# Sectoral Performance as per Finnish Interest



Sectors	Growth Projections
<b>IT and ITeS</b> <b>(Excluding e-commerce)</b>	Estd. revenue of \$254 billion, YoY growth of 2.8% in FY24.  Market expansion in FY24 : - Tech Export -3.3% - Domestic market expansion– 5.9%
<b>Global Capability Centres (GCC)</b>	Total number as on FY24-1700
<b>Start-ups</b>	As on October 24 total of 73,151 start-ups were registered by Start-up India.
<b>Innovation</b>	Patents filed by domestic educational institute is 23,306 in FY24 (as against 7405 in FY21)
<b>Renewable energy</b>	Increase in RE capacity by 15.8% for FY24 driven by wind and solar energy capacity expansion.

ITeS = Information Technology enabled Services

Global Capability Centers:  
<https://www.icidirect.com/research/equity/finance/what-are-global-capability-centres>

FY = financial year

# Examples of Potentially relevant topics to Finnish DESI interest in India:



## Digitalisation

- Establishing Centre of Excellence in AI for Agriculture, Health and Sustainable Cities.
- Creation of Deep Tech Fund
- Establishing *National Geospatial Mission* to develop geospatial infrastructure and data.
- Promotion of Global Capability Centers in emerging and tier-2 cities

## Education, skilling & science

- **Skilling** : 5 National Centre of Excellence with global expertise and partnership to supplement manufacturing. The partnership will entail curriculum design, training of trainers, skill certification framework and periodic reviews.
- **Education** : Expansion in enrolment and research capacity planned for the 5 new IITs established after 2014. Expansion in enrolment capacity of health education (by 10,000 in 2025 and 75,000 in the next 5 years).
- **Science & R&D** :
- Establishment of Centre of Excellence in (AI) for Education. (Total corpus allotted for CoE in AI – Apprx \$ 57.3 million, incl agr etc).
- Nuclear Energy Mission for Research & Development for Nuclear Energy by 2047 with an initial outlay of apprx. \$ 2.2 billion.
- Establishment of 2<sup>nd</sup> Gene Bank with 10,00,000 germplasm lines for future food and nutritional security.

## Sustainability

- **Circular Economy**: "National Manufacturing Mission" under Make in India. Climate friendly development, supporting clean tech manufacturing. Shipbraking and recycling. Mining reform and critical minerals
- **Renewable energy**: electricity distribution reforms, transmission capacity. Development of 100 GW of nuclear energy by 2047. 5 indigenously developed SMRs (small modular reactors) by 2033
- **Innovation**: Tinkering labs for government schools (spirit, curiosity and innovations). Emphasis on private sector driven RDI. Start up incubators.



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