

CGIAR's submission to Australia's 2017 Foreign Policy White Paper

Introduction

CGIAR is the only worldwide research partnership addressing agricultural research for development, whose work contributes to the global efforts to tackle poverty, food and nutrition insecurity, and environmental degradation. Australia has been a major funder of CGIAR, aiming at supporting CGIAR research and impact at scale from its whole portfolio, in the Asia-Pacific region and beyond. Australia has ranked 5th among the top funders of CGIAR, with an average support of US\$ 48 million per year from 2011 to 2015.

As such, CGIAR is an important partner for Australian Foreign Aid in the area of agricultural research for development, and it wishes to contribute to this important reflection on Australia's Foreign Policy by sharing some reflections on some of this White Paper's key questions.

Distribution notice:

Public

1. AUSTRALIA'S FOREIGN POLICY NEEDS TO BE GROUNDED IN A CLEAR-EYED ASSESSMENT OF OUR NATIONAL INTERESTS

→ *How should we define Australia's national interests in a changing world? How should our values underpin Australia's foreign policy? What should we do differently? How can we do better?*

A number of these broad considerations are addressed in our responses below. In terms of so-called spillover effects from Australian development aid through CGIAR to Australian business sectors, an independent impact study has estimated the spillover benefits at 1:30. <http://www.dpi.nsw.gov.au/content/research/economics-research/reports/err25>.

2. AUSTRALIA HAS DIVERSE INTERESTS THAT SPAN THE GLOBE

→ *Which countries will matter most to Australia over the next 10 years? Why and in what ways? How should we deepen and diversify key relationships?*

We would recommend that Australia focuses its efforts in areas where the majority of the world's poor and hungry live: Africa, Asia and poverty hotspots in Latin America. Focus could be considered in Sub-Saharan Africa and South Asia where Australia could have significant development impacts.

→ *Which global trends, such as developments in technology, environmental degradation and the role of non-state actors, are likely to affect Australia's security and prosperity? How should Australia respond?*

- The **world's food system needs urgent reform** – with direct and indirect effects on Australia's security and prosperity. In this context, Australia has the opportunity to take a prominent role to support research for development in the area of agriculture given the trends outlined below.
- Over a billion people live on less than US\$ 1.25 per day and more than 800 million are **acutely or chronically undernourished**. The number of people suffering from micronutrient deficiency or 'hidden hunger' is even greater, around 2 billion, and still increasing such as the the newly declared famine in South Sudan.
- Despite hidden hunger being a growing issue, more than **30% of food production globally is wasted** at various points in the supply chain post-harvest, and in developing countries, similar percentages are lost pre-harvest to abiotic and biotic stress.
- At the same time, unhealthy diets have overtaken smoking as the most important cause of death, with approximately **2 billion people being overweight or obese**.
- **Women** remain particularly disadvantaged, lacking equal access to productive resources and providing much of the labor for agriculture without fully sharing in its financial and other developmental returns.
- Meanwhile, threats to the natural resource base needed for future food production are rising steadily:

- Between 1980 and 2008, **climate change** brought about global yield declines of 3.8% for maize and 5.5% for wheat. Collectively, agriculture and food systems contribute up to 29% of global greenhouse gas emissions.
- An estimated 3.5 billion hectares of **degraded land** now lie unproductive due to overexploitation.
- **Unsustainable water use** threatens 40% of the world's grain production. The number of people affected by drought or floods each year has risen to 150 million. The World Economic Forum's Global Risks Report 2016 rates water crises as the number one risk of highest concern facing the world in the next 10 years.
- Rising and volatile food prices and increased competition for scarce water, land and energy resources, severely threaten the **livelihood of the world's poor and hungry**, and the impact of climate change will exacerbate these threats in the coming decades.
- In this context, agri-food systems in the developing world face unprecedented challenges, but also **exciting opportunities**. Rapid developments in agricultural, biological and data science – underpinned by research advances in both the public and private sector – are opening up radical new opportunities to improve the productivity, resilience and resource-use efficiency of farming systems. In such a dynamic landscape, these opportunities are buttressed by the improved understanding of the needs of smallholder farmers and, most importantly, what influences their uptake of new agricultural knowledge and practices.
- Pursuing these approaches provides the means to tackle previously intractable problems and to generate **new investment opportunities**. Food availability alone – both increasing production and reducing losses – needs to expand by 60% globally, and up to 100% in developing countries, in order to feed the predicted global population of 9 billion people by 2050. Additionally, new technologies, market opportunities and entrepreneurship provide the potential to create employment for some of the 60% of African youth for whom the agri-food system, on farms or in the food value chain, is an important future source of employment. New interest in science and technology as a source for growth in countries such as India and China offer enhanced opportunity to address productivity, climate and resource degradation challenges.
- Increased mobility of goods and people increases **biosecurity risk** for Australia including exposure to pests and disease. CGIAR and its relevant Centers are well placed to help prevent/tackle any such incursions.

3. AUSTRALIA IS AN INFLUENTIAL PLAYER IN REGIONAL AND INTERNATIONAL ORGANISATIONS

→ *Which regional and global organisations matter most to us? How should we support and shape them? How can we maximise our influence?*

- CGIAR is an **intermediate investment vehicle** to effectively mobilize the large-scale funding necessary to sustain long-term agricultural research for development.
- CGIAR **provides contributors with flexibility** to make investments aligned to their respective strategies, whilst supporting CGIAR's collective efforts to ensure that gains

are sustained by longer-term predictable funding streams, and new investments are leveraged to their maximum potential.

- Funding CGIAR projects: investors use the transactional capacity of CGIAR to receive and channel contributions to specific projects. Limited to no opportunity to leverage other investors' contributions. (CGIAR Funding Window 3 and Bilateral)
- Funding CGIAR programs: in addition to the transactional capacity, investors jointly develop and approve CGIAR's Research Programs. Ability to leverage dollars of other investors in the same program to increase scope and complexity of issues tackled. (CGIAR Funding Window 2)
- Portfolio-level funding: highest level of engagement, and investment leverage. Investors shape CGIAR strategy and its research portfolio. Maximum opportunity to optimize resource allocation based on portfolio performance. (CGIAR Funding Window 1)
- Australia has been a **long-time supporter and funder of CGIAR**, as reflected in Figure 1 below that shows Australian funding support to the three investment levels described above (and their related funding 'windows').

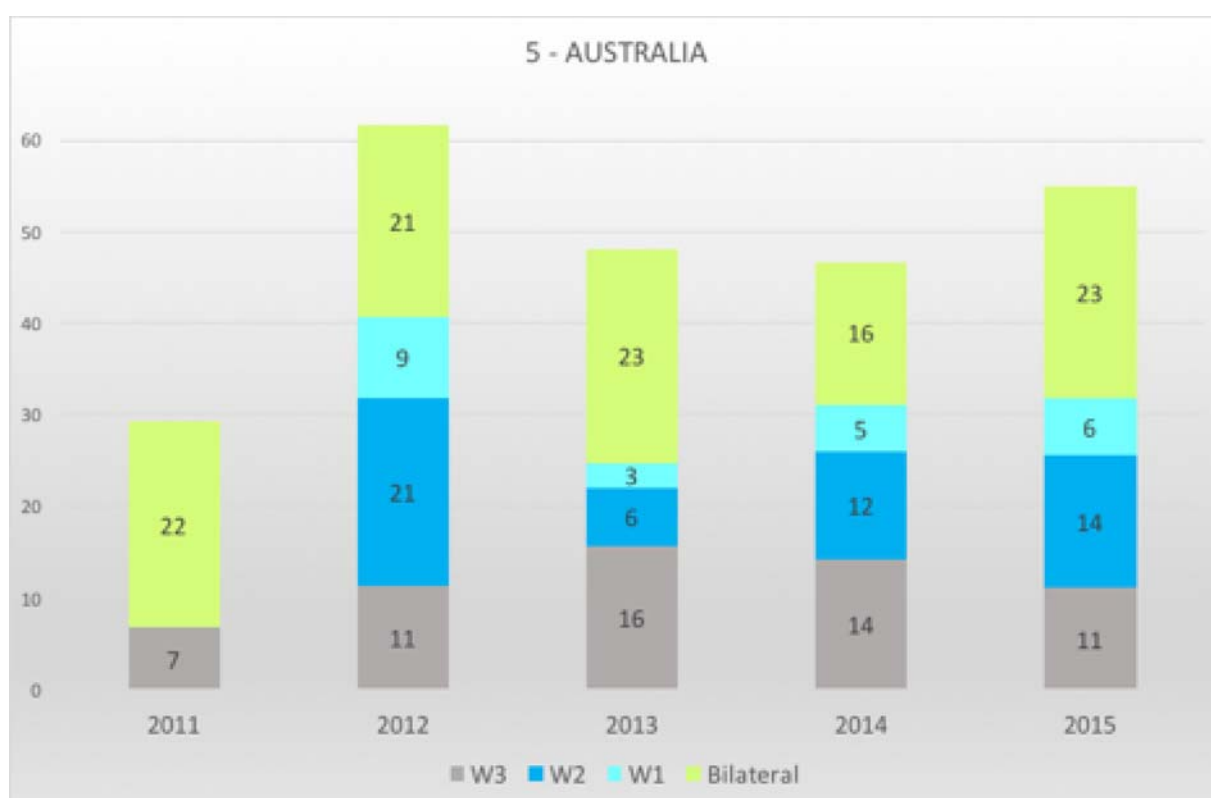


Figure 1: Australia's investment in CGIAR from 2011 to 2015 across the various funding windows (project level: Bilateral and W3; program level: W2; portfolio level: W1).

- Dollar for dollar, CGIAR research has proved far more cost-effective than infrastructure investment for boosting food supply and economic growth, with **every dollar invested yielding US\$17 worth of benefits**:
 - Benefits of CGIAR wheat research range from US\$2.8 billion to US\$3.8 billion a year, a high return for annual public funding of only US\$30 million;
 - In Africa, drought-tolerant maize has created benefits estimated at US\$1.5 billion a year;
 - Improved rice varieties enabled farmers in three Southeast Asian countries to harvest an extra US\$1.5 billion worth of rice over 20 years with a benefit-cost ratio of 22;
 - Biological control of two devastating cassava pests averted a food security crisis in Africa and produced enormous economic returns, totaling US\$9 billion, equal to the cost of CGIAR entire expenditure on research for Africa since its inception.
 - Based on the above ratio, Australia's investment in CGIAR from 2011 to 2015 has generated US\$4.1 billion of benefits worldwide.
- Given this long-standing relationship with CGIAR, **Australian researchers have also benefited from capacity building provided by CGIAR** (e.g., Australian wheat breeders attending annual visits to CIMMYT facilities in Obregon, Mexico), and from the receipt of high quality products, knowledge and technologies produced by CGIAR, which contribute to improved research within the country.
- Increased investments in agri-food research can **accelerate innovation and harness new opportunities to address development challenges** and provide the radical transformation so urgently needed. The following investment areas would be worth considering:
 - Agri-food research in Asia and the Pacific especially on fisheries and aquaculture (WorldFish with its hub in the Solomon Islands), rice (IRRI), forestry (CIFOR);
 - CGIAR's strong portfolio focus on Vietnam and Indonesia as two of its 20+ site integration countries (<http://gcard3.cgiar.org/cgiar-site-integration/>);
 - Comparability of dryland areas research (ICARDA, ICRISAT) and scientific exchange with Australian universities; and
 - Support to Australia's continued soft diplomacy and practical assistance in improving water and climate policy and practice (e.g. in the Greater Mekong region) reaffirming its role as a constructive neighbour committed to supporting regional cooperation and development.
- Following a major set of CGIAR reforms, Australia has the opportunity as a **holder of a seat on the CGIAR's System Council** to contribute and orient these increased investments to help support transformation in food systems. CGIAR benefits from excellent engagement with ACIAR, who represent Australia on the System Council, who consistently provide thoughtful and strategic considerations.

4. AUSTRALIA NEEDS TO BE AMBITIOUS IN GRASPING ECONOMIC OPPORTUNITIES

→ *What steps should be taken to maximise our trade and investment and expand commercial opportunities for Australian business? How can we ensure Australia is positioned to take advantage of opportunities in the global economy? What are the key risks to Australia's future prosperity and how should we respond?*

Given Australia's major role in global wheat markets, it would be in its interest to ensure a stable and well-functioning wheat markets across the world, including stability of production and using trade to even out shortfalls. The same logic could apply to a number of other agricultural markets of interest to Australia.

5. AUSTRALIA CONFRONTS A RANGE OF STRATEGIC, SECURITY AND TRANSNATIONAL CHALLENGES

→ *How can Australia best deal with instability beyond our borders? How can our foreign policy, including our overseas development assistance program, support a more prosperous, peaceful and stable region? How should our international engagement work to protect Australia against transnational security threats, such as terrorism?*

- Agriculture is an **engine of growth** in many Least Developed Countries (LDCs) so raising the efficiency and equitability of agriculture – and creating entrepreneurship through more modern involvement in agriculture (input price information, input services, weather forecasting, value added, post-harvest loss improvements, niche marketing, branding, transport, supermarkets, producer cooperatives, crops and livestock insurance, etc...) can all help development and start to reduce migration.
- Agricultural research for development provides very **good value for money**, compared to other development interventions. Several studies show this for the research done by CGIAR¹ and an impact study (2015) commissioned by the CGIAR Research Program on Wheat² points to yearly economic benefits of CGIAR wheat breeding research ranged from \$2.2 to \$3.1 billion (in 2010 dollars). As this resulted from annual funding of just \$30 million p.a., the benefit-cost ratio is very high: between 73:1 and 103:1.
- **Building capacity** at the local level in target countries in the area of agricultural research would be of interest to Australia given the value for money noted above, including the positive impacts these types of activities have in developing countries. CGIAR is a key partner in building such capacity with local national agricultural research systems.

¹ CGIAR. (2016). The CGIAR Fund Securing Investments for a Food Secure Future.
<https://library.cgiar.org/bitstream/handle/10947/3903/CGIAR%20Impact%20Brief%20Returns%20to%20Investment.pdf?sequence=1>

² CIMMYT and WHEAT. (2016). Impacts of International Wheat Improvement Research 1994-2014.
<http://wheat.org/wheat-global-impacts-1994-2014-published-report-available/>; <http://www.cimmyt.org/global-wheat-breeding-provides-billions-in-benefits-cimmyt-study-shows/>

6. AUSTRALIA USES A RANGE OF ASSETS AND CAPABILITIES TO PURSUE OUR INTERNATIONAL INTERESTS

→ *What assets will we need to advance our foreign policy interests in future years? How can we best use our people and our assets to advance Australia's economic, security and other interests and respond to external events?*

Leveraging the multilateral assets that Australia has helped build up over the 20th Century – in the CGIAR's case, an effective multilateral platform ready to tackle the principal challenge of the 21st Century – reforming the world's food system. CGIAR holds scarce seed assets and a huge store of research expertise – humanity needs this to face the challenges of climate change, undernutrition, obesity and migration.

Australian agricultural research and agri-business have forged a global network, including through CGIAR. This is a strength to build on, as benefits go both ways. Some examples:

- The Australian sorghum industry (3M tons) leads the world technologically for rain-fed sorghum production in the semiarid tropics, its scientists much in demand. Sorghum is a CGIAR mandate crop.
- Australian private sector breeders and public sector agricultural scientists benefit from CGIAR breeding research on wheat, barley and pulses (via the CAIGE initiative, funded by GRDC among others), because CGIAR germplasm is valuable for Australia. Australia produced almost \$2 billion worth of chick pea (pulse) last year, it produced none 30 years ago.
- Southern Australia rain-fed agricultural techniques around wheat, pulses and sheep are a very important source of learning for many North African and West Asian countries. Several CGIAR Centers, often funded by Australia (ACIAR), have achieved technology transfer successes. More could be done.

→ *How can Government work more effectively with non-government sectors, including business, universities and NGOs, to advance Australia's interests?*

- A case could be made for stronger coordination and collaboration between Australia's international development and its (domestic) agriculture-focused programs. Australian farmers – and thus consumers of their products - directly or indirectly benefit from Australia's international assistance. For example, on wheat breeding research, each year, CIMMYT and ICARDA send out so-called elite lines – in the form of 'international traits and nurseries - to wheat researchers and breeders all over the world. Though CIMMYT's mandate focuses on supporting developing country research and ultimately poor farmers in those countries, most developed country research and breeding organizations, including Australia, make use of this material as well. They do this because they face the same challenges, making wheat more heat tolerant, or resistant to a disease, which occurs globally.

- Thus, international agricultural research for development on wheat led by CGIAR and supported by Australian international assistance comes back to the country in the form of improved lines. They are released as new varieties and are sown by Australian farmers, who want them because of their improved yield, greater tolerance or resistance against a disease and other benefits.
- Australia also has strong university/CSIRO agricultural departments which it could continue to leverage with researcher deployments to CGIAR projects in LDCs.
- Finally, it would potentially be to Australia's benefit to encourage high level joint research with leading Australian universities, particularly in the Asian region, related to the risks to Australia from zoonotic outbreaks, and means of improving livestock productivity within accepted international norms of welfare and health.