



UK Science  
& Innovation  
Network



## UK Science & Innovation Network Country Snapshot

# INDIA

### India's Science and Innovation Landscape

Indian PM Narendra Modi has called the UK-India science partnership an 'unbeatable combination'. The UK is India's second largest research partner: Joint investment in science and innovation from less than £1 million in 2008 to over £200 million in 2018. Out of 5 million students who received a bachelor's degree in STEM subjects worldwide, 29% were from India.

India is the world's seventh largest economy, and is slated to surpass the US in 2030 as second largest economy through a growth rate of 6-7% per annum. The UN forecasts India's population will grow to 1.5 billion by 2030 and will surpass China's by 2025. PM Narendra Modi called on young scientists of India to "Innovate, Patent, Produce and Prosper" and said these four steps would accelerate India's promising development trajectory.

The Government of India's 2020 budget (£330 billion) awarded a 13% increase to Science Ministries. Announcements included major quantum and genetic mapping programmes, alongside aspirations to build a "new Indian economy" around AI, 3D printing, drones, agri-tech and DNA storage.

India's position in  
the Global  
Innovation Index:

**52<sup>nd</sup>**

India is now ranked 52<sup>nd</sup> on the Global Innovation Index (GII), a jump of 5 places over last year and 29 places in the last five years – up from 81 in 2015, represents the biggest jump by any major economy. India also remains 2<sup>nd</sup> among middle income economies in terms of the quality of the innovation, constantly maintaining its leadership position as the most innovative country in Central and South Asia region every year since 2011.

The Government's growing focus on research has been evident through university funding programmes. Among 100 "Institutions of National Importance", 45 Central Universities, and some State Universities, there are already a good number of academic institutions that can demonstrate world-class, sometimes leading, research in selected areas. These institutions have modern research infrastructure and employ well qualified scientists with good international networks.

In addition to universities, there are a large number of specialised, non-university research institutions under different ministries. Some of these also conduct cutting-edge research. They include various specialist research councils with a number of institutes, such as the Council for Scientific and Industrial Research and the Indian Council of Medical Research. The two departments, the Department of Science and Technology (DST) and the Department of Biotechnology (DBT), which also belong to the Ministry of Science and Technology, also have



their own research institutes. In addition, there are institutions directly under the Prime Minister. These include military and energy research institutions as well as the Indian Space Research Organization (ISRO), which has developed its own low-cost technologies and directs India's space program.

### **'UK-India' Science and Innovation: High Level Governance**

*UK-India research collaboration is growing exponentially from £1 million in 2008 to £400 million by 2021.*

The UK-India Science and Innovation Council (SIC), chaired by Science Ministers from the two countries, is held once every two years 'to develop further a strategic science, technology and innovation bilateral relationship, and agree vehicles to enhance cooperation in areas of mutual interest'. The UK and India also hold a Ministerial level Joint Working Group on Health and Life-Sciences every 1-2 years.

### **SIN India: Aims and Objectives**

*Our long term aim is a UK-India science and innovation relationship that is internationally recognised as an unparalleled force for global good.*

To realise this, our team continues to develop ambitious, international facing, sustainable partnerships with India which generate tangible solutions to global healthcare and climate change challenges; and improve UK and Indian prosperity, by providing routes to propel pioneering ideas into the marketplace. Our activity also aligns and enhances science and innovation policy approaches between the two countries, to help shape international norms. Our activities are based around five strategic pillars:

The SIN teams across India develop action plans across themes and sectors; working closely with a range of Whitehall departments to deliver our objectives:

<b>Climate Change and Environment</b>	<b>Health and Life Sciences</b>
Biodiversity, plant science, polar, oceans/marine litter, climate adaptation and resilience, agritech, clean growth (future aviation, hydrogen).	UK-India Health and Life Sciences strategy coordination, Anti Microbial Resistance (AMR), Healthy Ageing, NHS-Ayushman Bharat, genomics and precision medicine, vaccines.
<b>Tech, Translation / Innovation</b>	<b>Science Diplomacy/ Early Ideas</b>
Advanced Manufacturing, Join up with Newton Programmes (eg. Leaders in Innovation Fellowships, Innovate UK/ MEITY), AI, Immersive Entertainment, Private/ Public Research partnerships.	Space, Nuclear, Quantum, Data, Science Communication.



## SIN: Enabling for HMG

SIN also co-delivers projects for and with UK partners based in India with a strong interest in science, research and translation / innovation. Our activities contribute to the wider cross-HMG India network strategies to ensure a co-ordinated UK effort in influencing and collaborating with Indian partners. Our partners include:

- [Foreign, Commonwealth & Development Office](#)
- [UK Research and Innovation, India](#)
- [Department for International Trade](#) and
- [British Council](#)

## Current Activities / Projects

### FOOD/ PLANT SCIENCE/ AGRI-TECH

- **TIGR2ESS:** Transforming India's Green Revolution by Research and Empowerment for Sustainable food Supplies (TIGR2ESS) led by University of Cambridge. Joint partnership with 13 institutions (7 from UK and 6 from India) underpinned by a new Global Challenges Research Fund (GCRF) award to support cutting-edge research and innovation addressing the global crop science issues.
- **SIN Agri-Innovation Partnerships:** We're using the SIN Global Programme Fund to build a UK-India agri-innovation community: Through a series of inward and outward missions, we will develop early stage linkages between agri-innovation start-ups, policy makers and researchers, to unlock larger scale future growth and research opportunities.
- **Medicinal Plants:** We're commissioning a scoping exercise to establish what bilateral engagement on medicinal plants could bring mutually beneficial policy, research and commercial level outcomes in the UK and India.

### CLIMATE CHANGE/ ENVIRONMENT

#### Oceans, Atmosphere, Polar

- **Commonwealth Litter Programme (CLiP) pilot project:** SIN partnered with Ministry of Earth Sciences (Government of India) on a UK-led around role of marine litter in deteriorating sea water quality resulting in acidification of Indian coastal waters. This has led to exchange of best practice on water quality monitoring between CEFAS (DEFRA) and India's National Centre for Coastal Research (NCCR).
- We brought together MoES, GOI and Met Office (UK) for a **Collaboration Agreement to use UK Met Office's Unified Earth System Modeling Software** for Changing Water Cycles, Atmospheric Pollution & Human Health, Drivers of Variability in the South Asian Monsoon, Sustainable Water Resources, Weather and Climate Science for Services Programme (WCSSP India).
- UK and India are both partner countries at the **BELMONT forum: A multilateral forum with an aim to deliver knowledge and enable societies to meet sustainable developmental goals** in the coming decades.
- **Marine Policies:** UK aims to protect 30 per cent of the world's ocean by 2030. We're lobbying India to join this initiative through NEKTON in safeguarding at least 30 per cent of the global ocean in Marine Protected Areas by 2030.



- We're prioritising the design and launch of a UK-India "**Twin Cities Marine Litter Taskforce**" pilot to exchange scientific and innovative approaches to combat marine litter as a part of our commonwealth commitments.
- We're also exploring the launch of a **polar research partnership** between British Antarctic Survey and Indian counterparts.

### Adaptation and Resilience

- **Disaster Resilience:** Building on the "UK-India Science for Disaster Management" conference held in September 2019, SIN is scoping UK-India partnerships on climate resilient buildings and infrastructure, focussing on lab testing, standards and innovative materials.

### Clean Growth/ Mobility

- Transport for London (TfL) and the Ministry of Road Transport and Highways India (MoRTH) signed a **MoU on bilateral cooperation in urban transport policy**, planning, technology transfer and institutional organisation for transport on 10 January, 2018.
- The UK Science and Innovation Network (SIN) in India will scope viability of UK-India science and innovation dialogue and partnerships on **hydrogen and hybrid/ electric planes**, encouraging India to become part of the "Jet Zero" global leaders.

## HEALTH AND LIFE-SCIENCES

- Pilot project underway to foster deeper UK-India collaboration on **vaccines, including UK-India collaboration in the context of the Global Alliance on Vaccines and Immunisation**.
- UK-India challenge led **genomics partnerships and secondments** underway, under the auspices of the UK Bioinformatics Centre.
- SIN Team chairs and coordinates the **UK-India Health and Life-Sciences Virtual Team**; implementing the UK-India HLS Strategy.
- Regulator to regulator (CDSCO / MHRA) dialogue being held, to define and discuss barriers and enablers to better **health and life-sciences regulation**.
- Pilot project initiated, to foster UK engagement with the Indian Council of Medical Research's **Health Technology Assessment Board (HTAI)**.
- Scoping project for UK-India collaboration on innovation related to **healthy ageing** (focussing on bionics and health data).
- SIN brokering partnership between Fleming Fund and India's Ministry of Health on **AMR surveillance**.

## TECH AND DIGITAL

- The **India-UK Tech Partnership**, announced in April 2018, was established to bring together the best tech minds working in both countries to deliver high-skilled jobs and economic growth as well as to collectively tackle some of the world's biggest challenges.
- We're supporting the set-up of **Tech Hubs and Tech Clusters** on topics such as **future mobility** which will enable shared innovation and technology exchange, whilst supporting job creation.
- The **Healthcare Artificial Intelligence Catalyst** will roll out UK AI in Indian government hospitals from 2020, supporting India's landmark health reforms and national AI strategy,



- The '**Tech Alliance**' will facilitate industry discussions on policy issues such as data flows, cyber security and tech skills development.

### INNOVATION AND TRANSLATION

- **Joint Future Manufacturing Centre:** SIN is leading the scoping phase of this initiative, aiming to support greater tech-driven manufacturing in India.
- SIN India will launch a strategic partnership initiative between **25 private sector innovation R&D companies** in South India and Midlands/ Northern UK academic/ start up communities.

### The UK Science and Innovation Network in India

The Science and Innovation Network (SIN) team in India is comprised of 12 officers working across New Delhi, Mumbai and Bengaluru. The Head of SIN India is based at the British High Commission, New Delhi.



### Science and Innovation Network, India

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