



AUSTRALIA
INDIA
INSTITUTE



TOWARDS THE SDGs: AN ANALYSIS OF AUSTRALIA-INDIA RESEARCH COLLABORATIONS

Ujjwal Krishna, Hiya Harinandini, Haripriya Rangan
Australia India Institute
March 2025

CONTENTS

Foreword	3
Executive Summary	4
1. Sustainable Development Goals and their impact on higher education research	6
2. Methodology	12
3. Australia-India collaborations by SDGs	16
4. Insights from Australian university researchers leading the joint-authored publications by top SDGs	32
5. The Way Forward	41
References	46
Appendices	47

ACKNOWLEDGEMENT

Australia India Institute acknowledges the Traditional Owners of Country throughout Australia and recognises the continuing connection to lands, waters and communities. We pay our respect to Aboriginal and Torres Strait Islander cultures, and to Elders past, present and emerging.

CREATIVE COMMONS

The material in this publication is licensed under a Creative Commons Attribution 4.0 International Licence (creativecommons.org/licenses/by/4.0/)

To cite this report: Krishna, U., Harinandini, H., Rangan, H. 2025. Towards the SDGs: An Analysis of Australia-India Research Collaborations. Australia India Institute, Melbourne.

FOREWORD

The Sustainable Development Goals (SDGs) represent an ambitious blueprint for addressing global challenges in pursuit of peace and prosperity of both people and the planet. In the context of Australia and India – nations with distinct socio-economic landscapes yet common aspirations for sustainable development – collaboration in research offers a valuable pathway to advance these global objectives.

This report explores the intersection of SDGs with collaborative research activities between Australian universities and Indian higher education institutions. It examines how government commitments to meet these targets are reflected in these collaborations and considers the potential of SDGs to serve as a lens to guide deeper, more impactful research partnerships between the two countries.

By analysing joint research publications from 2015 onwards – the year the SDGs were adopted – the report highlights key areas of collaboration, identifies emerging priorities, and uncovers gaps where alignment with SDG targets can be strengthened. It offers strategic insights for scholars, policymakers, and industry leaders to enhance partnerships in ways that benefit both nations and the global community.

As Australia and India continue to integrate the SDGs into their national agendas, this report underscores the critical role of research partnerships in driving sustainable development. By identifying areas of strength and untapped potential, it offers guidance for enhancing collaboration that not only benefits both nations but also contributes meaningfully to the pursuit of the 2030 Agenda.



A handwritten signature in black ink, reading 'L. M. Singh'.

The Hon. Lisa Singh
Chief Executive Officer,
Australia India Institute

EXECUTIVE SUMMARY

The Australian Government has made commitments in its National Sustainable Development Goal Summits of 2016 and 2018 towards achieving key targets of the United Nations Sustainable Development Goals (SDGs) Agenda across states, cities, and regional communities. The Government of India has also embraced the United Nations SDGs as a strategic framework for addressing the nation's diverse socio-economic challenges. It has integrated the SDGs into its national development agenda and formulated a priority index of 62 key indicators to achieve India's SDG targets by 2030 at both national and state levels.

To what extent are these governmental commitments to achieving the SDG targets reflected in the collaborative research activities between Australia and India?

How do ongoing research collaborations between Australian and Indian researchers address the SDG agenda?

How might the SDGs contribute to a renewed framework for expanding, deepening, and leveraging research collaborations between the two countries?

The report addresses these three questions by using the SDGs as a lens to examine past and ongoing research collaborations between Australian university researchers and their counterparts in Indian higher education institutions (HEIs). The analysis centres on three aspects of bilateral research collaborations:

- How do the national research priorities identified by each country align with the seventeen SDGs?
- How do the joint-authored research publications of Australian and Indian collaborators map onto the SDGs?
- How do the leading Australian university researchers identified from the mapping of joint-authored publications by SDG view the challenges and opportunities of expanding and leveraging Australia-India research collaborations from an SDG perspective?



The bibliometric analysis of Australia-India research collaborations relies on the Scopus database of publications in academic journals which provides functions for classifying publications by their relevance to the seventeen SDGs. The methodology specifically developed for mapping research collaborations according to SDGs uses these functions to identify joint-authored publications limited to Australian university- and Indian HEI-based researchers. The analysis focuses on joint-authored publications from 2015 onwards, the year when the SDGs were formally adopted at the United Nations Sustainable Development Summit in New York.

KEY FINDINGS

- In 2024, Australia had the highest number of universities in the top ten Times Higher Education (THE) Global Impact Rankings, which assess social and economic contributions of universities based on SDGs using research, stewardship, outreach and teaching metrics.
- India featured as the most-represented country in the THE Global Impact rankings of 2024 with a total of 96 higher education and research institutions.
- The top five SDG areas emerging from the bibliometric analysis are (in order of ranking): Good health and well-being (SDG 3); Affordable and clean energy (SDG 7); Industry, innovation and infrastructure (SDG 9); Clean water and sanitation (SDG 6); Zero hunger (SDG 2). The top three overlap with key national research priorities of each country and represent well-established themes of Australia-India bilateral research collaboration priorities and engagement.
- The top five SDG areas represented by Australia-India joint-authored publications do not overlap with the SDG areas in which Australian universities ranked No. 1 in the THE Global Impact Rankings. These SDGs are Gender equality (SDG 5); Reduced inequality (SDG 10); Climate Action (SDG 13); and Partnerships for the Goals (SDG 17).
- There is minimal correspondence between Australia-India research priority areas, the SDG areas of high global impact rankings of Australian universities, and the top SDG areas represented by joint-authored publications by Australian and Indian researchers.

- Within the top five SDG areas identified by the bibliometric analysis, the Go8 universities lead with the number of joint-authored publications in Good health and well-being (SDG 3), Affordable and clean energy (SDG 7), and Zero hunger (SDG 2). The ATN group of universities lead in Clean water and sanitation (SDG 6) and Industry, innovation and infrastructure (SDG 9).
- Within the middle five SDG areas identified by the bibliometric analysis, the Go8 universities lead in the areas of Climate action (SDG 13), Decent work and economic growth (SDG 8), Sustainable cities and communities (SDG 11) and Partnerships for the Goals (SDG 17). The ATN group of universities lead in Responsible production and consumption (12).
- Leading Australian researchers in the top five SDGs are self-motivated to align their research interests with SDGs. Absence of clear incentives and standardised methodology in Australian research grant schemes for aligning research to SDGs constrains researchers from systematically integrating the SDG agenda in their collaborative work.

THE WAY FORWARD

The SDGs offer a useful interdisciplinary framework for leveraging and expanding bilateral research collaboration activities in high and emerging global impact of Australian and Indian research for tackling shared challenges and advancing each country's commitments to the SDG agenda.

The SDG framework provides a means for identifying early- and mid-career researchers in both countries who are motivated to address shared challenges through co-designed, interdisciplinary methods which include innovative partnerships with industry, government, civil society and community-based organisations.

Aligning bilateral Australia-India research collaborations to SDGs can expand and diversify opportunities for researchers to secure funding from multilateral organisations, international research programs and philanthropic foundations that promote global North-South collaborations.

1. SUSTAINABLE DEVELOPMENT GOALS AND THEIR IMPACT ON HIGHER EDUCATION RESEARCH

SUMMARY

- Australia and India have different approaches for aligning national and international policy priorities to the Global SDG agenda.
- Ten Australian universities topped the list of the 2024 Times Higher Education (THE) Global Impact Rankings, which assess socio-economic contributions of universities based on their engagement with SDGs.
- India featured as the most featured country with 96 Indian higher education and research institutions listed in the 2024 THE Global Impact Rankings.
- The SDG agenda is used by Australian universities to convey the global impact of their activities and research engagement.
- The SDG agenda in Indian higher education has been advanced by national initiatives focused on research and innovation in science and technology.

The UN Sustainable Development Goals (SDGs) were adopted in 2015 as ‘a universal call to action to end poverty, protect the planet, and ensure that by 2030 all people enjoy peace and prosperity’¹. These were developed to address the shortcomings of the UN’s Millennium Development Goals, which called for international collaboration and coordination to address global deficits and disparities in economic development. The SDGs emphasised the importance of addressing global development in terms of sustaining and improving life in all three dimensions – economic, social, and environmental. The goals presented a long-term vision with clear objectives and targets to be achieved by 2030.

A total of seventeen SDGs were defined, each with its own set of indicators. The SDGs, albeit non-binding, have been influential at the level of high-level policy discourse, and have shaped development cooperation and funding by governments, multilateral organisations, corporations and philanthropic bodies.²



Source: [United Nations](#)

1 UNDP (2025). What are the Sustainable Development Goals?. Retrieved from: <https://www.undp.org/sustainable-development-goals>

2 Department of Foreign Affairs and Trade (2024). 2030 Agenda for Sustainable Development and the Sustainable Development Goals. Australian Government. Retrieved from: <https://www.dfat.gov.au/aid/topics/development-issues/2030-agenda-sustainable-development>

Broad international agreement on the global indicator framework for the SDGs and their respective targets has allowed for a common basis for the monitoring and tracking of progress despite challenges in data compilation and inconsistencies in maintaining national-level reporting platforms. India maintains an SDG Index and Dashboard but Australia's reporting platform on the SDGs is no longer functional. The Australian Government has reiterated its commitment to the UN SDG 2030 Agenda and to exploring alternative options for managing and reporting SDGs at the national level. According to the United Nations Association of Australia (AUAA), public awareness and coordinated action on SDGs has been limited.³

Global progress on achieving SDGs has been slow. The UN's 2023 Sustainable Development Goals Report notes that "a preliminary assessment of the roughly 140 targets with data show only about 12% are on track; close to half, though showing progress, are moderately or severely off track and some 30% have either seen no movement or regressed below the 2015 baseline".⁴

THE SDG AGENDA IN AUSTRALIA AND INDIA

Australia and India are among the 193 UN member states that endorsed the 2030 Agenda for Sustainable Development at the United Nations Sustainable Development Summit in 2015. There are, however, significant differences in the degree to which they have aligned their national policy priorities and processes to the SDGs.

The Indian government has leveraged its multilateralism and governmental apparatus to advance the SDG agenda. This includes the use of multilateral groupings other than the UN itself to promote the Goals. As the host of the G20 Summit in 2023, India steered international negotiations to arrive at the New Delhi Leaders' Declaration, the opening sentence of which stated the member states' intention to "leverage the G20's convening power and its collective resolve to fully and effectively implement the 2030 Agenda and accelerate progress toward the SDGs."⁵ Australia, along with other G20 member states, stated its intention to scale up financing from all sources to accelerate progress on the SDGs.

AUSTRALIA'S COMMITMENTS TO THE GLOBAL SDGS

Australia released its first Voluntary National Review (VNR) on the 2030 Agenda at the UN High-Level Political Forum (HLPF) in July 2018. The review noted the advanced progress of Australian business, academic and civil society organisations towards achieving Goal 8 (Decent work and economic growth). It also highlighted the progress made towards Goal 6 (Clean water and sanitation) by working with the UN and World Bank High Level Panel on Water to share its experience and expertise in technology and management.⁶

The Commonwealth government's commitment to SDG 4 (Quality Education) is reflected in its position as one of Australia's top two performing SDGs, along with SDG 3 (Good health and well-being).⁷ Continuous public investment in research, innovation, and education sector reform have driven Australia's achievement of most targets that track progress against this Goal.

However, despite these efforts, several challenges persist with achieving key domestic targets for SDG 4. This includes disparities in education quality, access and outcomes for Indigenous students, communities of low socio-economic status, and regional students; the digital divide between metropolitan and regional populations; and low numeracy and literacy skills amongst the older population. These challenges are being addressed by focusing on interventions for equitable and inclusive access to quality education; teacher workforce and professional development; and digital transformation and flexible learning in tertiary education.

On the international front, Australian government agencies have contributed statistical and technical expertise on specifications and methodologies for developing global SDG indicators.⁸ For example, it funded the partnership between the Australian National University and the International Women's Development Agency (IWDA) to build the Individual Deprivation Measure (IDM) also known as Equality Insights. This is a gender-sensitive and multidimensional measure that overcomes the current limitations of poverty data by getting below the household level to provide individual-level assessment of deprivation.

³ United Nations Association of Australia (2019). Sustainable Development Goals. Retrieved from: <https://www.unaa.org.au/sdg/>

⁴ United Nations (2023). The Sustainable Development Goals Report 2023: Special Edition. Retrieved from <https://unstats.un.org/sdgs/report/2023/>

⁵ SDG Knowledge Hub (2023). G20 Recommit to SDGs to Shape the World We Want for Future Generations. Retrieved from: <https://sdg.iisd.org/news/g20-recommit-to-sdgs-to-shape-the-world-we-want-for-future-generations/>

⁶ Department of Foreign Affairs and Trade (2018). Australia's Report on the Implementation of the Sustainable Development Goals. Australian Government. Retrieved from: <https://www.dfat.gov.au/sites/default/files/sdg-voluntary-national-review.pdf>

⁷ Sachs, J.D., LaFortune, G., Fuller, G. (2024). The SDGs and the UN Summit of the Future. Sustainable Development Report 2024. Paris: SDSN, Dublin: Dublin University Press. Retrieved from: <https://s3.amazonaws.com/sustainabledevelopmentreport/2024/sustainable-development-report-2024.pdf>

⁸ Department of Foreign Affairs and Trade (2018). Tracking Australia's Progress on the Sustainable Development Goals. Australian Government. Retrieved from: <https://www.dfat.gov.au/sites/default/files/sdgs-data-report-tracking-progress.pdf>

Australia has advanced the SDG agenda through other regional groupings such as the Pacific Islands Forum (PIF). As a member state, Australia was part of a Regional SDG Taskforce in 2016 to develop a Pacific Regional Roadmap for Sustainable Development for implementation, monitoring and reporting on the SDGs.⁹ This Roadmap was adopted by Australia in 2017 along with other PIF member states, with five regional indicators tailored to their development contexts.

The Australian government has also utilised its participation in the UN's specialised agencies to advance the SDG agenda. The Department of Foreign Affairs and Trade (DFAT) has used the SDGs as the basis for its official development assistance (ODA), 90 percent of which is directed towards countries in Southeast Asia and the Indo-Pacific region. For instance, the government supported the United Nations Economic and Social Commission for the Asia-Pacific (UNESCAP)'s Regional Road Map for implementing the 2030 SDG agenda. This roadmap included processes for implementation through regional cooperation and tracking progress in priority areas such as social development, disaster risk reduction, climate change, management of natural resources, connectivity and energy.¹⁰

Australia's commitment to the SDGs is thus a combination of aligning elements of the global agenda with its domestic and international engagement priorities and contributing technical expertise for supporting the data ecosystem.

INDIA'S COMMITMENTS TO THE SDGS

The Indian government has used the SDG framework for both its national development agenda and its international development cooperation. The Research and Information System for Developing Countries (RIS) set up by the Ministry of External Affairs has formulated Science, Technology and Innovation (STI) roadmaps for the SDGs. This initiative has enabled India to play a key role as a pilot country under the Global Pilot Program on STI for SDGs Roadmaps of the UN, which has been endorsed by the G20, to enhance global cooperation for a Technology Facilitation Mechanism (TFM) as laid out in the 2030 Agenda for Sustainable Development. The STI roadmaps aim to develop distinctive templates for engaging and contributing to SDGs both at the subnational and international levels.¹¹

The STI roadmaps have established a priority index of 62 key indicators to achieve India's SDG targets by 2030 at national and state levels. Although the SDG targets are not explicitly linked to international development assistance, the Indian government has focused on capacity-building and technical training (SDG 17) under the Indian Technical and Economic Cooperation (ITEC) program in African countries and neighbouring countries.¹² The ITEC program covers a range of sectors linked to the SDGs such as education (SDG 4), health (SDG 3), and hydropower and transport infrastructure projects (SDG 9).¹³



9 Department of Foreign Affairs and Trade (2018). Tracking Australia's Progress on the Sustainable Development Goals. Australian Government. Retrieved from: <https://www.dfat.gov.au/sites/default/files/sdgs-data-report-tracking-progress.pdf>

10 Ibid.

11 Office of the Principal Scientific Adviser to the Government of India. (2025). STI Roadmaps for SDGs. New Delhi: Government of India. Retrieved from: <https://www.psa.gov.in/sti-for-sdg>

12 Nainar, A. (2024). India's Foreign Assistance: Trends, Processes and Priorities. ORF America. Retrieved from: <https://orfamerica.org/newresearch/india-foreign-assistance-priorities>

13 Chakrabarty, M. (2022). Development Cooperation Towards the SDGs: The India Model. Observer Research Foundation. Retrieved from: <https://www.orfonline.org/research/development-cooperation-towards-the-sdgs-the-india-model>

The influence of security issues on India's development cooperation is also evident in the Indian Ocean Rim countries. Since the revitalisation of the Quad partnership between Australia, India, Japan and USA in 2017, the Indian government has enlarged the scope of its foreign policy and development assistance to the Indo-Pacific arena. In 2023, the Joint Statement of the Quad Foreign Ministers' Meeting expressed steadfast support for practical and responsive action in delivering SDG targets for the 2030 Agenda.¹⁴

The Indian government has also positioned itself as a lynchpin for Global South cooperation by establishing the India-UN Development Partnership Fund (India-UN Fund) for supporting South-owned and -led, demand-driven and transformational sustainable development projects in least developed countries (LDCs) and small island developing States (SIDS). It has committed \$150 million over 10 years to the India-UN Fund to address projects across all 17 SDGs. The Fund includes \$50 million under a separate Commonwealth Window, \$14 million dedicated to countries of the Caribbean Community, and \$12 million for Pacific Island Developing States. More than half of this fund has been used for completing projects focused on Good health and well-being (SDG 3), Quality education (SDG 4) and No poverty (SDG 1).¹⁵

India's commitment to the SDGs is in the development of a robust system of indicators aligned to the global agenda and using these to articulate its domestic developmental priorities and international cooperation initiatives.

HIGHER EDUCATION ENGAGEMENT WITH SDGS

The *Getting started with the SDGs in universities Guide* states that engaging with the SDGs has significant benefits for universities "by helping them demonstrate university impact, capture demand for SDG-related education, build new partnerships, access new funding streams, and define a university that is responsible and globally aware".¹⁶ It notes that there are considerable advantages in explicitly showing the links between research projects and equivalent SDGs to the global community and the contributions to knowledge, technologies, and innovation pathways for implementing SDGs.

AUSTRALIAN UNIVERSITIES AND SDGS

Most Australian universities have a formal and robust system of reporting their contributions towards the different SDGs. Several feature in the different global ranking systems in higher education. The Times Higher Education (THE) Global Impact Rankings assess social and economic contributions of universities around the world based on SDGs using research, stewardship, outreach and teaching metrics.¹⁷ In 2024, Australia had the highest number of universities among the top ten in the overall impact rankings:

- Western Sydney University (1st, ranked first in the world for the third consecutive year)
- University of Tasmania (jointly 2nd)
- RMIT University (5th), and
- University of New South Wales (7th)

In individual SDG areas, Western Sydney University ranked first for SDG 5 (Gender equality), RMIT University ranked first for SDG 10 (Reduced inequalities), the University of Tasmania ranked first for SDG 13 (Climate action), and University of Technology Sydney (UTS) ranked first for SDG 17 (Partnerships for the goals).

The QS World University Rankings: Sustainability 2025 uses indicators designed to measure an institution's ability to tackle the world's greatest environmental, social and governance (ESG) challenges. In these rankings, the University of Melbourne ranks ninth among the global top ten universities, followed by the University of Sydney (11th), UNSW (12th), University of Queensland (41st), and UTS (47th).¹⁸

14 Minister for Foreign Affairs (2023). Joint Readout of the Quad Foreign Ministers' Meeting. Australian Government. Retrieved from: <https://www.foreignminister.gov.au/minister/penny-wong/media-release/joint-readout-quad-foreign-ministers-meeting>

15 United Nations Office of South-South Cooperation (n.d.). India-UN Development Partnership Fund. Retrieved from: <https://indiaunfund.unsouthsouth.org>

16 The Sustainable Development Solutions Network. (n.d.). Getting started with the SDGs in Universities. Retrieved from: <https://ap-unsdsn.org/about/>

17 Study Australia (2024). Australian universities top global SDG Impact Rankings again. Australian Government. Retrieved from: <https://www.studyaustralia.gov.au/en/tools-and-resources/news/australian-universities-top-impact-rankings-again>

18 QS Top Universities (2025). QS World University Rankings: Sustainability 2025. Retrieved from: <https://www.topuniversities.com/sustainability-rankings>



The SDG agenda has also guided the formation of research centres and institutes at Australian universities. According to Australia's Voluntary National Review on the 2030 Agenda, these institutes and centres have pursued cross-disciplinary approaches that are clearly linked to the SDG agenda. Some examples include:

- University of Sydney's Planetary Health Platform
- University of Queensland's Global Change Institute
- Monash University's Sustainable Development Institute
- University of Technology Sydney's Institute for Sustainable Futures
- Australian National University's Climate Change Institute
- University of Melbourne's Sustainable Society Institute
- Curtin University's Sustainability Policy Institute, and
- Murdoch University's Centre for Responsible Citizenship and Sustainability

The alignment of research funding to the SDG agenda, however, presents a mixed picture. The Australian Centre for International Agricultural Research (ACIAR) contributes to 12 SDGs across 350 projects in 35 Indo-Pacific nations and frames its funding and research partnerships aligned with the SDG agenda.

The Commonwealth Scientific and Industrial Organisation (CSIRO) leads an international consortium of research institutes that curate a large global database which allows countries to report progress on SDG Indicators.¹⁹ The CSIRO has also collaborated with the Australian Council for International Development (ACFID) to increase awareness of SDGs within the country by providing tools for organisations and individuals to develop action plans for implementing SDGs.²⁰

Not all research funding is explicitly articulated in terms of the global SDG agenda. The Australian Government's National Science and Research Priorities defined by the Department of Industry, Science and Resources, the Australian Research Council (ARC), and the National Health and Medical Research Council (NHMRC) have identified different research priorities related to disciplinary fields of specialisation which can find equivalences in the SDGs. Although universities may include SDGs in their description of ARC or NHMRC funded projects, there are no built-in incentives for researchers to explicitly demonstrate alignment of their projects with the SDG agenda.

The high global impact ranking of Australian universities by SDGs is significant, but the links between these global impact rankings and research outputs and international (and, particularly for this study, Indian) research collaboration initiatives require further clarification.

19 Department of Foreign Affairs and Trade (2018). Tracking Australia's Progress on the Sustainable Development Goals. Australian Government. Retrieved from: <https://www.dfat.gov.au/sites/default/files/sdgs-data-report-tracking-progress.pdf>

20 Ibid.



INDIA'S HIGHER EDUCATION ENGAGEMENT WITH SDGs

India featured as the most-represented country in the 2024 THE Global Impact Rankings, with a total of 96 higher education and research institutions.²¹ The top five Indian universities in these rankings are:

1. Amrita Vishwa Vidyapeetham (81st)
2. JSS Academy of Higher Education and Research (101st-200th)
3. Lovely Professional University (101st-200th)
4. Manipal Academy of Higher Education (101st-200th), and
5. Shoolini University of Biotechnology and Management Sciences (101st-200th)

The SDG agenda in higher education in India has been advanced by the national government with particular emphasis on research and innovation in science and technology. The National Education Policy (NEP) 2020 explicitly references SDG 4 (Quality education), stating the commitment to reconfigure the entire education system “to support and foster learning, so that all of the critical targets and goals (SDGs) of the 2030 Agenda for Sustainable Development can be achieved”.²²

Some research funding schemes such as Impacting Research Innovation and Technology (IMPRINT) supported by the Department of Science and Technology and the Ministry of Education are explicitly framed in terms of national development and commitment to global SDGs.

Indian universities, particularly private institutions, have a notable presence in global impact rankings. Although India's higher education priorities have demonstrable links to the SDGs, there are no indicators or data showing the linkages to domestic research priorities or international research collaborations, particularly with Australia.

The Australia-India Strategic Research Fund (AISRF) launched in 2006 and has supported collaborative research between scientists at premier research institutions in India and Australia across a range of agreed priority areas.²³ The AISRF does not, however, explicitly link its research priorities to the SDG agenda. Its primary objectives are focused on building research capacity for collaborations aimed at technology development and potential commercialisation.

21 Times Higher Education (2024). Top universities pursuing sustainable development goals in 2024. Retrieved from: <https://www.timeshighereducation.com/impactrankings?page=1#>

22 Ministry of Human Resource Development (2020). National Education Policy 2020. New Delhi: Government of India. Retrieved from: https://www.education.gov.in/sites/upload_files/mhrd/files/NEP_Final_English_0.pdf

23 Department of Science and Technology (2022). Australia-India Strategic Research Fund. New Delhi: Government of India. Retrieved from: <https://dst.gov.in/sites/default/files/Guidelines%20%26%20Format.pdf>

2. METHODOLOGY

SUMMARY

KEY STEPS OF THE METHODOLOGY INCLUDED:

- Mapping Australian and Indian national research priorities across all SDGs
- Bibliometric analysis of joint-authored publications and network mapping
- Comparative analysis of joint-authored publications by SDGs across Australian university groupings
- Interviews with Australian researchers featuring in jointly authored publications across the top SDGs of activity
- A roundtable discussion of study findings with Australian university researchers and leadership, co-hosted by Universities Australia.

The methodology developed for this study includes four main components:

1. Mapping research priorities of the two countries against the SDGs;
2. Bibliometric and network analysis of joint-authored publications by Australian and Indian researchers;
3. Comparative analysis of joint-authored publications by SDGs by Australian university groupings;
4. Interviews with Australian researchers with the highest number of joint-authored publications in the leading SDGs from the bibliometric analysis; and
5. Roundtable co-hosted by Universities Australia to discuss the study findings with university leadership and academic researchers

Experts from the University of Melbourne Library system provided valuable advice for designing the bibliometric and network analysis of publications.²⁴

The methodology developed for this study relies exclusively on the Scopus database for identifying joint-authored publications between Australian and Indian researchers. The main focus of the study is on research collaborations resulting in joint-authored publications by researchers based at Australian universities. The bibliometric analysis, however, captures joint-authored publications by researchers based in both universities and non-teaching, government and industry research institutions and non-governmental organisations.

MAPPING NATIONAL RESEARCH PRIORITIES ACROSS SDGS

Since each SDG extends across a wide range of disciplinary areas, the mapping exercise sought to locate the Australian Government's National Science and Research Priorities and associated Practical Research Challenges within the interdisciplinary scope of the corresponding SDGs. Similarly, the interdisciplinary research areas prioritised by the Impacting Research Innovation and Technology (IMPRINT) Program of India's Ministry of Education and Department of Science and Technology were mapped against corresponding SDGs. The mapping exercise enabled the identification of SDG areas where the research priorities of the two countries showed significant overlaps. An additional layer of mapping included the research priority areas outlined by the Australia-India Strategic Research Fund (AISRF). The AISRF was specifically chosen because it represents national and domestic priorities of each country as well as those deemed important for Australia-India research cooperation. This process narrowed the focus on key SDG areas which reflected joint commitment for research funding and collaboration.

BIBLIOMETRIC ANALYSIS AND NETWORK MAPPING

The Scopus citation database was selected for conducting bibliometric analysis of publications jointly authored by researchers based in Australian and Indian institutions and universities. The time frame chosen was 2014–2024, roughly corresponding to the decade when the SDGs have been in effect. The bibliometric analysis was carried out in two steps through several iterations, summarised below.

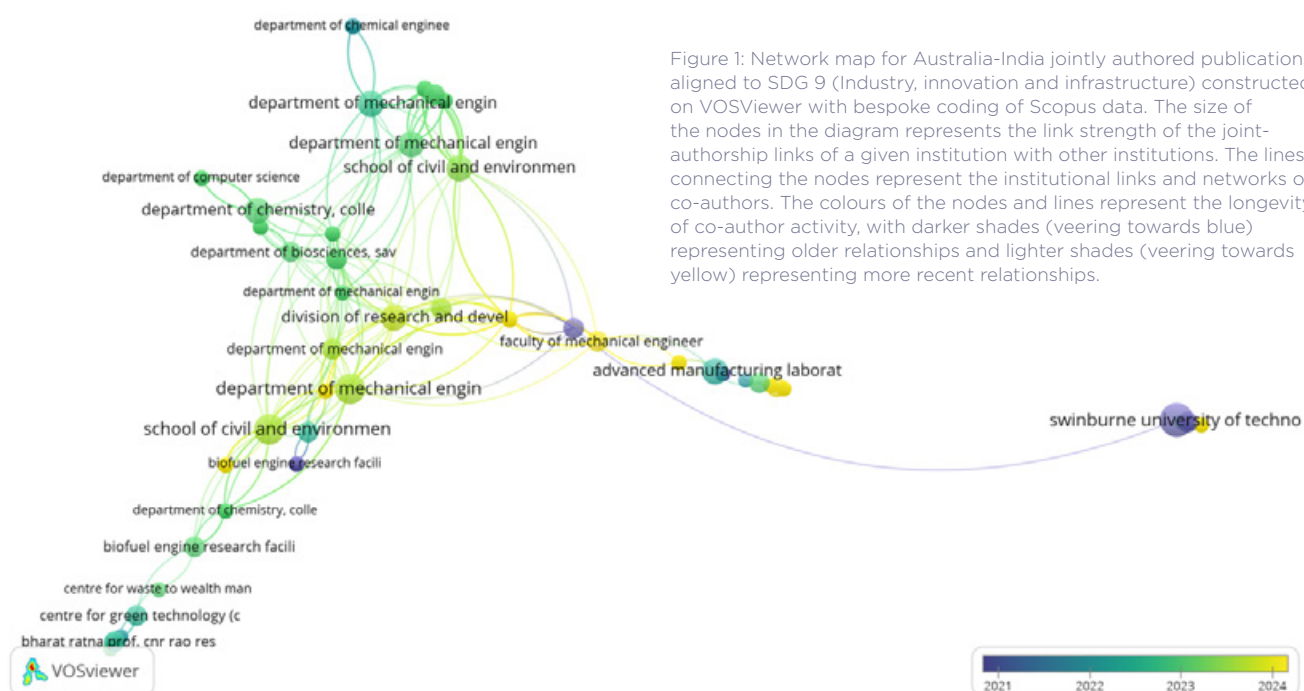
²⁴ We are grateful to the library experts at the University of Melbourne for providing critical guidance in assessing different publication databases and conducting the bibliographic analysis.

The Scopus platform enables search of publications by exhaustive queries of SDG keywords. The research team combined these queries with bespoke coding to identify multi-author publications which had significant roles of Australian and Indian researchers in the collaboration. The bibliometric analysis also captured joint-authored publications that did not explicitly align the research to specific SDGs but could be linked to the relevant Goals. The coding details are provided in Appendix 1.

Step 1: The open coding platform and existing SDG queries provided by Scopus served as the starting point. The initial search for joint publications using coded combinations of SDG queries with authorship based at Australian and Indian institutions produced a number of results in which researchers of the two countries were part of larger, global multi-country collaborative studies. When these results were viewed in the network maps produced on VOSviewer, it became clear that the results were confounded by publications where Australia- and India-based authors were in the minority, and where the dominant research nodes were in countries other than Australia and India. Multiple iterations of coding filtered out other countries for each SDG query until the network maps clearly showed joint publications where the bilateral research collaboration was prominent.

Step 2: The results of early iterations were visualised using a range of network mapping tools developed by large publication data aggregators such as Symplectic and Elsevier, open-source data aggregators such as OpenAlex, and the SDG Research Dashboard methods developed by the Aurora partnership of research-intensive European universities, and VOSviewer. OpenAlex was used primarily for data on joint publications stemming from research funded by the Australia-India Strategic Research Fund (AISRF).

VOSviewer was chosen for its user-friendly interface, intuitive platform, and ability to visualise Scopus data effectively. The results for every iteration of revised code for each of the SDG queries were exported as CSV files for producing network maps with VOSviewer. The primary unit of analysis was organisations rather than individuals and limited to a maximum number of 25 organisations per publication. The iterations selected all Australian and Indian organisations for visualising network maps encompassing both large and small nodes of connections for joint authorship. The final network map for SDG 9 (Industry, innovation and infrastructure) is provided below as an example of the interactive interface where the institutional nodes and their interconnections were used to identify individual authors of joint publications.





The Australia India Institute's research team, Associate Professor Haripriya Rangan, Dr Ujjwal Krishna and Ms Hiya Harinandini present their research findings at the roundtable

COMPARATIVE ANALYSIS OF JOINT PUBLICATIONS BY SDGS ACROSS AUSTRALIAN UNIVERSITY GROUPINGS

The Scopus database was used to construct a relative activity (RAI) chart on SciVal for a preliminary understanding of all Australian and all Indian research outputs across each SDG. This served as a useful context for gauging whether the major SDGs emerging from the bibliometric and network analysis of Australia-India joint publications corresponded with the SDG patterns for each country's research publications.²⁵

Publicly available information on bilateral research collaborations and the 2022 Universities Australia database of research partnership agreements compiled by AII for the Compendium on *Mapping Higher Education Engagement between Australia and India* was used to identify Australian universities with ongoing research partnership agreements with public and private higher education institutions in India. This data provided additional context for comparative analysis of research collaborations by SDGs and Australian university groupings.

The bibliometric analysis provided a ranking of SDGs by the largest number of jointly authored publications produced by Australian university researchers with their Indian institutional counterparts. The top ten SDGs identified through this process were used for comparative analysis to reveal the patterns of collaborative research around SDG themes by universities and main Australian university groups of the Group of Eight (Go8), Australian Technology Network (ATN), Innovative Research Universities (IRU) and Regional Universities Network (RUN). Universities that were not part of these groups were combined as a 'Non-Aligned Group'.

²⁵ The SciVal Relative Activity Index (RAI) is defined as: the share of an entity's publications in a subject area, relative to the global share of publications in the same subject. A value of 1.0 indicates that the entity's research activity in a field corresponds exactly with the global activity in that field; a value higher than 1.0 implies a greater emphasis; and a value lower than 1.0 suggests a lesser focus. For the Sustainable Development Goals (SDGs), the RAI is calculated by looking at the total publications an entity has for an SDG, divided by the total publications for the same entity, to create a percentage. The same calculations are done for each SDG for the World. The index for the entity is calculated by dividing the entity's percentage by that of the World.



Universities Australia CEO Luke Sheehy and Australia India Institute CEO Lisa Singh at the roundtable presentation

AUSTRALIAN RESEARCHER INTERVIEWS

The Australian researchers producing joint publications with their Indian counterparts were identified based on the bibliometric and network analysis. The Scopus database provides details of author names, affiliations (their institutions), funding sources for the published research, and year of publication. The bibliometric analysis identified the top five and middle five SDGs based on the number of joint publications from which the top five Australian authors with the most publications in these SDGs were chosen for interviews. The researchers were contacted via email and invited to participate in a semi-structured, one-hour interview. The interview explored the dynamics, causes, challenges, and opportunities of their involvement with Australia-India research collaboration, as well as the nature of their engagement with the SDG agenda.

RESEARCH ROUNDTABLE WITH KEY AUSTRALIAN UNIVERSITY RESEARCHERS AND LEADERS

The study findings were presented at a roundtable co-hosted by AII and Universities Australia at University of Technology Sydney on 10 December. The hybrid event invited research leadership from all Australian universities, the Department of Education (DE), Department of Industry, Science and Resources (DISR), and other key research organisations such as the CSIRO to provide feedback on the study findings and share their approaches for promoting the SDG agenda in their research activities. Their feedback has been incorporated in the final production of the report.

3. AUSTRALIA-INDIA COLLABORATIONS BY SDGS

SUMMARY

- The top five SDG areas emerging from the bibliometric analysis are (in order of ranking): **Good health and well-being (SDG 3); Affordable and clean energy (SDG 7); Industry, innovation and infrastructure (SDG 9), Clean water and sanitation (SDG 6); and Zero hunger (SDG 2).** The top three overlap with key national research priorities of each country.
- **SDG 13 (Climate Action); SDG 12 (Responsible consumption and production); SDG 8 (Decent work and economic growth); SDG 11 (Sustainable cities and communities); and SDG 17 (Partnership for the goals)** emerge as the middle five SDG group, showing potential for future collaboration.
- International funding sources had higher representation in joint-authored publications grouped in the top five and middle five SDGs compared to Australian domestic funding, Indian domestic funding, and Australia-India bilateral funding sources.
- Within the top five SDG areas, Go8 universities lead with the greatest number of joint-authored publications in Good health and well-being (SDG 3), Affordable and clean energy (SDG 7), and Zero hunger (SDG 2). ATN universities lead in joint authored publications in Clean water and sanitation (SDG 6) and Industry, innovation and infrastructure (SDG 9).
- Within the middle five SDG areas, Go8 universities lead in Climate action (SDG 13), Decent work and economic growth (SDG 8), Sustainable cities and communities (SDG 11) and Partnerships for the goals (SDG 17). ATN universities lead in Responsible production and consumption (SDG 12).



MAPPING NATIONAL RESEARCH PRIORITIES AGAINST SDGS

National research priorities and SDGs are not always clearly aligned. While countries may support the global SDG agenda as part of their foreign policy, they may not seek to explicitly link their national research priorities with it.

The mapping exercise examined the Australian Government's National Science and Research Priorities that guide schemes such as the Australian Research Council (ARC) and other similar research funding bodies, the Indian government's Impacting Research Innovation and Technology scheme (IMPRINT), which explicitly declares the objective of pursuing research for achieving the SDGs), and the Australia-India Strategic Research Fund (AISRF). These three schemes were used as the context for examining the linkages between the identified research priority areas and the SDGs. These research priorities are listed in Table 2 below.

AUSTRALIAN GOVERNMENT NATIONAL SCIENCE RESEARCH PRIORITIES	IMPRINT	AISRF
1. Transitioning to a net zero future 2. Supporting healthy and thriving communities 3. Elevating Aboriginal and Torres Strait Islander knowledge systems 4. Protecting and restoring Australia's environment, and 5. Building a secure and resilient nation	1. Energy security 2. Environment and climate 3. Healthcare technology 4. Sustainable habitat 5. Water resources 6. Advanced materials 7. Information and communications technology 8. Manufacturing technology 9. Nanotechnology 10. Security and defence	1. Agriculture 2. Astronomy and astrophysics 3. Biomedical devices and implants 4. Clean energy technologies 5. Food and water security 6. Information and communication technology 7. Marine sciences 8. Nanotechnology 9. Stem cells and vaccines

Table 2: Research priorities of the Australian Government, the IMPRINT program, and the AISRF

Since the SDGs are broadly framed and cut across several disciplinary areas and fields of research, each research priority was scored against a single closest corresponding SDG. This ensured there was no double counting. The scores were then aggregated for comparative analysis. The scoring exercise excluded SDG 17 (Partnership for the goals) because it cannot be substantively aligned with any single SDG in this context. However, SDG 17 is accounted for in the ensuing bibliometric analysis and network mapping.

SDG 9 (Industry, innovation and infrastructure) emerged as the front-runner in this exercise, indicating the overwhelming orientation of national research priorities to this Goal. SDG 3 (Good health and well-being), SDG 12 (Responsible Consumption and Production), and SDG 14 (Life below water) were all tied for second place, while SDG 7 (Affordable and Clean Energy) ranked third. The scores also show differences in domestic priorities between the two countries. SDG 12 appears to have greater emphasis in the Australian context, while SDG 7 has greater importance in the Indian context. The AISRF scores reflect higher bilateral commitment to SDG 3, and a balancing of domestic priorities in SDG 12.

SDG	AUSTRALIAN GOVERNMENT	IMPRINT	AISRF	TOTAL COUNT
SDG1 - No Poverty	0	0	0	0
SDG2 - Zero Hunger	1	0	1	2
SDG3 - Good Health and Well-Being	1	1	4	6
SDG4 - Quality Education	0	0	0	0
SDG5 - Gender Equality	0	0	0	0
SDG6 - Clean Water and Sanitation	1	2	1	4
SDG7 - Affordable and Clean Energy	1	3	1	5
SDG8 - Decent Work and Economic Growth	1	0	0	1
SDG9 - Industry, Innovation and Infrastructure	3	4	1	8
SDG10 - Reduced Inequalities	0	0	0	0
SDG11 - Sustainable Cities and Communities	2	1	0	3
SDG12 - Responsible Consumption and Production	3	1	3	7
SDG13 - Climate Action	1	1	0	2
SDG14 - Life Below Water	1	3	2	6
SDG15 - Life on Land	1	2	0	3
SDG16 - Peace, Justice and Strong Institutions	1	0	0	1
SDG17 - Partnerships for the goals	N/A	N/A	N/A	N/A

Table 3: Scoring research priorities against the SDGs

BIBLIOMETRIC ANALYSIS AND NETWORK MAPPING

The Relative Activity Index chart (RAI; Figure 2) offers a useful context against which the joint authored publications between Australian and Indian researchers can be compared. The chart presents the overall number of publications emerging from a country relative to global publications for every given SDG. The scores do not represent absolute values. A score less than 1.0 indicates a lesser number of publications for a given SDG relative to the global average, while a score greater than 1.0 implies a greater proportion compared with the global average.

The RAI chart shows some overlaps between the two countries for publications relating to SDG 12 (Responsible consumption and production), and to a lesser degree, in SDG 2 (Zero hunger), SDG 3 (Good health and well-being), SDG 8 (Decent work and economic growth), and SDG 9 (Industry, innovation and infrastructure). Two of these overlaps (SDG 3 and SDG 8) sit close to the global average, and two above the global average (SDG 2 and SDG 12).

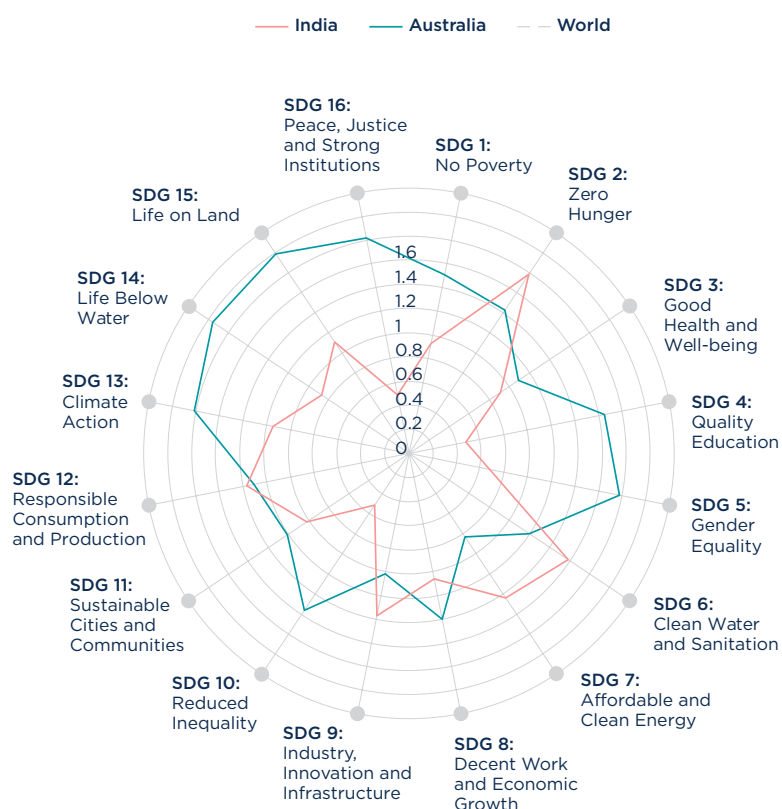


Figure 2: Relative Activity Index (RAI) of research publications emerging from Australia and India weighed against the global average for each of the seventeen SDGs (prepared using Scopus data on SciVal)



The joint-authored research published between 2014 and 2024 by the SDGs are shown in Figure 3.

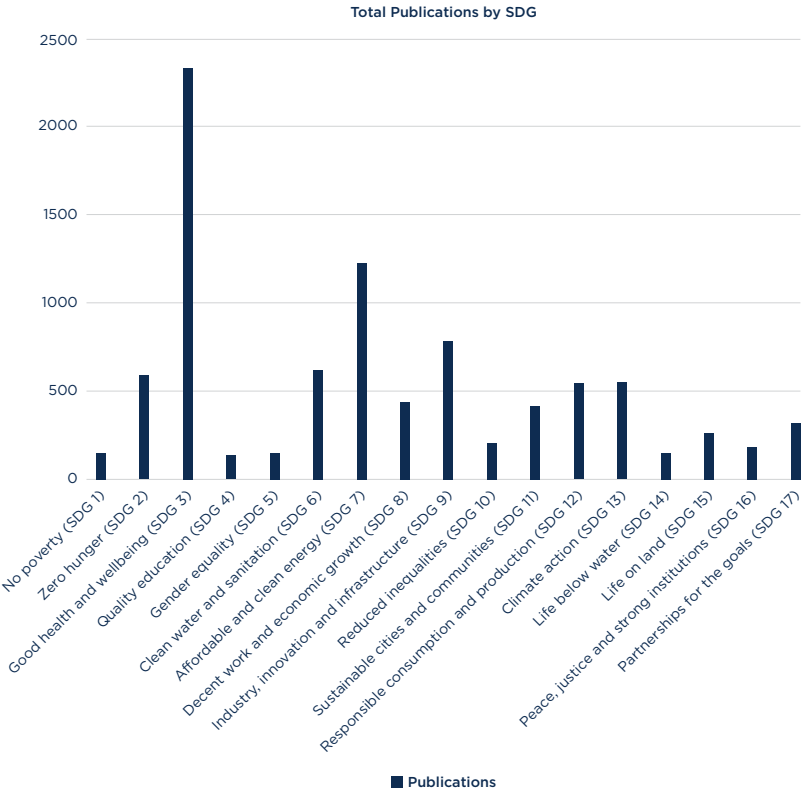


Figure 3: Publications jointly authored by researchers based in Indian and Australian institutions under each of the seventeen SDGs (based on Scopus bibliometric data)



The bibliometric analysis indicates that SDG 3 (Good health and well-being) and SDG 7 (Affordable and clean energy) are front-runners by a considerable margin. The top five and middle five SDGs by number of joint-authored publications are shown in Tables 4a and 4b.

The bibliometric data for the top five SDGs was further analysed to identify the Australian and Indian universities and institutions to which researchers were affiliated. (Tables 5a-5e; 6a-6e).

TOP 5 SDGS (RANKED)	TOTAL NUMBER OF JOINT-AUTHORED PUBLICATIONS
1. Good health and well-being (SDG 3)	2342
2. Affordable and clean energy (SDG 7)	1232
3. Industry, innovation and infrastructure (SDG 9)	783
4. Clean water and sanitation (SDG 6)	616
5. Zero hunger (SDG 2)	586

MIDDLE 5 SDGS (RANKED)	TOTAL NUMBER OF JOINT-AUTHORED PUBLICATIONS
Climate action (SDG 13)	546
Responsible consumption and production (SDG 12)	539
Decent work and economic growth (SDG 8)	433
Sustainable cities and communities (SDG 11)	414
Partnerships for the goals (SDG 17)	317

Tables 4a and 4b: Top five and middle SDGs for Australia-India joint-authored research publications

AUSTRALIA

5A. GOOD HEALTH AND WELL-BEING (SDG 3)

UNIVERSITY	TOTAL NUMBER OF PUBLICATIONS
University of Technology Sydney	342
UNSW Sydney	230
The University of Sydney	210
University of Melbourne	184
Deakin University	154

5B. AFFORDABLE AND CLEAN ENERGY (SDG 7)

UNIVERSITY	TOTAL NUMBER OF PUBLICATIONS
RMIT University	149
Monash University	140
University of Technology Sydney	129
Deakin University	95
UNSW Sydney	88

5C. INDUSTRY, INNOVATION AND INFRASTRUCTURE (SDG 9)

UNIVERSITY	TOTAL NUMBER OF PUBLICATIONS
University of Technology Sydney	91
Monash University	71
Curtin University	69
RMIT University	63
Deakin University	57

5D. CLEAN WATER AND SANITATION (SDG 6)

UNIVERSITY	TOTAL NUMBER OF PUBLICATIONS
University of Technology Sydney	84
The University of Newcastle, Australia	58
RMIT University	43
Deakin University	43
The University of Sydney	39

5E. ZERO HUNGER (SDG 2)

UNIVERSITY/INSTITUTION	TOTAL NUMBER OF PUBLICATIONS
The University of Queensland	97
The University of Western Australia	85
Commonwealth Scientific and Industrial Research Organisation	46
The University of Sydney	41
Deakin University	33

Tables 5a - 5e: Top five Australian universities and institutions by number of publications for the top 5 SDGs

INDIA

6A. GOOD HEALTH AND WELL-BEING (SDG 3)

UNIVERSITY/INSTITUTION	TOTAL NUMBER OF PUBLICATIONS
Lovely Professional University	178
Manipal Academy of Higher Education	136
Suresh Gyan Vihar University	131
Saveetha Institute of Medical and Technical Sciences	122
Christian Medical College, Vellore	118

6B. AFFORDABLE AND CLEAN ENERGY (SDG 7)

UNIVERSITY/INSTITUTION	TOTAL NUMBER OF PUBLICATIONS
Indian Institute of Technology Bombay	129
IITB-Monash Research Academy	90
Academy of Scientific and Innovative Research AcSIR	66
Vellore Institute of Technology	62
Indian Institute of Technology Delhi	55
Council of Scientific and Industrial Research India	41

6C. INDUSTRY, INNOVATION AND INFRASTRUCTURE (SDG 9)

UNIVERSITY/INSTITUTION	TOTAL NUMBER OF PUBLICATIONS
Indian Institute of Technology Bombay	65
Indian Institute of Technology Delhi	37
IITB-Monash Research Academy	36
Indian Institute of Technology Madras	33
Lovely Professional University	30
Indian Institute of Technology Kharagpur	21

6D. CLEAN WATER AND SANITATION (SDG 6)

UNIVERSITY/INSTITUTION	TOTAL NUMBER OF PUBLICATIONS
Sri Krishnadevaraya University	24
Indian Institute of Technology Kharagpur	23
Academy of Scientific and Innovative Research (AcSIR)	23
Institute of Minerals and Materials Technology India	19
Council of Scientific and Industrial Research India	18

6E. ZERO HUNGER (SDG 2)

UNIVERSITY/INSTITUTION	TOTAL NUMBER OF PUBLICATIONS
Indian Council of Agricultural Research	66
ICAR - Indian Agricultural Research Institute, New Delhi	55
Punjab Agricultural University	38
ICAR - Indian Institute of Soil Science, Bhopal	23
ICAR - National Bureau of Plant Genetic Resources, New Delhi	21

Tables 6a - 6e: Top Indian universities and research institutions by number of publications for the top 5 SDGs

The bibliometric data for the middle five SDGs was also analysed to identify the Australian and Indian universities and institutions to which researchers were affiliated (Tables 7a-7e; 8a-8e).

AUSTRALIA

7A. CLIMATE ACTION (SDG 13)

UNIVERSITY/INSTITUTION	TOTAL NUMBER OF PUBLICATIONS
University of Queensland	57
Monash University	49
University of Technology Sydney	41
RMIT University	37
Commonwealth Scientific and Industrial Research Organisation (CSIRO)	35

7B. RESPONSIBLE CONSUMPTION AND PRODUCTION (SDG 12)

UNIVERSITY/INSTITUTION	TOTAL NUMBER OF PUBLICATIONS
University of Technology Sydney	54
RMIT University	52
Deakin University	45
University of Queensland	44
Monash University	43

7C. DECENT WORK AND ECONOMIC GROWTH (SDG 8)

UNIVERSITY/INSTITUTION	TOTAL NUMBER OF PUBLICATIONS
University of Queensland	32
Monash University	29
University of Technology Sydney	29
Deakin University	24
University of Newcastle, Australia	23

7D. SUSTAINABLE CITIES AND COMMUNITIES (SDG 11)

UNIVERSITY/INSTITUTION	TOTAL NUMBER OF PUBLICATIONS
UNSW Sydney	44
University of Technology Sydney	38
University of Melbourne	34
Monash University	29
Deakin University	25

7E. PARTNERSHIPS FOR THE GOALS (SDG 17)

UNIVERSITY/INSTITUTION	TOTAL NUMBER OF PUBLICATIONS
University of Technology Sydney	34
University of Melbourne	24
UNSW Sydney	24
Monash University	18
University of Queensland	17

Tables 7a - 7e: Top five Australian universities and institutions by number of publications for the middle five SDGs

INDIA

8A. CLIMATE ACTION (SDG 13)

UNIVERSITY/INSTITUTION	TOTAL NUMBER OF PUBLICATIONS
Indian Institute of Technology Bombay	46
IITB-Monash Research Academy	34
International Crops Research Institute for the Semi-Arid Tropics (ICRISAT)	31
Indian Council of Agricultural Research (ICAR)	29
Indian Agricultural Research Institute (ICAR-IARI), New Delhi	21
Academy of Scientific and Innovative Research (AcSIR)	17

8B. RESPONSIBLE CONSUMPTION AND PRODUCTION (SDG 12)

UNIVERSITY/INSTITUTION	TOTAL NUMBER OF PUBLICATIONS
Indian Institute of Technology Bombay	31
IITB-Monash Research Academy	25
Indian Council of Agricultural Research (ICAR)	23
Indian Institute of Technology Kharagpur	21
Council of Scientific and Industrial Research (CSIR) India	15
Indian Institute of Technology Madras	15

8C. DECENT WORK AND ECONOMIC GROWTH (SDG 8)

UNIVERSITY/INSTITUTION	TOTAL NUMBER OF PUBLICATIONS
Indian Council of Agricultural Research (ICAR)	21
Indian Institute of Technology Bombay	17
International Crops Research Institute for the Semi-Arid Tropics (ICRISAT)	14
ICAR - Indian Agricultural Research Institute, New Delhi	13
IITB-Monash Research Academy	13
Sri Krishnadevaraya University	11
TERI School of Advanced Studies	11

8D. SUSTAINABLE CITIES AND COMMUNITIES (SDG 11)

UNIVERSITY/INSTITUTION	TOTAL NUMBER OF PUBLICATIONS
Indian Institute of Technology Kharagpur	26
Indian Institute of Technology Bombay	17
Vellore Institute of Technology	14
IITB-Monash Research Academy	14
University of Calcutta	13
Indian Institute of Science	11

8E. PARTNERSHIPS FOR THE GOALS (SDG 17)

UNIVERSITY/INSTITUTION	TOTAL NUMBER OF PUBLICATIONS
Amity University	11
Indian Institute of Technology Kharagpur	10
O.P. Jindal Global University	9
Indian Institute of Technology Madras	8
Indian Institute of Technology Bombay	7

Tables 8a - 8e: Top Indian universities and research institutions by number of publications for the middle five SDGs



FUNDING SOURCES FOR AUSTRALIA-INDIA JOINT-AUTHORED PUBLICATIONS

The funding sources of jointly authored publications in the top five and middle five SDGs provide some notable insights. For the top five SDGs, SDG 3 and SDG 2 are the only two which show more funding from Australian and Indian sources than international funding sources. Australia-India bilateral funding sources, whether from government programs or schemes (national and state level), private, and nonprofit sectors, play a very minimal role compared to the other funding sources.

The top domestic funding sources on the Australian side across the top ten SDGs were the ARC, NHMRC, Deakin University, UTS, RMIT University, ACIAR, and the Grains Research and Development Corporation.

On the Indian side, the top funding sources were the Government of India's Department of Science and Technology (DST), Department of Biotechnology (DBT), Ministry of Education, the Council for Scientific and Industrial Research (CSIR), Science and Engineering Research Board, Indian Council for Medical Research (ICMR), University Grants Commission (UGC), and Indian Council for Agricultural Research (ICAR).

The top international funding sources were the National Institute of Allergy and Infectious Diseases (US), National Research Foundation of Korea, King Faisal University, King Saud University, and Bill & Melinda Gates Foundation. Bilateral funding sources were the Australia-India Strategic Research Fund (AISRF), followed by the IITB-Monash Research Academy.

SUSTAINABLE DEVELOPMENT GOALS (SDG)	AUSTRALIAN DOMESTIC FUNDING SOURCES	INDIAN DOMESTIC FUNDING SOURCES	INTERNATIONAL FUNDING SOURCES	BILATERAL FUNDING SOURCES
Good health and well-being (SDG 3)	55	52	50	2
Affordable and clean energy (SDG 7)	46	45	65	3
Industry, innovation and infrastructure (SDG 9)	38	53	67	1
Clean water and sanitation (SDG 6)	45	45	63	2
Zero hunger (SDG 2)	58	51	49	1

Table 9a: Funding sources for joint-authored publications for the top 5 SDGs



The trend was similar for joint-authored publications in the middle five SDGs except SDG 17, which received more funding from Australian domestic sources.

The top ten funders for the middle five SDG areas on the Australian side were the ARC, Deakin University, RMIT University, ACIAR, CSIRO, the Australian Government, UTS, Curtin University of Technology, NHMRC, and the University of Melbourne. The ten leading Indian funders included the DST, Science and Engineering Research Board, CSIR, DBT, ICAR, UGC, the Government of India's Ministry of Education, and the Government of West Bengal's Department of Science and Technology. AISRF was the leading bilateral funding source.

The Bill & Melinda Gates Foundation, King Saud University and National Research Foundation of Korea were among the leading international funders of joint publications under the middle five SDGs.

The funding source analysis based on the bibliometric data generated for this study broadly indicates the importance of international funding sources for joint-authored publications in the top- and middle-five SDGs. Except for SDGs 3, 2, and 17, all other SDGs had a larger number of joint-authored publications acknowledging international funding sources. Australian and Indian domestic funding sources are relatively balanced across the top five SDGs, except for SDG 9, where Indian domestic funding has substantially higher representation. Australian domestic funding is higher than Indian domestic funding for SDG 17.

SUSTAINABLE DEVELOPMENT GOALS (SDG)	AUSTRALIAN FUNDING SOURCES	INDIAN FUNDING SOURCES	INTERNATIONAL FUNDING SOURCES	BILATERAL FUNDING SOURCES
Climate action (SDG 13)	44	43	69	2
Responsible consumption and production (SDG 12)	48	47	62	2
Decent work and economic growth (SDG 8)	45	40	46	3
Sustainable cities and communities (SDG 11)	50	43	61	2
Partnerships for the goals (SDG 17)	43	24	37	1

Table 9b: Funding sources for joint-authored publications for the middle five SDGs

COMPARATIVE ANALYSIS OF SDG JOINT-AUTHORED PUBLICATIONS BY AUSTRALIAN UNIVERSITY GROUPINGS

The bibliometric data was further used to assess the distribution of joint-authored publications by leading SDGs across Australian university groupings (Table 7). The Group of Eight (Go8) includes some of the oldest and research-intensive universities.

The Innovative Research Universities (IRU) represents a group of universities that were established during the 1960s and 1970s. The Australian Technology Network (ATN) comprises universities that originated as institutes of technology. The Regional Universities Network (RUN) have their main campuses in regional Australia. There are several universities that are not aligned to any of these groupings. For purposes of this analysis, these were grouped together as unaligned universities.²⁶

SDG	GO8	IRU	ATN	RUN	UNALIGNED
No poverty (SDG 1)	88	25	27	7	6
Zero hunger (SDG 2)	317	93	124	33	30
Good health and well-being (SDG 3)	1083	228	896	42	260
Quality education (SDG 4)	37	21	23	5	22
Gender equality (SDG 5)	75	18	22	2	6
Clean water and sanitation (SDG 6)	192	64	276	24	99
Affordable and clean energy (SDG 7)	494	90	438	8	176
Decent work and economic growth (SDG 8)	164	60	131	26	67
Industry, innovation and infrastructure (SDG 9)	267	48	348	23	109
Reduced inequalities (SDG 10)	115	36	43	7	16
Sustainable cities and communities (SDG 11)	166	48	132	12	71
Responsible consumption and production (SDG 12)	178	41	243	23	66
Climate action (SDG 13)	243	52	164	24	45
Life below water (SDG 14)	49	20	57	10	2
Life on land (SDG 15)	83	45	108	10	16
Peace, justice, and strong institutions (SDG 16)	77	21	49	11	11
Partnerships for the goals (SDG 17)	136	36	87	18	54

Table 10: Number of Australia-India jointly authored publications by Australian university groupings (Go8, IRU, ATN, RUN, and non-aligned universities as a group) by SDG

²⁶ Go8 constituent universities: the University of Adelaide, the Australian National University, the University of Melbourne, Monash University, the University of New South Wales, the University of Queensland, the University of Sydney, and the University of Western Australia
 IRU constituent universities: Charles Darwin University, James Cook University, Griffith University, La Trobe University, Flinders University, Murdoch University, Western Sydney University, and the University of Canberra
 ATN constituent universities: Curtin University, Deakin University, RMIT University, University of Newcastle, University of South Australia, and University of Technology Sydney
 RUN constituent universities: Central Queensland University, Charles Sturt University, Federation University Australia, Southern Cross University, University of New England, University of Southern Queensland, and University of the Sunshine Coast
 Unaligned universities: Australian Catholic University, Bond University, Edith Cowan University, Macquarie University, Swinburne University of Technology, Torrens University, University of Notre Dame, University of Tasmania, University of Wollongong, and Victoria University

Table 11 and Figure 4 illustrate the relative distribution of the most join-authored publications for the top five SDG categories.

SDG	GO8	IRU	ATN	RUN	UNALIGNED
Good health and well-being (SDG 3)	1083	228	896	42	260
Affordable and clean energy (SDG 7)	494	90	438	8	176
Industry, innovation and infrastructure (SDG 9)	267	48	348	23	109
Clean water and sanitation (SDG 6)	192	64	276	24	99
Zero hunger (SDG 2)	317	93	124	33	30

Table 11: Number of Australia-India joint-authored publications by Australian university groupings (Go8, IRU, ATN, RUN, and non-aligned universities as a group) by top five SDGs

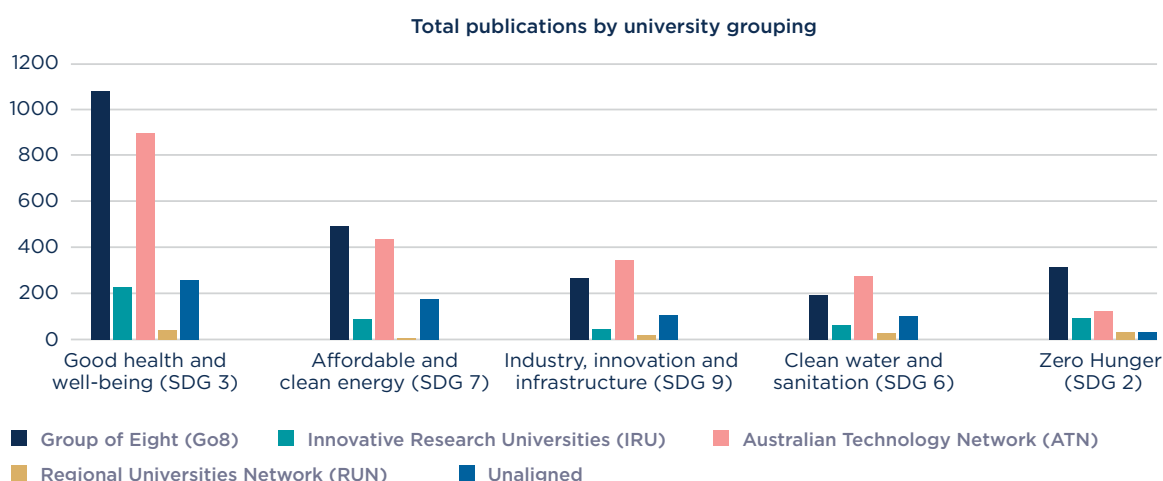


Figure 4: Australia-India joint-authored publications by Australian university groupings (Go8, IRU, ATN, RUN, and non-aligned universities as a group) for the top five SDGs of activity

Table 12 and Figure 5 illustrate the relative distribution of the most joint-authored publications for the middle five SDG categories.

SDG	GO8	IRU	ATN	RUN	UNALIGNED
Climate action (SDG 13)	243	52	164	24	45
Responsible consumption and production (SDG 12)	178	41	243	23	66
Decent work and economic growth (SDG 8)	164	60	131	26	67
Sustainable cities and communities (SDG 11)	166	48	132	12	71
Partnerships for the goals (SDG 17)	136	36	87	18	54

Table 12: Number of Australia-India jointly authored publications by Australian university groupings (Go8, IRU, ATN, RUN, and non-aligned universities as a group) for the middle five SDGs of activity



Total publications by university grouping

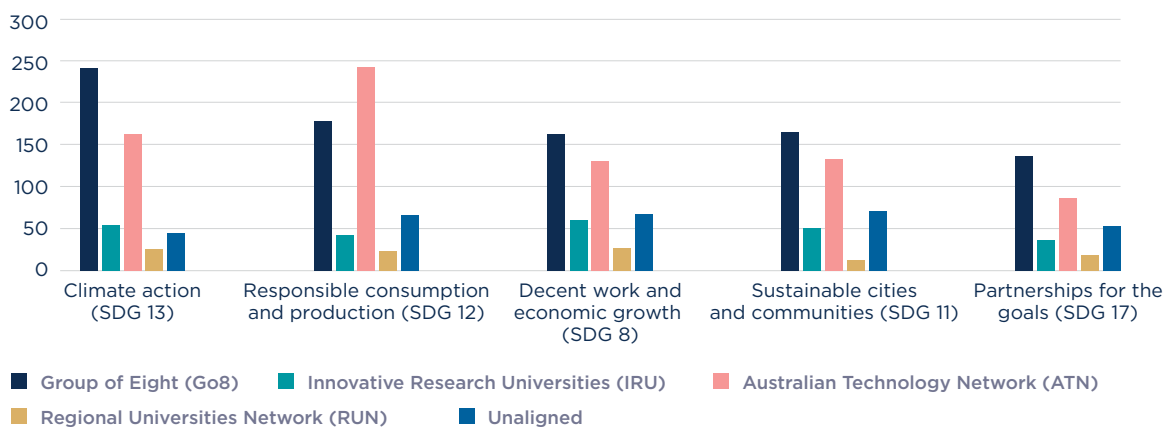


Figure 5: Australia-India joint-authored publications by Australian university groupings (Go8, IRU, ATN, RUN, and non-aligned universities as a group) for the middle five SDGs of activity

The comparison shows the dominance of the Go8 and ATN universities across the top five SDGs, followed by the IRU group. The ATN group leads all others for SDG 6 and SDG 9. The unaligned universities collectively demonstrate strong joint-publication outputs across four out of five top SDGs.

The strong performance of Go8 and ATN universities is reflected in the distribution of leading institutions across the top five SDGs. The middle five SDGs were initially included to cross-check the over-representation of the Go8 and ATN groupings. The distribution for the middle five SDGs followed the pattern of the top five SDGs and showed the lead in joint-publication outputs split between Go8 and ATN universities.



4. INSIGHTS FROM AUSTRALIAN UNIVERSITY RESEARCHERS LEADING THE JOINT-AUTHORED PUBLICATIONS BY TOP SDGS

SUMMARY

- Absence of clear incentives and standardised methodology in Australian funding schemes constrains researchers from systematically integrating the SDG agenda in their collaborative work.
- Inadequate understanding of Indian university research systems and cultural factors limit the expansion of bilateral collaboration in areas of mutual interest.
- Environment for interdisciplinary collaboration is not adequately supported across the Australian higher education and research ecosystem.
- Diaspora identity and informal linkages are key drivers for Australia-based researchers to engage with their Indian counterparts.
- Administrative hurdles within university systems of both countries can constrain researchers from pursuing new collaborative projects.
- Early- and mid-career researchers from India comprise a critically important talent pool that is most proactive about building networks in Australia.

Based on the bibliometric analysis, network mapping, and comparative analysis, Australia-based researchers with the most joint-authored publications with India-based researchers for the top five and middle five SDGs were approached for semi-structured interviews. Researchers across various Australian university groupings were approached to ensure equal representation and diversity of voices. All interviews were conducted online.

The main themes covered through these interviews focused on the nature of Australia-based researchers' engagement and links with India-based researchers, the motivations and incentives for collaboration, sources of funding, differences in research cultures, and the value of SDGs in their research. The interviews also sought to understand how their research was situated within their disciplines and universities, and the researchers' reflections on experiences of successes and failures in collaborating with their counterparts in Indian higher education institutions.

Five broad themes emerged from the coding and analysis of these qualitative interviews. These were:

1. Individualistic efforts of Australia-based researchers to engage with India-based researchers;
2. Limited incentives and rationale for engaging with their Indian counterparts;
3. The role of descent and networks in the motivations of Indian diaspora researchers;
4. Bilateral administrative bottlenecks; and
5. Career level and agenda setting in research engagement.



INDIVIDUALISTIC EFFORTS

Very few of the Australia-based researchers consciously chose to align their work with the SDGs. They pointed out that national research priorities do not explicitly identify their relationship or alignment with global SDGs. Nor are there any significant internal institutional, disciplinary and cultural drivers within Australian universities for aligning individual researchers' interests with the SDG agenda. A few respondents noted that it was their personal choice to explicitly state how their research aligned with the SDG agenda so that it would have broader international resonance. With respect to India, a mid-career researcher remarked:

"I would emphasise on the aligning of the research, strategic research areas, many of the Indian universities, or Indian especially, state universities, for example, they do not have that kind of global or national research priority. They do not follow very strict areas. So they do traditional [research] which was probably important one or two decades ago. They still grip on that sort of approach, so that needs to be changed."

A senior researcher described the key constraint of funding structures not being aligned with the SDGs despite their efforts at exploring research opportunities with international academics. These formed the basis for their inability to use the SDG agenda in framing research projects and programs, regardless of individual interest in doing so:

"I don't really see any other funding opportunities where I should really go with this. You know, with this detail, we don't really have anything, I think at least in our region, we don't really have any other opportunity, and that's what I am actually trying, even if it is not really available for Australian researchers. So I am actually asking my collaborators from the US if they have US aid or those types of funding. But until now, no, so that's why I never used these terms."

In pursuing individual drives to align with the SDGs, value for money emerged as one of the key constraints in pursuing research and development (R&D) activities with both government and industry. This highlights a curious dissonance between the public adoption of and alignment to the SDG agenda by the private sector in both countries, and its translation into how its R&D funding guidelines and inclinations are structured. A mid-career researcher described this as:

"Most of the decisions are taken based on economics rather than this SDGs, which is value for money. So if I invest \$1 in this R&D activity, what is the potential, how much it will give in terms of the dollar value? That is the main driver, rather than SDGs, because some of these environmental or social benefits, until now, we do not have an easy way to convert into dollar values. They are hypothetical. We can feel it, but we cannot convert it into money, into dollars. So that is, I think, one of the constraints."

Another mid-career researcher suggested that the lack of a standardised methodology for aligning research to the Goals and its indicators left it open to interpretation. They noted that this did not deliver any obvious advantage for publishing despite certain journals declaring their alignment to certain Goals. They also highlighted the lack of transparency and expertise behind the existing methodologies for aligning disciplinary research areas to the appropriate Goals and related indicators. This point was corroborated by the fact that although the bibliometric analysis identified their joint-authored publications with specific SDGs, some of the interviewees stated that they would not have chosen to align their work to those SDG areas.

LIMITED INCENTIVES AND RATIONALE

Interviewees highlighted a lack of India literacy among Australian research funding agencies, an ongoing also highlighted in the Australian Government's *An India Economic Strategy 2035*²⁷. The overall research and higher education ecosystem in Australia does not consider India as a significant country of research focus. In the words of a senior academic:

"They don't see India. They are not really familiar with multiple things, whether it's culture or even when the students come here for education, when they talk about the education that they have been taking in their undergrad... So making them aware is definitely one thing before actually pitching the areas in which you are diving deep into the research. Doesn't matter whether it's the arts or it's a social science, or it's a language, or it's pure health doesn't matter, or it's faculty of engineering or technology, or it's architecture or anything."

However, this trend has reportedly seen a change in recent years with increased collaboration between Australia and India, though with a more rapid pace in higher education offerings rather than in research.

"For the last five years, there has been significant interest in enhancing collaboration with India. But most of the Australian universities have been trying to get students as a market, rather than what we call collaboration on the research level and joint programs. I think that is now changing."

The lack of incentives for Australian researchers to engage with India appear to have institutional drivers in both countries. In the Australian context, a senior researcher felt that the environment for interdisciplinary collaboration is underdeveloped, and that intra-disciplinary dynamics can be competitive within and across universities. With funding cuts post-COVID-19, they felt that the appetite to collaborate has diminished with academics being incentivised to gatekeep and avoid engagement. This wider environment has further shrunk the space for research collaboration with India. Similarly, Indian funding opportunities for collaborative research with Australia have been limited, impeding the ability of interested academics in pursuing such opportunities:

"So I am not a very senior scientist yet. I am a mid-career researcher, right? So for me, at least it hasn't worked that I get a very good funding support from India. So I mainly get the support from, I try to get funding from other places and do the work there. But I do not, at least, I haven't identified any appropriate source where I can, you know, get this kind of support from the Indian counterpart as well."

This imbalance leads to academics using other funding sources to carve out the limited space for India-specific research. Some respondents felt that the selection processes of bilateral funding programs such as the AISRF were not sufficiently transparent. They also expressed concerns regarding the extent of the involvement of Indian researchers on AISRF grants and their exposure to the Australian research ecosystem as collaborators.



27 Department of Foreign Affairs and Trade. (2018). India Economic Strategy to 2035: Navigating Potential to Delivery. Australian Government. Retrieved from: <https://www.dfat.gov.au/publications/trade-and-investment/india-economic-strategy/ies/chapter-3.html>

DESCENT AND NETWORKS

The intrinsic motivations of Australia-based researchers to engage with Indian researchers were found to be driven by a combination of their Indian or South Asian descent, their prior networks, and a sense of commitment to addressing critical issues or development initiatives in India. Most of the Australia-based researchers identified through the bibliometric research and all of those interviewed were of Indian or South Asian descent, signalling the limited interest or drive among non-Indian diaspora researchers to pursue research collaborations with counterparts in Indian higher education institutions. A senior academic interviewed noted that it was their cultural background and networks, rather than any institutional or governmental support from either country, that drove the bulk of their engagement with India:

“So 99.99% collaborations are on my personal level, and particularly because being an Indian descent person, I know quite a significant [number of] people, because I travel a lot through the conferences and other things, which helps me [in] developing those networks. So that has really helped me. So there is no benefits in terms of either from Australia or India side I usually get, but definitely, these collaborations help us to pitch our various grants together.”

This observation indicates that despite lack of incentives from either side, the commitment to pursue collaborative research can lead to the expansion and strengthening of networks that improve the ability of Australia-based academics to seek and secure research funding opportunities from other sources. At times, these collaborations can be enabled by exchange programs and fellowships funded by the Australian and Indian governments. This often establishes an ongoing relationship both in terms of mentorship and productivity:

“But the people come here, they go back, and we have the contact going on, and then they ask time to time help, to help, you know, support their student, you know, engage in the research design of their student or their junior researcher. And that’s how the interaction, you know, keeps going, but not in the sense that we have a big project together, or something like that, and so yeah, that’s how lots of publications were generated. And we kept increasing our network.”

While such programs, fellowships, and the connections they initiate may enable researchers to produce more academic publications, they do not necessarily translate into long-term funding or infrastructural assets that can enable R&D relationships to be established. A mid-career researcher described the extent of such engagements as dependent on the work hours allocated by a given researcher:

“It’s mostly knowledge sharing. Okay, the first thing in terms of financial or any other, you know, infrastructure support, unless, until we have US aid, or, you know, any sort of ongoing project that they are coming on. So it’s nothing. So basically, just knowledge sharing and trying to share the ideas and discuss the project towards technology development, ask questions and stuff. So other than that, there is not much significant capital assets by investing in just the time, maybe you can indirectly associate, for example, if I work in office hours, my time to that associated time has been allocated then. So that is one of the indirect ways that we can do it, other than that there is no direct connection towards the funding infrastructure.”



ADMINISTRATIVE BOTTLENECKS

Respondents noted the existence of administrative bottlenecks within the university systems of both countries with respect to researcher collaborations. These included delays in issuing research visas in both directions, and limited government funding to enable Indian researchers to travel to Australia and for Australian researchers to travel to India. These were seen as considerable disadvantages for researchers wishing to collaborate. Furthermore, the structure and mechanisms of existing researcher exchange programs were regarded as inadequate by a mid-career researcher:

“This type of collaboration, when they come here, and it’s only one month of time it’s very difficult to create some tangible output or outcome out of this. Government investment is really, really tough. And a senior professor there, sometimes they even do not want to give a seminar. Or that they have, oh, I have just very little time, my government, my institute, just won’t support me. This is the one time I’m coming overseas. So, it’s not real value for money... So that is one of my observations, if government really wants to make this short-term collaboration investment, if they really want to get something back from this investment, then things need to change a little.”

Another mid-career researcher highlighted the considerable delays and bottlenecks in administrative procedures that, on different occasions, have prevented Indian researchers from being able to arrive in Australia to undertake their visiting positions. A senior academic reinforced the need for enhanced funding for Australia-India researcher collaboration from both governments, with a need for India to match Australian investments:

“One is funding from both sides. And that’s why I think we are not getting so much opportunity. So I think definitely both sides should really provide funding, and now India should provide equal funding. I can see there it’s not only just Australia.”

CAREER LEVEL AND AGENDA SETTING

The interviews revealed that early and mid-career researchers from India are keener to form relationships and networks with Australian researchers for long-term research collaboration and publications. A mid-career Australian researcher described the willingness of Indian counterparts to engage in productive, practical research:

“I find the early to mid-career researchers [from India], they are a lot more enthusiastic, they are a lot more engaging, and they want to do something for real, practical.”

Several interviewees emphasised the need for specialised programs for early and mid-career researchers’ career development. A mid-career researcher pointed to the differences in academic research culture in India which concentrate the privilege of participating in international collaborative projects and exchange programs with senior academics:

“Back home, at the moment, due to the Indian system, I think most of the facilities, or most of the privileges are obtained by only senior people. So we do not have, you know, for example, here we have very organised early and mid-career researcher program and funding for special fellowship programs. So if the Indian government can formulate something like that, that will be very useful for the future of the country”

A senior researcher, however, viewed the setting of research priorities and agendas for Australia-India research collaborations predominantly by Australians as inappropriate and unproductive. They argued Indian researchers and academics needed to be involved in designing the thrust of such projects and opportunities as well as respecting cultural differences in navigating programs of engagement:

“I feel that it should not be prioritised or made by an Australian researcher. It should be prioritised by Indian ones, because I think that’s how, why many programs fail. When I think people from outside, they try to, you know, dictate, or they try to suggest something, Indian people don’t really like that, and especially those who are sitting at management levels.”



CRITICAL INSIGHTS

The interviews reveal that while individual researchers are motivated to pursue collaborative projects with Indian partners that address the SDG agenda, they do not receive adequate institutional motivation or funding incentives.

Most Australian university researchers engaging in research collaborations with Indian counterparts are largely of Indian descent. There is a need to expand engagement of Australian researchers beyond this group through a wider range of exchange programs promoting collaborations to address interdisciplinary global challenges. Such programs require increased co-investment from Australian and Indian governments.

The interviewees pointed out various institutional constraints that limit the expansion of Australia-India research collaborations. These range from narrow disciplinary silos that prevent interdisciplinary research as well as limited bilateral funding opportunities for facilitating such research. In addition, there is little scope for Indian researchers to set the bilateral research priorities.

Administrative bottlenecks within both Australian and Indian university systems along with research visa approval processes of both countries present significant hurdles for pursuing meaningful Australia-India research collaboration and exchange programs. Short term exchange programs involve more effort and less benefit for researchers from both sides.

Early and mid-career researchers from India are more eager to develop impactful research projects with Australian counterparts. Bilateral investment and institutional support are needed for enabling researchers to undertake exchange programs for longer periods to understand the research ecosystems of their counterparts and develop productive collaborative relationships and networks.

CASE STUDIES OF AUSTRALIA-INDIA INTERDISCIPLINARY COLLABORATIONS RELATED TO SDG AGENDA



In 2024, a delegation from La Trobe University visited IIT Kanpur as part of a symposium on Healthcare Technologies and Digital Engineering hosted as part of the IIT Kanpur-La Trobe Research Academy. Credit: IIT Kanpur-La Trobe Research Academy

IIT KANPUR-LA TROBE UNIVERSITY RESEARCH ACADEMY: EXPANDING THE SCOPE OF EMERGING RESEARCHER ENGAGEMENT THROUGH INTERDISCIPLINARY THEMES

The interdisciplinary scope of the SDGs provides strong impetus for research collaboration focused on cross-cutting themes. At the bilateral level, the IIT Kanpur-La Trobe University Research Academy (IITK-LTURA) represents a promising step towards promoting multidisciplinary research opportunities on topics of mutual interest and benefit. Aimed at establishing sustainable mediums of collaboration through research, training and scholarships for doctoral candidates jointly enrolled at both institutions, the Academy reflects emerging interest across non-STEM faculties at Australian universities to consolidate relationships with highly esteemed Indian HEIs. Australian universities' engagement with the IITs to establish these joint academies also signals a shifting disciplinary profile within these Indian institutions which were traditionally STEM-focused.

The IITK-LTURA facilitates research engagement across ten themes, including: Infrastructure and Technology; Economic Development; Mobility and Transport; Health and Well-being; Urban Planning; Governance and Community Engagement; Security and Safety Management; Cultural Heritage; Energy, Water and Waste; and Food Security and Agriculture. While there is no direct acknowledgement of these themes being inspired by the SDG agenda or furthering it, significant overlaps exist between the thematic priorities of the Academy and the top SDGs represented across jointly authored publications between Australia and India.

CASE STUDIES OF AUSTRALIA-INDIA INTERDISCIPLINARY COLLABORATIONS RELATED TO SDG AGENDA



TOP 10 SDGS OF BILATERAL RESEARCH ACTIVITY	ALIGNING IITK-LTURA THEME(S)
Good health and well-being (SDG 3)	Health and Well-being
Affordable and clean energy (SDG 7)	Energy, Water and Waste
Industry, innovation and infrastructure (SDG 9)	Infrastructure and Technology; Urban Planning; Security and Safety Management
Clean water and sanitation (SDG 6)	Energy, Water and Waste
Zero hunger (SDG 2)	Food Security and Agriculture
Climate action (SDG 13)	Food Security and Agriculture
Decent work and economic growth (SDG 8)	Economic Development; Governance and Community Engagement
Sustainable cities and communities (SDG 11)	Infrastructure and Technology; Urban Planning; Urban Planning; Mobility and Transport; Governance and Community Engagement; Cultural Heritage

Table 10: Mapping the top ten SDGs represented in bilateral research collaboration (from bibliometric analysis) to the IITK-LTURA’s themes

Joint PhD academies such as the IITK-LTURA serve as a springboard for dynamic research engagement between leading and emerging researchers from both countries. The alignment of its thematic priorities to the SDGs, as outlined in table 10, can enrich the research outcomes emerging from such interdisciplinary collaborations and expand the pool of stakeholders from government and industry that may aid in the process of research translation for mutual socio-economic benefit. La Trobe University has since replicated this model by establishing an international joint PhD program with India’s Tata Institute of Social Sciences (TISS) in 2024, which funds interdisciplinary research in three areas, namely, Cultures of Health and Wellbeing, Environmental and Social Change, and First Nations.

CASE STUDIES OF AUSTRALIA-INDIA INTERDISCIPLINARY COLLABORATIONS RELATED TO SDG AGENDA



Director of the Australia India Water Centre, Professor Basant Maheshwari, leads a discussion with local farmers in Sunderpura, Rajasthan, about the MARVI project, aimed at improving the security of irrigation water supplies and enhancing rural livelihoods in India. Credit: AIWC

AUSTRALIA INDIA WATER CENTRE (AIWC): A CONSORTIUM THAT PROMOTES JOINT TALENT DEVELOPMENT

The Australia India Water Centre (AIWC) is a virtual joint centre established by a consortium of eight universities and one government partner in Australia, and fifteen universities and research institutions in India. Led by Western Sydney University, the AIWC is aimed at bolstering research cooperation across the themes of water and food security; safe drinking water supplies; river health; water-energy-food nexus; water for liveable cities; and other related areas.

As a multistakeholder initiative mobilising education institutions, government and businesses, the AIWC's work is driven by shared challenges that both Australia and India encounter in relation to water resources and its implications for livelihood security, wellbeing and economic development. The Centre's focus aligns with research priorities outlined in the Indian government's IMPRINT program (water resources) as well as the AISRF (food and water security).

Furthermore, it reflects Australia's longstanding focus on SDG 6 (Clean water and sanitation) which it has advanced through partnerships with the UN and World Bank High Level Panel on Water.

While the AIWC does not map its research outputs to the SDGs, it serves as a key platform for Australian and Indian water researchers to explore funding schemes and undertake bilateral or multi-country water projects aimed at addressing common socio-economic challenges. The high volume of jointly authored Australia-India publications tagged to SDG 6 (Clean water and sanitation), SDG 2 (Zero hunger) and SDG 13 (Climate action) can be attributed to initiatives such as the AIWC that promote long-term partnerships, dialogue and outputs across a range of transdisciplinary topics and stakeholders. Systematic alignment of the AIWC's research and knowledge products with the SDGs will advance both countries' measurement of SDG progress, and position bilateral research efforts as imperative for national progress and innovation.

5. THE WAY FORWARD

SUMMARY

- By aligning their research with SDGs, Australian university researchers can co-develop projects with their Indian partners to seek funding from a wider range of multilateral and global philanthropic sources for addressing global and shared challenges.
- Bilateral commitments to easing administrative constraints and co-funding interdisciplinary research collaborations in SDG areas can enhance researcher engagement between Australia and India. Leveraging the global impact recognition and expertise of universities in both countries can serve as a powerful catalyst for expanding the scale and scope of these collaborations.
- The interdisciplinary scope of SDGs can motivate early- and mid-career researchers of both countries to invest time and effort in forming strong relationships and networks with multiple stakeholders. These multi-stakeholder relationships are critical for securing competitive international grants funded by large philanthropic foundations and multilateral organisations.
- Interdisciplinary research institutes and Centres of Excellence set up by Australian and Indian universities can be vanguards for the joint development of research priorities advancing the SDG agenda. They can host early- to mid-career researcher exchanges and bring together multiple stakeholders from both countries to support innovation and research translation for mutual and global benefit.
- ARCH-India can serve as the fertile ground for these institutions to build strong, bilateral, multi-stakeholder partnerships for globally impactful contributions to the SDG agenda.

This report has sought to address three key questions: First, how are the Australian and Indian governments' commitments to achieving the UN SDG agenda reflected in the bilateral collaborative research activities in higher education settings? Second, how do ongoing research collaborations between Australian and Indian researchers address the SDG agenda? Finally, how might the SDGs provide a framework for expanding and leveraging ongoing and new research collaborations between Australian and Indian researchers?

The analysis presented in this report is based on a methodology uniquely developed for identifying joint-authored publications by Australian and Indian researchers using the SDG classification function in the Scopus publication database. It also maps each country's research priorities and the mutually identified Australia-India strategic research priorities against the 17 SDGs to reveal patterns of overlap with each goal. The resulting analysis provides three unique insights regarding Australia-India research collaborations when viewed from the perspective of the SDG agenda.

First, it demonstrates a strong alignment between national and bilateral research priorities and joint-authored publications in three SDG areas: Good health and well-being (SDG 3); Affordable and clean energy (SDG 7); and Industry, innovation and infrastructure (SDG 9).

This is a positive indication of bilateral research activity of mutual benefit, contributing to each country's commitment towards achieving the SDG targets.

Second, the bibliometric analysis reveals minimal correspondence between the SDG areas where Australian universities ranked first in the THE Impact Rankings and the top five SDG areas of Australia-India joint-research publications. Australian universities ranked first in Gender equality (SDG 5); Reduced inequalities (SDG 10); Climate Action (SDG 13); and Partnerships for the Goals (SDG 17). In contrast, the highest numbers of Australia-India joint-authored publications were in Good health and well-being (SDG 3); Affordable and clean energy (SDG 7); and Industry, innovation and infrastructure (SDG 9); Clean water and sanitation (SDG 6); and Zero hunger (SDG 2). Additionally, none of the SDG areas in which Australian universities were highly ranked feature among the Australia-India strategic research priorities.

Third, the bibliometric analysis by SDG areas sheds new light on Australian university researchers who are engaged in highly productive collaborations with Indian researchers. Although several interviewees stated that they did not choose to align their research with SDGs, they noted that incentivising researchers to align their work with SDG areas would motivate them to think more carefully about explicitly identifying how their work contributed to the SDG agenda commitments of both countries.

These three key findings, among others featured in this report, provide a useful framework for identifying opportunities to leverage and expand Australia-India research collaborations in SDG areas with potential for high global impact.

LEVERAGING THE SDG AGENDA TO ACCESS INTERNATIONAL FUNDING OPPORTUNITIES

The Australian researchers interviewed for this study noted that research funding streams in both Australia and India are mainly framed around domestic priorities and do not incentivise researchers to align their projects with SDG areas. Similarly, the Australia-India Strategic Research Fund (AISRF), which supports bilateral research collaboration in areas of mutual interest, makes no reference to the alignment of projects to the SDG agenda. While participants at the AI-IA Roundtable agreed with this observation, they pointed out that alignment with SDGs offers greater scope for Australian researchers to form meaningful linkages with researchers working on similar issues in other countries. The interdisciplinary nature of the SDGs provides a shared framework and common language, enabling international researchers from diverse areas of specialisation to identify and address global challenges.

The bibliometric and network analysis shows that Indian and Australian researchers play a subsidiary role in large, global multi-country studies, particularly in the area of Good health and well-being (SDG 3).

Many of these studies are funded by large multilateral and philanthropic institutions that support international research collaborations between Global North and South countries on a range of socio-economic issues aligned with specific SDG areas. As a leading Global South country with high research output, India is an important collaborator for multilateral and international research programs. By aligning their research with SDGs, Australian university researchers can co-develop projects with Indian partners to seek funding from a wider range of multilateral and global philanthropic sources.

Some participants noted the Indian Government's directive for HIEs and research institutions to pursue international collaborations through domestic funding for programs such as the Scheme for Promotion of Academic and Research Collaboration (SPARC) with the top 100 universities in the QS World University Rankings makes Australian universities particularly attractive because of their strong presence in the top 100. In this context, the Indian Government's Impacting Research Innovation and Technology (IMPRINT) initiative in its second version, IMPRINT-2, which emphasises end-user translation and technology adoption, may provide new opportunities for Australian researchers to highlight their work in relation to SDGs to seek collaborations with leading Indian researchers and their industry partners, state governments, and other collaborators.²⁸



28 Ministry of Education (2025). Impacting Research Innovation and Technology (IMPRINT)-2. New Delhi: Government of India. Retrieved from: <https://www.imprint-2.in/imprint-ii/HomePage>

EXPANDING THE SCALE AND SCOPE OF BILATERAL RESEARCH ENGAGEMENT

The bibliometric analysis and network mapping shows that leading Australian university researchers involved in joint-authored publications are predominantly of Indian or South Asian origin. Some of the researchers interviewed indicated that they are motivated to collaborate with Indian counterparts due to their deeper understanding of critical issues, existing academic and institutional networks, familiarity with research cultures, and a desire to contribute to both countries through their work.

Indian diaspora researchers, predominantly male, lead Australia-India research collaborations in highly specialised STEM fields. Most describe their research collaborations and contributions as aligning with national, bilateral, or strategic industry priorities rather than with SDGs or broader interdisciplinary efforts to address global challenges. Their views reflect the prevailing incentive structures for domestic and bilateral competitive research grant funding in both countries.



Australia India Institute CEO Lisa Singh with UN Resident Coordinator Shombi Sharp.

However, research mobility programs administered by the Australia India Institute, such as the early-career research exchange program, the Australia India Research Students Fellowships, and the interdisciplinary grants program, the Australia India 'Unnati' Research Collaboration Grants, demonstrated significant interest from non-Indian diaspora Australian university academics. Notably, there was also a high proportion of female, non-diaspora applicants seeking to pursue interdisciplinary research projects with Indian researchers. Although a number of Australian universities are making concerted efforts towards mapping the activity of their research centres and institutes against the 17 SDGs, feedback from participants at the AII-UA Roundtable suggests that promoting sustainability as an overarching thematic focus has the potential of mobilising wider interest among Australian researchers who are pursuing interdisciplinary research for advancing the SDG agenda.

The current incentive structures and funds for promoting bilateral research are limiting factors for both Australian and Indian researchers who are keen to collaborate on comparative, interdisciplinary research projects beyond the narrowly defined STEM fields. Other constraints, such as the issuance of research visas and administrative approvals, also limit both Indian and Australian researchers from engaging in longer-term exchanges and innovative interdisciplinary collaborations.

The AII-UA Roundtable participants emphasised the need for bilateral funding programs such as the AISRF to systematically integrate the SDG agenda in future rounds. Embedding the SDGs into the eligibility criteria of existing Australian and Indian domestic funding schemes would motivate researchers to submit proposals that explicitly link their research objectives to achieving tangible SDG outcomes. Such collaborations would build on the global impact recognition and expertise of Australian and Indian universities and serve as powerful catalysts for broader international development commitments made by both countries towards achieving SDGs. Participants also highlighted the need for bilateral commitments to ease administrative constraints and co-funding interdisciplinary research collaborations in SDG areas for expanding researcher engagement between both countries.



SUPPORTING EARLY- AND MID-CAREER RESEARCHERS TO PURSUE BILATERAL, MULTI-STAKEHOLDER RESEARCH COLLABORATION AND TRANSLATION

The SDG framework and methodology developed in this report offer an effective approach to identify early- and mid-career researchers in both countries who are motivated to jointly address national and global challenges. Many researchers see their work as aligning with and contributing to specific SDG areas and are eager to pursue interdisciplinary, jointly designed projects with counterparts in the other country. Such joint efforts hold enormous potential for forging innovative bilateral partnerships with industry, government, civil society and community-based organisations for research translation.

The AII-UA Roundtable participants referred to the Endeavour Leadership Program, which supported two-way mobility with Australia's priority partner countries and yielded positive outcomes for early- and mid-career researchers' professional development. They signalled the need to continue such programs, as well as for universities to increase their investments in quality mobility and mentorship programs that target emerging researchers seeking to establish research collaborations with India-based counterparts. They also called for joint workshops and conferences focused on SDG progress in research through a range of means, including in-person meetings, virtual labs, and collaborative platforms.

They underscored the vital role played by the ARCH-India platform in showcasing successful case studies of bilateral research collaboration, and recommended its expansion to include researcher dialogues and a commitment to achieving the SDG agenda.

The AII-UA Roundtable participants emphasised that, in addition to providing a common interdisciplinary framing for addressing shared global challenges, alignment with the SDG agenda offers new opportunities for early- and mid-career researchers in both countries to build strong relationships with multiple stakeholders. These multi-stakeholder relationships are critical for securing competitive international grants (which featured strongly in the bibliometric analysis) funded by large philanthropic foundations and multilateral organisations.

Finally, participants at the AII-UA Roundtable observed that the bibliometric analysis presented in this report is heavily skewed towards joint-authored contributions from university and higher education researchers in both countries. It provides limited information about joint-authored publications by researchers based in non-teaching research institutions, industry, think-tanks, and civil society organisations. The Roundtable participants recommended that future analysis should use different analytical tools for mapping research contributions from these non-university organisations which are often directly involved in impactful SDG-focused research and implementation. This would consolidate evidence for the diversity of stakeholders in both countries and form the basis for expanding multi-stakeholder research collaborations and partnerships for meeting domestic and international commitments to further the SDG agenda.



FORGING AHEAD

Interdisciplinary collaboration and multi-stakeholder engagement are pivotal to advancing bilateral efforts in alignment with the SDG agenda. The two case studies featured in this report are useful for illustrating how these can be mobilised to enhance bilateral research collaborations. The IIT Kanpur-La Trobe University Research Academy (IITK-LTURA) creates pathways for emerging researchers to work on interdisciplinary themes aligned with SDG areas, integrating multi-stakeholder engagement to drive research development and translation. The Australia India Water Centre (AIWC) at Western Sydney University, a consortium of universities and multiple stakeholders from both countries, promotes joint talent development to address critical challenges across several SDG areas.

The Australian Researcher Cooperation Hub-India (ARCH-India), launched in 2022 by the Australia India Institute and the Australian Government Department of Education, provides a dedicated platform for connecting researchers from both countries. The platform facilitates collaboration, mentorship, and the sharing of experiences working on co-designed projects, including those involving interdisciplinary work and diverse stakeholders. There is enormous potential to leverage the connections and resources it provides to expand bilateral research efforts, particularly those aligned with SDG areas.

The report findings highlight the importance of coordinated efforts and commitment from governments, industry, academia and civil society for both globally- and bilaterally- impactful research that works towards the achievement of targets outlined by the SDG agenda.

The development of a coherent SDG research collaboration framework through multi-stakeholder involvement would enable better articulation of research priorities both at the domestic and bilateral levels and provide clear focus for funding schemes aimed at research translation and innovation. The Sustainable Development Goals Coordination Centres (SDGCCs) established by Indian state governments offer a productive approach for building awareness of SDG targets and directing their efforts towards achieving them through collaborations between academia, industry, government agencies and NGOs.

This report shows that there is enormous potential to expand the scope and scale of Australia-India researcher collaborations from an SDG perspective. Many Australian universities have already established interdisciplinary research institutes and Centres of Excellence addressing the SDG agenda, as highlighted in Australia's Voluntary National Review on the 2030 Agenda. Similarly, many universities and higher education institutions in India have set up interdisciplinary research institutes and centres focused on different aspects of sustainable development. With funding from both countries, these institutes and centres can be the vanguards for developing common research agendas, hosting early- to mid-career researcher exchanges, and becoming hubs that bring together diverse stakeholders from both countries to support innovation and research translation. They can forge ahead on the fertile ground created by ARCH-India to expand their impact and make significant contributions to the SDG agenda for mutual and global benefit.

REFERENCES

- Chakrabarty, M. (2022). Development Cooperation Towards the SDGs: The India Model. Observer Research Foundation. Retrieved from: <https://www.orfonline.org/research/development-cooperation-towards-the-sdgs-the-india-model>
- Department of Foreign Affairs and Trade (2018). Australia's Report on the Implementation of the Sustainable Development Goals. Australian Government. Retrieved from: <https://www.dfat.gov.au/sites/default/files/sdg-voluntary-national-review.pdf>
- Department of Foreign Affairs and Trade (2018). Tracking Australia's Progress on the Sustainable Development Goals. Australian Government. Retrieved from: <https://www.dfat.gov.au/sites/default/files/sdgs-data-report-tracking-progress.pdf>
- Department of Foreign Affairs and Trade (2018). India Economic Strategy to 2035: Navigating Potential to Delivery. Australian Government. Retrieved from: <https://www.dfat.gov.au/publications/trade-and-investment/india-economic-strategy/ies/chapter-3.html>
- Department of Foreign Affairs and Trade (2024). 2030 Agenda for Sustainable Development and the Sustainable Development Goals. Australian Government. Retrieved from: <https://www.dfat.gov.au/aid/topics/development-issues/2030-agenda-sustainable-development>
- Department of Science and Technology (2022). Australia-India Strategic Research Fund. New Delhi: Government of India. Retrieved from: <https://dst.gov.in/sites/default/files/Guidelines%20%26%20Format.pdf>
- Minister for Foreign Affairs (2023). Joint Readout of the Quad Foreign Ministers' Meeting. Australian Government. Retrieved from: <https://www.foreignminister.gov.au/minister/penny-wong/media-release/joint-readout-quad-foreign-ministers-meeting>
- Ministry of Education (2025). Impacting Research Innovation and Technology (IMPRINT)-2. New Delhi: Government of India. Retrieved from: <https://www.imprint-2.in/Imprint-II/HomePage>
- Ministry of Human Resource Development (2020). National Education Policy 2020. New Delhi: Government of India. Retrieved from: https://www.education.gov.in/sites/upload_files/mhrd/files/NEP_Final_English_0.pdf
- Nainar, A. (2024). India's Foreign Assistance: Trends, Processes and Priorities. ORF America. Retrieved from: <https://orfamerica.org/newresearch/india-foreign-assistance-priorities>
- Office of the Principal Scientific Adviser to the Government of India. (2025). STI Roadmaps for SDGs. New Delhi: Government of India. Retrieved from: <https://www.psa.gov.in/sti-for-sdg>
- QS Top Universities (2025). QS World University Rankings: Sustainability 2025. Retrieved from: <https://www.topuniversities.com/sustainability-rankings>
- Sachs, J.D., Lafortune, G., Fuller, G. (2024). The SDGs and the UN Summit of the Future. Sustainable Development Report 2024. Paris: SDSN, Dublin: Dublin University Press. Retrieved from: <https://s3.amazonaws.com/sustainabledevelopment.report/2024/sustainable-development-report-2024.pdf>
- SDG Knowledge Hub (2023). G20 Recommit to SDGs to Shape the World We Want for Future Generations. Retrieved from: <https://sdg.iisd.org/news/g20-recommit-to-sdgs-to-shape-the-world-we-want-for-future-generations/>
- Study Australia (2024). Australian universities top global SDG Impact Rankings again. Australian Government. Retrieved from: <https://www.studyaustralia.gov.au/en/tools-and-resources/news/australian-universities-top-impact-rankings-again>
- Times Higher Education (2024). Top universities pursuing sustainable development goals in 2024. Retrieved from: <https://www.timeshighereducation.com/impactrankings?page=1#>
- The Sustainable Development Solutions Network. (n.d.). Getting started with the SDGs in Universities. Retrieved from: <https://ap-unsdsn.org/about/>
- UNDP (2025). What are the Sustainable Development Goals?. Retrieved from: <https://www.undp.org/sustainable-development-goals>
- United Nations Association of Australia (2019). Sustainable Development Goals. Retrieved from: <https://www.unaa.org.au/sdg/>
- United Nations (2023). The Sustainable Development Goals Report 2023: Special Edition. Retrieved from <https://unstats.un.org/sdgs/report/2023/>
- United Nations Office of South-South Cooperation (n.d.). India-UN Development Partnership Fund. Retrieved from: <https://indiaunfund.unsouthsouth.org>

APPENDICES

APPENDIX 1: CODE DEVELOPED FOR BIBLIOMETRIC ANALYSIS

The following code was arrived at through several iterations to encompass the following country combinations and exclusions:

(AFFILCOUNTRY (australia) AND AFFILCOUNTRY (india)) AND NOT (AFFILCOUNTRY (australia AND india AND "united states")) AND NOT (AFFILCOUNTRY (australia AND india AND "united kingdom")) AND NOT (AFFILCOUNTRY (australia AND india AND germany)) AND NOT (AFFILCOUNTRY (australia AND india AND iran)) AND NOT (AFFILCOUNTRY (australia AND india AND china)) AND NOT (AFFILCOUNTRY (australia AND india AND brazil)) AND NOT (AFFILCOUNTRY (australia AND india AND "south africa")) AND NOT (AFFILCOUNTRY (australia AND india AND ukraine)) AND NOT (AFFILCOUNTRY (australia AND india AND bulgaria)) AND NOT (AFFILCOUNTRY (australia AND india AND sweden)) AND NOT (AFFILCOUNTRY (australia AND india AND norway)) AND NOT (AFFILCOUNTRY (australia AND india AND denmark)) AND NOT (AFFILCOUNTRY (australia AND india AND finland)) AND NOT (AFFILCOUNTRY (australia AND india AND iceland)) AND NOT (AFFILCOUNTRY (australia AND india AND bangladesh)) AND NOT (AFFILCOUNTRY (australia AND india AND france)) AND NOT (AFFILCOUNTRY (australia AND india AND belgium)) AND NOT (AFFILCOUNTRY (australia AND india AND netherlands)) AND NOT (AFFILCOUNTRY (australia AND india AND luxembourg)) AND NOT (AFFILCOUNTRY (australia AND india AND spain)) AND NOT (AFFILCOUNTRY (australia AND india AND portugal)) AND NOT (AFFILCOUNTRY (australia AND india AND italy)) AND NOT (AFFILCOUNTRY (australia AND india AND russia)) AND NOT (AFFILCOUNTRY (australia AND india AND latvia)) AND NOT (AFFILCOUNTRY (australia AND india AND hungary)) AND NOT (AFFILCOUNTRY (australia AND india AND austria)) AND NOT (AFFILCOUNTRY (australia AND india AND "czech republic")) AND NOT (AFFILCOUNTRY (australia AND india AND "saudi arabia")) AND NOT (AFFILCOUNTRY (australia AND india AND poland)) AND NOT (AFFILCOUNTRY (australia AND india AND turkey)) AND NOT (AFFILCOUNTRY (australia AND india AND malaysia)) AND NOT (AFFILCOUNTRY (australia AND india AND ethiopia)) PUBYEAR > 2014 AND PUBYEAR < 2024

APPENDIX 2: LIST OF INTERVIEWEES

1. Mid-career researcher identified for output aligned to SDGs 8, 12 and 15 at an ATN affiliated university
2. Senior academic identified for output aligned to SDGs 7 and 9 at an ATN affiliated university
3. Senior academic identified for output aligned to SDG 3 at an ATN affiliated university
4. Senior academic identified for output aligned to SDGs 2, 8 and 15 at a Go8 affiliated university
5. Senior academic identified for output aligned to SDG 2 at a Go8 affiliated university
6. Mid-career researcher identified for output aligned to SDG 15 at a Go8 affiliated university

APPENDIX 3: QUESTIONS FOR SEMI-STRUCTURED INTERVIEWS

1. Please briefly share your background as well as your area of research.
2. How do your research interests intersect with Indian researchers and institutions?
3. In what ways have you engaged with Indian researchers and institutions as part of your work?
4. What are the institutional and disciplinary incentives and disincentives for engaging with Indian researchers and institutions?
5. Which funding streams and research programs have prioritised collaboration with Indian researchers and institutions? How so?
6. How have you navigated the differences in the research cultures that exist between Australian and Indian researchers and institutions, if any?
7. Where in your institution or discipline have you found particular interest and opportunity to engage with Indian researchers and institutions? Why?
8. To what extent do you prioritise the UN Sustainable Development Goals in setting your research agenda or, potentially, legitimising it? Do you find SDGs meaningful in this context?
9. To what extent does your institution prioritise the UN Sustainable Development Goals in setting its research agenda or, potentially, legitimising it?
10. To what extent does your discipline prioritise the UN Sustainable Development Goals in setting its research agenda or, potentially, legitimising it?



Supported by



Australian Government
Department of Education



UNIVERSITIES
AUSTRALIA

The Australia India Institute
Level 9, 501 Swanston St, Melbourne, VIC, 3000

aai.unimelb.edu.au



/aiinstitute