



Australian Academy of Science

SUBMISSION TO THE

**FOREIGN POLICY WHITE PAPER**

FROM THE AUSTRALIAN ACADEMY OF SCIENCE / MARCH 2017

## Australian Academy of Science submission to the public consultation on the Foreign Policy White Paper

The Australian Academy of Science (the Academy) strongly supports the Australian Government's development of a Foreign Policy White Paper and is grateful for the opportunity to provide input and recommendations against the consultation themes.

### Summary of recommendations

The Academy recommends that the Australian Government give consideration to including the following recommendations in the Foreign Policy White Paper:

- *Recommendation 1: The Academy recommends that the Foreign Policy White Paper recognise the importance of the use of science as part of Australia's diplomacy, through the Department of Foreign Affairs and Trade (DFAT).*
- *Recommendation 2: The Academy recommends that the Foreign Policy White Paper give particular consideration to Indonesia. Australia needs to continue to identify opportunities to increase its level of global engagement in science and technology in the national interest by building international linkages through collaboration with Indonesia.*
- *Recommendation 3: The Academy recommends that the Foreign Policy White Paper give consideration to supporting Australia's continued involvement in the World Climate Research Programme (WCRP), the Scientific Committee on Ocean Research (SCOR), Future Earth, and Future Earth Australia.*
- *Recommendation 4: The Academy recommends that the Foreign Policy White Paper support programs and activities that ensure that Australia maintains and strengthens its links with global research networks in order to maximise Australia's economic and social benefits.*
- *Recommendation 5: The Academy recommends that the Foreign Policy White Paper consider the importance of continued support for regional scientific assistance and capacity building through the Department of Foreign Affairs and Trade (DFAT), the Australian Centre for International Agricultural Research, CSIRO, and other agencies that provide aid and capacity building, particularly in our region.*
- *Recommendation 6: The Academy recommends consideration of an expanded network of science and innovation counsellors and attachés in select Australian embassies and missions in order to better support Australian researchers and institutions in their international engagement efforts.*
- *Recommendation 7: The Academy recommends the establishment of the position of Chief Scientific Advisor on Foreign Affairs and Trade to ensure timely and relevant scientific advice on policy matters and a role in coordination of Australia's international scientific engagement efforts.*

## Response and recommendations

### **1. Australia's foreign policy needs to be grounded in a clear-eyed assessment of our national interests.**

The Academy believes that the big challenges and opportunities for Australia in the 21<sup>st</sup> century – social, economic, scientific, and environmental – are inherently global rather than national in nature and that science has a critical role to play in helping Australia and its partners understand and respond to challenges and realise opportunities.

Australia has a relatively high research output compared to population, producing 3% of the world's scientific publications. However, 97% of the world's science is still produced elsewhere, and for this reason Australia's national interest depends on maintaining close engagement with other countries on matters of science and innovation.

International scientific collaborations are more important than ever not only to find solutions to major global problems but also to enhance economic productivity and competitiveness through innovation. By strengthening its S&T regional and global links, Australia can contribute to the development of solutions to global challenges.

*Recommendation 1: The Academy recommends that the Foreign Policy White Paper recognise the importance of the use of science as part of Australia's diplomacy, through the Department of Foreign Affairs and Trade (DFAT).*

### **2. Australia has diverse interests that span the globe.**

Since the beginning of the 21<sup>st</sup> Century global investment in R&D has almost doubled. With this increased investment, the importance of international engagement has also grown as scientific research is now a truly global enterprise. Innovation in the next decades will be driven by collaboration across institutional and national boundaries. This is because research is conducted most efficiently when ideas, data, facilities, equipment, talent and risks are shared on a competitive basis.

Australia has established strong scientific collaborative ties to traditional scientific powers in North America and Europe, and it is important that these collaborations continue. However, a growth in global R&D investments is being driven by spending in Asian countries, and this will continue to grow as countries such as China, India, Japan, South Korea and others reap the dividends of their considerable investment in science. Measures to ensure that Australian researchers and businesses can access and benefit from international science and innovation endeavours will provide enormous opportunities and benefits for Australia.

As previously stated many of the scientific challenges the world faces today are global rather than national in nature. These need to be tackled collaboratively. By strengthening its S&T regional and global links, Australia can contribute to the development of solutions to global challenges, such as climate change, sustainability, health (especially in areas such as emerging diseases), and the security of food and energy resources.

Australia has a unique opportunity as both a Western nation and an Asian nation, to participate strategically in regional and global science and innovation.

The Academy recommends that the Foreign Policy White Paper give particular consideration to Indonesia. The Academy believes that although there is a level of research collaborations between our two countries, Australia needs to continue to identify opportunities to increase its level of global engagement in science and technology in the national interest by building international linkages through collaboration with Indonesia. For example, we need to have strong preventative scientific collaboration with Indonesia in the area of biotechnology for the detection, diagnosis and surveillance of animal and human emerging diseases. Partnerships with Indonesia and others in the region in this area will minimise the health and economic risks for Australia.

Australia and Indonesia signed an agreement on science and technology in 2005, and the Australian Government has recently launched a National Innovation and Science Agenda which includes a Global Innovation Strategy to improve Australia's science, research and innovation collaboration. However, at this time Indonesia is not one of the 17 priority economies identified in this Strategy.

Indonesia is predicted to be the 5<sup>th</sup> largest economy in the world by 2030 and this means a potential, and indeed an imperative, for Australian industry and businesses to continue engaging with and investing in Indonesian companies.

#### **The Academy's engagement with Indonesian science**

Over the past two years the Academy has been assisting in the capacity building of the Indonesian Academy of Sciences and the Young Academy of Sciences in Indonesia. With support from the Department of Foreign Affairs and Trade, the Academy hosted an Indonesia-Australia Science Collaboration Forum in June 2016. The forum was chaired by the President of the Academy, Professor Andrew Holmes FAA and was attended by members of a high-level delegation from Indonesia that included Dr Muhammad Dimiyati, Deputy Minister for Research, Technology and Higher Education, Professor Sangkot Marzuki AM, President of the Indonesian Academy of Sciences (AIPi), and representatives from the recently launched Indonesian Science Fund (ISF), and the Knowledge Sector Initiative (KSI). The Indonesian delegation was visiting Australia under the auspices of the Department of Foreign Affairs and Trade (DFAT).

The forum provided an opportunity for Australian and Indonesian organisations to discuss ways to continue to strengthen the science, technology and innovation relationship between the two countries, learn more about the ISF, and discuss a proposed bilateral research symposium hosted by the Indonesian and Australian Academies of Science in Canberra, November 2016. Professor Alan Finkel, Australia's Chief Scientist, spoke at the forum.

The Academy received a request from Indonesia for assistance from Australian researchers to assess the first round of grants announced by the Indonesian Science Fund (ISF) in the areas of health and nutritional sciences as well as life sciences, including environmental sciences.

The Academy sent ISF the names of 28 Australian experts in these areas. The Academy of Social Sciences in Australia also nominated 13 experts in the areas of social sciences who expressed a willingness to assist with this task. This demonstrated the good-will that Australian researchers have towards their Indonesian colleagues and their desire to assist our nearest neighbours.

In November 2016, with support from the Department of Foreign Affairs and Trade, the Australian Academy of Science and the Indonesian Academy of Sciences, organised the inaugural Australia–Indonesia Science Symposium in Canberra, opened by Senator the Hon Concetta Fierravanti-Wells, Minister for International Development and the Pacific, that promoted scientific collaboration between Australia and Indonesia by enhancing scientific cooperation and exchange, and strengthening people-to-people links between the two countries.

The symposium themes were in health, marine science and climate change, and agriculture. An overarching theme was the uses and transformative potential of big data and other emerging technologies. A number of potential collaborations between the two countries have already been identified.

*Recommendation 2: The Academy recommends that the Foreign Policy White Paper give particular consideration to Indonesia. Australia needs to continue to identify opportunities to increase its level of global engagement in science and technology in the national interest by building international linkages through collaboration with Indonesia.*

### **3. Australia is an influential player in regional and international organisations.**

The Academy believes that one way for Australia to strengthen its standing as an influential player in international organisations is to continue building global and regional scientific collaborations. Australia is already a member and an active participant in networks and organisations such as ASEAN and APEC, the World Meteorological Organisation, the World Health Organisation, etc. Australia needs to continue to be part of these networks, including scientific networks.

Australia, through the Australian Academy of Science, is a member of the International Council for Science (ICSU) <http://www.icsu.org/>. Australia’s global science credibility and influence is enhanced by high-level representation on the executive of ICSU and ICSU scientific unions and scientific committees.

For example, the Secretary General of ICSU is an Australian, Professor David Black FAA, from the University of New South Wales. Another Australian, Professor John Buckeridge from RMIT, is on the Executive Board of ICSU.

Each ICSU organisation has substructures of committees and task groups in which an estimated 370 Australians serve at any given time. This gives Australian scientists extensive opportunities to contribute to international strategic planning and priority setting, and to establish research collaborations with other leaders in their fields.

Australia has broad base research excellence in many areas of science such as marine environment, Antarctic research, astronomy, earth sciences and agricultural sciences. However, at this point in time Australia is not a member of the World Climate Research Programme (WCRP) or the Scientific Committee on Oceanic Research (SCOR) due to lack of funding from Government or the research sector to pay the annual country membership dues. It is important that Australia finds opportunities to build on current international engagement on climate change through increased partnerships and alliances with initiatives such as WCRP and SCOR.

<https://www.wcrp-climate.org/> <http://www.scor-int.org/>

The WCRP is a critical program for Australian Earth System Science interests, cutting across the full range of climate and weather research from universities through to core government departmental research, specifically within the Bureau of Meteorology, CSIRO and Australian Antarctic Division. Active participation in the global research and development agenda is essential to innovation in this area and Australia is reliant on the international collaboration for key aspects of climate and weather research.

Through involvement in WCRP initiatives Australia demonstrates its leadership in Southern Hemisphere climate (Southern Ocean, Antarctica, semi-arid/arid zones, monsoons) and is able to leverage the best international (northern hemisphere) science to address issues in our region.

The SCOR brings together scientists from all the major oceanic research communities covering all areas of marine science. SCOR activities focus on promoting international cooperation in planning and conducting oceanographic research. SCOR has taken a leading role in organising major international research activities such as a new program of oceanographic research of the Indian Ocean which are clearly of direct benefit to Australia.

There is also an opportunity for Australia to take part in the global Future Earth initiative of ICSU through the Academy's newly established Future Earth Australia program. Future Earth is the largest ever international research and development collaboration focused on long term sustainability solutions for the planet and human societies. It is supported by a range of leading global institutions and a number of countries such as Germany, the United States and Japan have established national Future Earth initiatives.

<https://www.science.org.au/supporting-science/future-earth-australia>

#### **The Australian Academy of Science engagement with the Lindau Nobel Laureate Meetings**

The Academy of Science plays an active role in the annual Lindau Nobel Laureates Meetings on Lake Constance in Germany (<http://www.lindau-nobel.org/>) and in 2014, with Australian Government support, promoted excellence in Australian science and the performing arts by hosting the International Day. <https://www.science.org.au/news-and-events/newsletters/emcr-pathways-newsletter/emcr-pathways-issue-1/64th-meeting-nobel>

In recent years, Australia has been given the opportunity to host an Academic Partner dinner. This dinner is for the Australian delegation and leader, any guests of the Academy, the Australian Nobel Laureates in attendance at the meeting, and a small number of students from developing countries. This opportunity is normally only afforded to those countries with benefactor status, which would involve at the very least, an initial contribution of €1 million and an annual contribution of €75,000 over 10 years. The Academy does not have benefactor status and it is therefore an exciting event to be able to host, and highlights the strong relationship between the Lindau Council and the Academy.

*Recommendation 3: The Academy recommends that the Foreign Policy White Paper give consideration to supporting Australia's continued involvement in the World Climate Research Programme (WCRP), the Scientific Committee on Ocean Research (SCOR), Future Earth, and Future Earth Australia.*

#### **4. Australia needs to be ambitious in grasping economic opportunities.**

Australia has enjoyed many years of economic growth driven largely by commodity exports. However, the strong economic growth of a number of developing countries, including several in South East Asia, mean that Australia is likely to slip out of the G20 by 2030. (<https://www.pwc.com/gx/en/issues/the-economy/assets/world-in-2050-february-2015.pdf>).

In order to ensure continued economic growth, there is broad recognition of Australia's need to focus on skills and innovation collaboration; adapting and adopting measures that have contributed to the high-growth skills-based economies of countries such as Denmark, South Korea, Singapore and Japan.

Australia must ensure that it can maintain its links with leading international science and innovation countries to maximise economic and social benefits for the nation from global research networks.

*Recommendation 4: The Academy recommends that the Foreign Policy White Paper support programs and activities that ensure that Australia maintains and strengthens its links with global research networks in order to maximise Australia's economic and social benefits.*

#### **5. Australia confronts a range of strategic, security and transnational challenges.**

International scientific collaboration plays an important role in Australia's defence and biosecurity. For example, the training of quarantine officials from across the Asia-Pacific region over many years in the Australian Animal Health Laboratory operated by the Commonwealth Scientific and Industrial Research Organisation (CSIRO) has contributed both to national security and to Australia's standing in the region. Improved biosecurity in the surrounding Asia-Pacific region provides more effective protection for Australian agriculture and biodiversity; with associated risk management benefits.

Awareness of relevant issues, problems and data, especially within our immediate region, is a key component of Australia's defence policy. Broad scientific understanding of and access to scientific information provides evidence, detail and advance notice of potential concerns such as food security or disease management. Greater scientific collaboration would improve Australian expertise and awareness of the natural and physical characteristics and trends. Such access would allow better forecasting (eg. food security) and inform responses to identified risks. This "preparedness" function is a valuable product of international science cooperation, providing policy-makers with current intelligence and a mechanism for modelling responses to emerging threats, such as animal and human emerging diseases.

*Recommendation 5: The Academy recommends that the Foreign Policy White Paper consider the importance of continued support for regional scientific assistance and capacity building through the Department of Foreign Affairs and Trade (DFAT), the Australian Centre for International Agricultural*

*Research, CSIRO, and other agencies that provide aid and capacity building, particularly in our region.*

## **6. Australia uses a range of assets and capabilities to pursue our international interests.**

The Academy's response and recommendations against this theme cover a number of issues.

### **a. Science Counsellors and Attachés**

Australia has an excellent network of diplomats, trade representatives, and science and education counsellors. They foster government-to-government links to support international science and innovation collaboration, augmenting Australia's diplomatic capacity and ability to project a modern image of Australia to the world.

As science is a wide ranging effort that naturally crosses borders, countries such as the UK, have established science specialist networks at embassies and consulates. The UK Science and Innovation Network (SIN) has approximately 90 officers in over 30 countries to build important partnerships and collaborations in science and innovation.

<https://www.gov.uk/government/world/organisations/uk-science-and-innovation-network>

*Recommendation 6: The Academy recommends consideration of an expanded network of science and innovation counsellors and attachés in select Australian embassies and missions in order to better support Australian researchers and institutions in their international engagement efforts.*

### **b. Scientific advice**

Organisations such as the Australian Academy of Science, other Learned Academies in Australia and government research agencies, such as CSIRO and the Australian Centre for International Agricultural Research often undertake activities and perform international functions that serve the strategic international responsibilities of the Australian Government. As the role of science in diplomacy has strengthened in recent years, the importance of government coordination and support of such activities has also grown. Science institutions and leaders are able to gather information (primarily evidence and in-country perspective) and provide scientific advice to direct development according to best available scientific knowledge and Australia's national interests, including through international forums such as the United Nations and through the delivery of treaty obligations.

The Academy has for a number of years recommended that the Australian Government give consideration to the establishment of a Science Advisor function for the Foreign Affairs and Trade portfolio, to mirror well established arrangements in the US State Department and UK Foreign and Commonwealth Office (FCO).

The UK FCO's Chief Scientific Adviser is responsible for providing advice to the Foreign Secretary, Ministers and officials on science, technology and innovation. Their role is to ensure that the FCO's work on key issues undergoes proper scientific challenge, and to strengthen the scientific and engineering capacity within the Foreign Office. The Chief Science Adviser works closely with the cross-government community of Chief Scientific Advisers and the wider UK and international academic science community.



*Recommendation 7: The Academy recommends the establishment of the position of Chief Scientific Advisor on Foreign Affairs and Trade to ensure timely and relevant scientific advice on policy matters and a role in coordination of Australia's international scientific engagement efforts.*

### **The Australian Academy of Science in international diplomacy and engagement**

Since the establishment of the Australian Academy of Science in 1954, international scientific engagement has been a key area of Academy focus and activity. This is reflected both in the Academy's Royal Charter and also in the Academy's current strategic plan which includes international engagement as one of four key strategic pillars. The Academy also has the role of the adhering organisation for many of Australia's international scientific unions.

The Academy's Strategic Plan includes two objectives under the theme of international engagement:

- Contribute Australian expertise and leadership in regional and global science networks
- Facilitate Australia's access to global science and technology, and promote strategic partnerships between Australian and overseas researchers

Recognising the global nature of scientific endeavour, and the importance of profiling Australian research and researchers internationally, the Academy works with other science organisations and the Australian government to coordinate bilateral and multilateral meetings, events and exchange programs with the goal of creating collaborative research opportunities, facilitating access to research facilities and promoting network development.

The Academy interacts widely with scientists and officials from research organisations and governments in many countries to increase awareness of Australia's capabilities in science and technology, and to create opportunities to influence and contribute to international research agendas and policy development activities.

The Academy would be pleased to continue to play a role in delivering Australia's soft diplomacy initiatives.

## **Conclusion**

The Australian Council of Learned Academies (ACOLA) 2015 report, *Smart Engagement with Asia: leveraging language, research and culture*, made several significant evidenced-based findings to guide and strengthen international engagement. These included that deepening cultural relations between Australia and Asia requires patient relationship building to foster sustained and long-term interconnections and networks, and that both science diplomacy and cultural diplomacy are an increasingly important dimension of public diplomacy, but that there is a lack of clarity and consensus about policy making in these areas.

The Australian Academy of Science recommends that this White Paper seek the views of the Office of the Chief Scientist as scientific expertise should be a fundamental part of Australia's economic and diplomatic efforts.

The Academy would be pleased to provide further input into the Foreign Policy White Paper.