



UK Research  
and Innovation

India  
भारत



# Transforming Tomorrow Together

Celebrating 15 years of UKRI India

Our thanks to our partners:



जैव प्रौद्योगिकी विभाग  
**Department of Biotechnology**  
Ministry of Science & Technology  
Government of India



विज्ञान एवं प्रौद्योगिकी विभाग  
**DEPARTMENT OF  
SCIENCE & TECHNOLOGY**



**Indian Council of  
Social Science Research**



**Ministry of Earth Sciences**  
Government of India

# Impact over the last 15 years

Close to

**£400m**

of UK-India funding  
commitment facilitated  
by UKRI India

**268**

projects funded

**43%**

of publications relate to  
UN SDGs of Affordable &  
Clean Energy and Good  
Health & Wellbeing

Partnered with

**16**

funding agencies and  
government departments

**220**

research institution  
collaborations

**100**

industry partnerships

**1,665**

publications from  
India-UKRI funded projects

**9%**

of publications were the  
result of academic-corporate  
collaborations

**200+**

technical products developed



**Professor Christopher Smith**  
UKRI International Champion  
and Executive Chair, AHRC

# Foreword from UK Research and Innovation (UKRI)

UKRI India's 15th anniversary is a moment for reflection, celebration and renewed determination. I am delighted to introduce Transforming Tomorrow Together, a celebration of UKRI's partnership with India over the last 15 years.

Since its establishment in 2008, UKRI India has actively facilitated nearly £400 million of UK-India research and innovation funding commitment, resulting in over 200 knowledge-based and technical innovations. By supporting UK and Indian researchers to work together in new ways, the UKRI India office has played a pivotal role in accelerating their discoveries and ensuring their transformative ideas have real-world impact. This brochure highlights some of the ways these critical breakthroughs are improving livelihoods, industries and economies globally.

Both India and the UK boast some of the world's best researchers and innovators who are striving for solutions to our most complex problems. Our commitment today is that the UK and India will continue to work together to solve global issues and unlock our mutual strengths and capabilities.

I am very proud of what we have achieved over the past 15 years, which wouldn't have been possible without our Government of India partners. Our successes to date highlight the effectiveness of the partnership between the Government of India and UKRI and pave the way for the huge opportunities that lie ahead.





**Professor Ajay Kumar Sood**  
Principle Scientific Adviser,  
Government of India

# Foreword from Government of India

India and the UK have made enormous contributions to global research and innovation, historically and today. When we combine our excellence in these fields, it delivers outputs that positively impact the lives and well-being of both sides, but also globally. This brochure outlines a few of the many examples of this impact that is a result of India's research and innovation partnership with the UK Research and Innovation (UKRI).

Transforming Tomorrow Together highlights the impressive impact of our joint funding in areas such as health and well-being, climate and environment, culture and heritage and technology and skills. It sets out what the UK and India can achieve when we align the knowledge and skills between our two great nations. Indian research funding partners have had continued collaboration with UKRI since the establishment of the UKRI India office in 2008, including the Department of Atomic Energy (DAE), Department of Biotechnology (DBT), Department of Science and Technology (DST), Indian Council of Historical Research (ICHR), Indian Council of Medical Research (ICMR), Indian Council of Social Science Research (ICSSR) and the Ministry of Earth Sciences (MoES).

I believe this brochure provides strong evidence for continued cooperation and investment between India and the UK to build a secure and sustainable future. Together UK and Indian research and industry partners are leading the way to make world-shaping discoveries, including bringing industry and academia closer together than ever before. I look forward to seeing what the next phase of this partnership delivers and wish them all the very best.

# UKRI India: Our story

India and the UK know that research and innovation are key to solving some of our world's greatest challenges. We also value the power of partnership when it comes to driving forward urgent and transformative change. But true partnerships can be difficult to find, often take time to nurture and need to meet the evolving needs of our two nations and our research and innovation communities.

## **That's where UKRI India comes in**

For the last 15 years, we have played a key role in making partnership feel easy and creating collaborations that matter. We have done this by facilitating co-funding for over 250 research and innovation projects; through our close links with our partners across the Government of India and His Majesty's Government in the UK; and through our deep and far-reaching network that spans academia and business across both countries.

Our office was established in New Delhi in 2008 as part of the Research Councils UK (RCUK), the predecessor to UKRI. From that day forward, our goal has been to maximise UK-India research, innovation, technology and enterprise goals by building close links between the two nations. This was catalysed further by the formation of UKRI in 2018 which brought nine research and innovation funding organisations into one unified body.

This presented new opportunities for the UK and India to collaborate more closely and has created even more demand for interdisciplinary partnerships. It also brought Innovate UK, the UK's innovation agency, into the fold, opening up partnerships that could accelerate the translation of research and the adoption of innovation.

As a small but dynamic team, UKRI India has made significant strides. Our strength lies in our ability to bring the best people together to solve complex and interconnected problems.

We convene multiple organisations and disciplines, including funding agencies and departments within the UK and India so, together, they can shape new solutions. We encourage researchers and innovators to embrace new, diverse models of engagement that play to the cultural, industrial and national strengths of both countries. We help create the right conditions for partnerships to flourish.

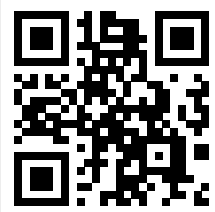
The impact of UK-India partnerships has continued to attract new and incremental funding. What started as a £1 million or Rs 10.3 crore of funding commitment between the UK and India in 2008, is now close to £400 million or Rs 4,100 crore in 2023. Put simply, our approach is working. By uniting people, insights and imaginations this way, we can continue to shape societies, strengthen industries and grow economies.



UK-India partnerships have led to significant breakthroughs documented in over 1,600 research publications. Among their numerous citations, they have been quoted by the UN and the World Economic Forum and used to craft new policy in both countries. They have informed 200 knowledge-based and technical innovations that are already delivering tangible benefits in the UK, in India and across the world which you can read about in our UK-India Impact Report.

For the next 15 years, the UK and India will build on these successes and UKRI India will be at the heart of this. We will make new connections, conceive new programmes and collaborate on our world's most urgent challenges, so India and the UK will continue to transform tomorrow together.

Scan here for the  
UKRI India Impact report





**Sukanya Kumar**  
Director, UKRI India

## Forward look from UKRI India

Celebrating UKRI India's 15th anniversary is a chance for us to take stock of our journey so far and to prepare for the opportunities ahead. As we know, these are rare and special moments in research and innovation because the problems are urgent and the pace of change is exhilarating.

As we pause to reflect, something that becomes immediately evident is the strength and impact of our combined knowledge, skills and talent. An equally important factor, however, is the mutual trust and confidence that both sides have developed over the last 15 years. This, combined with our desire to learn from each other and the confidence that we are stronger when together, will continue to stand us in good stead as we step into the next 15 years.

As UKRI India we make sure that, whatever we do, we do it with a clear vision for the future. A future that continues to deliver great results for our two countries and for the rest of the world that benefits from our partnership.





## So how should we step into the next 15 years?

**We must integrate our thinking.** The most complex problems are best solved when different disciplines work together. We must trust the power of the collective and not feel constrained by structures.

**We must aim for global good.** UK-India research and innovation has already demonstrated the potential to deliver impact that improves lives globally. We must actively join forces to address challenges that go beyond our borders and support international communities.

**We must invest in next-generation leadership.** Our future academics and innovators need to value collaboration if they are going to succeed. It is our responsibility to give them the skills they need to make partnerships more innate, more organic and more sustainable.

**We should be more curious.** Powerful partnerships come from the most surprising places. That is why we must embrace new methods, explore new opportunities and be open to new ways of collaborating.

But for now, as we pause to reflect on our joint successes, I want to say thank you to our Government of India partners who have worked with us with a common purpose, towards shared goals.

As for the future, from emerging technologies to creative industries, from the seabed to the frontiers of space, we will continue to unite imaginations and shape better worlds.



# Health and Wellbeing

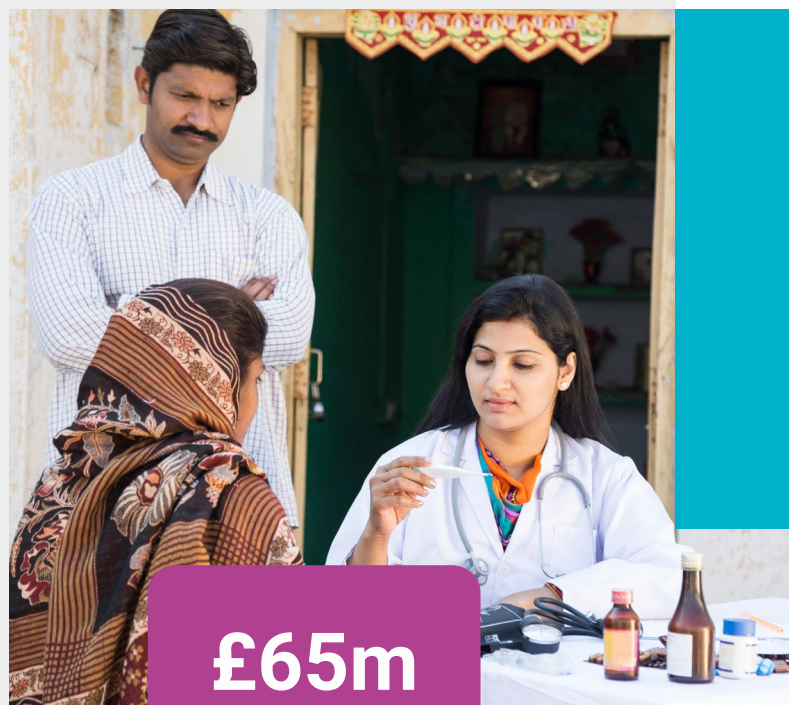
India and the UK want to create fair, sustainable and effective health systems that safeguard their people and promote prevention over treatment. We face different but related challenges. The UK has a slowing, ageing population, while India has a rapidly growing, younger population. Both have implications for individuals, communities, public services and economies.

Added to that, global health systems have been tested in ways that could never have been predicted. Pandemics have highlighted inequalities in healthcare systems. Digitisation is changing how people expect to access healthcare and the shift in how people are living, travelling and eating is putting a strain on health services.

UK-India research partnerships, facilitated by UKRI India over the last 15 years, have helped address these challenges by convening researchers, innovators, government departments, Non-Governmental Organisations (NGOs) and businesses across the health sector to combine their resources and knowledge. The resulting programmes have led to game-changing breakthroughs in the way drugs are discovered and treatments are developed.

One such partnership combines traditional Indian practices with modern medical advancement to test the effectiveness of yoga-based cardiac rehabilitation. Others that focus on maternal, foetal and child health have resulted in accessible technology to monitor symptoms and measure vital signs, or have produced data around early vitamin intervention. Many have been enhanced by the contribution of social and behaviour scientists to ensure innovations are fit for the communities they serve.

These collaborations have proven so effective that there has been significant follow-on funding and shifts in policy. Many innovations have been deployed on the ground in the UK, in India and across the world – and they are already improving outcomes, preventing illness and saving lives.



**£65m**

funding for projects  
contributing to  
sustainable, healthy  
and secure societies

# Innovation and Adoption

India and the UK are global leaders in research and innovation with a laser-focus on the adoption of innovation as a way to drive productivity. As funding partners of research and innovation, we believe in promoting business-led innovation by developing a supportive innovation ecosystem that is agile and inclusive.

UKRI India has played a vital role in connecting academia to the business community to ensure the needs of industries are baked into the design of research programmes from the outset. These mutually beneficial partnerships aid the exchange of insights and improve the sharing of resources. The engagement of social sciences also means that innovative technologies are more sensitive to local environments, behaviours and contexts in the UK and India, so help increase adoption rates.

One such collaboration, for instance, has led to breakthroughs in reducing the environmental impact of bagasse, the waste from the sugarcane industry which is the second-largest agriculture-based industry in India. In another business collaboration, UK and Indian innovators have joined hands to reduce carbon emissions and increase the evidence base for policies to ensure cleaner air through models that are replicable more widely.

The success of this model is evident in the fact that nearly one in 10 India-UKRI funded publications has been co-authored by academics and businesses, which is three times the world average. These partnerships have led to over 200 reported technical outputs already accelerating the adoption and commercialisation of innovation –

from improving agricultural yield, to optimising natural resources and transforming manufacturing in a way that maximises productivity and minimises waste.

Further translation of research into innovation will allow both countries to make better things more quickly, more cheaply and more sustainably – helping drive productivity and creating greater economic and social value.



**£28m**

invested towards  
cutting-edge,  
business-led research

# Climate, Energy and Environment

Complex challenges are easier to solve with collaboration – and no challenge is more complex than climate breakdown. UK and India may face different manifestations of climate breakdown, due to the size of our populations, or the hemisphere in which we are located, yet we share a common goal to deliver sustainable energy, clean transport and food security for ourselves and for the benefit of the wider global community.

Over the last 15 years, UKRI India has facilitated UK-India partnerships that transcend our differences in infrastructure, production, consumption, environment and resources to reimagine these foundational systems together. In doing so, these partnerships have driven breakthroughs in solar energy, nuclear energy, climate-resistant crops, clean air and weather forecasting.

The intertwined nature of human and natural systems also requires new shapes and sizes of consortia and UKRI India are experts at bringing together diverse partners from multiple disciplines. One project that brought together experts in a collective of 10 universities and 14 institutions developed solutions to ensure that the value of solar energy generation is optimised in both India and the UK.

A UK-India collaboration on the South Asian Monsoon has resulted in the development of databases that provide technical readings to help researchers better predict where, when and how intensely monsoon downpours



will occur. This, in turn, helps protect livelihoods and human life.

Evidence of adoption can already be seen across a number of programmes. A collaboration that developed research methods and web tools to aid the use of nitrogen as a fertiliser for crops has already helped 10,000 farmers in seven different countries. While in Ludhiana, an entire village has saved an average of 80kg of nitrogen per hectare thanks to recommendations from UK-India funded research.

These partnerships have unlocked insights into our land, ocean and atmosphere, across rural communities and into urban environments. Our joint funding has made this valuable information accessible through databases and publications, so that academics and innovators worldwide can build on their findings and add to the solutions our global communities need.

**£120m**

invested in  
understanding  
and responding  
to environmental  
challenges

# Technology and Skills

As leading producers and consumers of technology, India and the UK have ambitious tech agendas. The two countries are investing heavily in priority areas such as artificial intelligence (AI), telecoms, laser technologies and others to further scientific discoveries. Both know that access to, and the ethical use of, technology will drive productivity.

Yet technology isn't always available to the people that need it the most – from small businesses and rural farmers to public services and lone researchers – and these people do not always have the skills to use technology effectively. So, over the last 15 years, UKRI India has brought together partners to not only uncover technologies and unlock data but also discover uses and develop skills that could transform lives and livelihoods.

India-UKRI funded data-led research has led to more than 200 new databases, research tools and applications of software across medical, cultural, social, economic and environmental programmes. These are already shaping a myriad of areas in the UK and India, such as apps for more abundant farming, databases for accurate weather forecasts, sensors for sustainable food manufacturing and high-res biomedical imaging to improve health outcomes.

Technology, and the skills to use it, is also a critical area of thinking for behaviour scientists as they understand how and why technology thrives. Many of our bilateral programmes have drawn on partnerships across social science disciplines to holistically address issues like access to scholarly science knowledge, equality, diversity, and inclusion and the ethical use of AI.

Going forward, equitable access to technology, data and skills will transform industries, improve societies and help economies grow in India and the UK – a goal shared with the rest of the world looking to accelerate their development.



**£13m**

co-funding invested  
to accelerate  
technology  
and skills

# Culture and Societies

Culture and heritage have huge influence on society in both India and the UK. They also reveal important lessons that, when used well, can drive scientific discovery, economic growth and human development.

Yet culture is in a constant state of transition for the two countries. Both the UK and India are experiencing pressures as they navigate the new while preserving the old, and while urbanisation is shifting the places we live in and the ways we live in them.

UKRI India has facilitated research into culture and society through technology, art and engagement. The aim has been to increase the collective understanding of culture in society, uncover new solutions to shared challenges and reveal impactful ways for innovation to be adopted.

India-UKRI funded programmes have collected valuable voices of those experiencing urban growth or rural survival and reinvention. They have explored dynamically different localities, from mega cities to small coastal communities and they have charted the evolution of our societies, from cultural heritage to cultural innovation.

UKRI India facilitated partnerships have led to the formation of a rich tapestry of partners across the UK and India, including government ministries, public bodies, academia, urban planners, businesses, communities, artists and activists. These diverse and, at times, unlikely collectives have created avenues for knowledge exchange and story sharing. They have designed platforms to raise awareness of the importance of city-level data to enable communities to have a voice in managing their cities.

Understanding the multitude of modern experiences across the UK and India is already helping authorities and businesses provide better public and private services and they have attracted the attention of global policy makers and international partners like the UN and the World Economic Forum.



**£11m**

co-invested in  
research investigating  
change in culture  
and society

# About UK Research and Innovation

**UK Research and Innovation (UKRI)** is the largest public funder of research and innovation in the UK, investing £8 billion annually spanning all disciplines and all sectors. As nine councils we draw on our own expertise, as well as that of national and international governments and stakeholders, to increase our understanding of ourselves

and the world around us. Our collective knowledge, insights and connections mean we are better able to support innovative businesses and public services, to create high-quality jobs and, ultimately, to enrich lives in the UK and globally.



**Arts and  
Humanities  
Research Council**



**Biotechnology and  
Biological Sciences  
Research Council**



**Economic  
and Social  
Research Council**



**Engineering and  
Physical Sciences  
Research Council**



**Innovate  
UK**



**Medical  
Research  
Council**



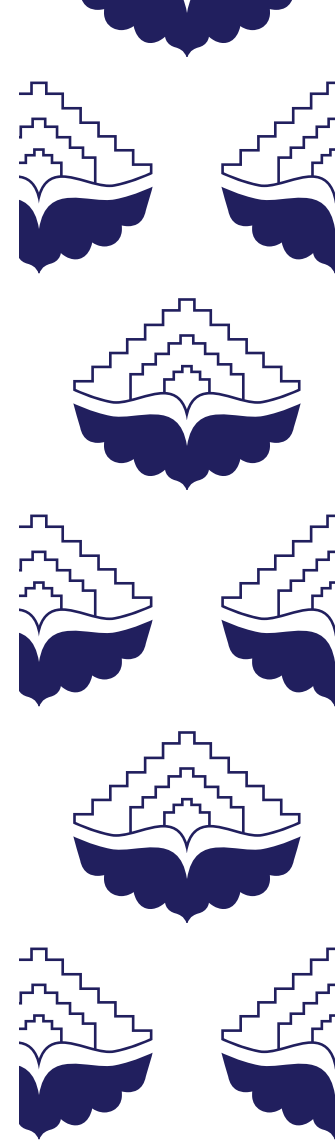
**Natural  
Environment  
Research Council**



**Research  
England**



**Science and  
Technology  
Facilities Council**



X  @UKRI\_News

X  @UKRI\_India

#UKRIIndia@15

 [www.ukri.org](http://www.ukri.org)

October 2023

10088



UK Research  
and Innovation

India  
भारत

