



Australian Government

AUSTRALIA'S CHIEF SCIENTIST

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AUSTRALIA INDIA INSTITUTE'S TASK FORCE REPORT

LAUNCH

10-MINUTE SPEECH

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******* CHECK AGAINST DELIVERY *******

Good morning. I am pleased to participate in the launch of this report.

It is a timely snapshot of the relationship between Australia and India's science and innovation systems and useful in plotting a more closely aligned future.

There can be no doubt - collaboration, especially international collaboration - is a part of our future. It has been a part of our past, but now more than ever it is essential if we are to solve, or manage, or mitigate the consequences of some of the great challenges that confront our planet and all that lives on it.

Whether we view the world from Melbourne or Mumbai, science and innovation provides the options needed for living in our changing environment, ensuring we remain healthy and well, managing our food and water, keeping our nations secure and lifting productivity and economic growth.

Having options and being adaptable is the key to surviving in an increasingly competitive world economy. India's system of frugal innovation, as detailed in this report, should hold lessons for other countries.

Innovation is, or should be, about making things better or more accessible. Frugal innovation is defined as 'achieving more with fewer resources' for more people.

Its principles are listed as: -

- better things, not just cheaper things
- services as well as products
- re-modelling, not just de-featuring
- Low cost always, high tech if needed.

While consumer goods like the \$2500 Tata Nano car, the \$75 Chotukool refrigerator or the \$36 Akaash tablet computer might grab the headlines internationally, other examples such as the hepatitis-B vaccine, prostate treatment drug, cataract surgery and artificial feet (all for a fraction of the cost in other countries) are improving and saving lives.¹

And while frugal innovation is having an impact, so is discovery-led research and it is desirable that we find better pathways (and more of them) between Indian and Australian science.

When we consider that Australia's share of world research output is at 3.2 per cent, and India's is 3.5 per cent², it makes sense to keep building our bilateral research collaboration. And it makes sense for us as India's spend is about 1% (and rising) of GDP on R&D while ours is 2.2% and likely to fall. Get in early might well be the mantra for us to follow.

¹ Australia India Institute Task Force Report, *Science Technology Innovation: Australia and India* – Pg 7

² Australia India Institute Task Force Report, *Science Technology Innovation: Australia and India* – Pg 7

From Australia's point of view, that goal is in line with a general trend towards greater international collaboration in scientific research.

Indications are that 35 per cent of articles published in international journals are now internationally collaborative. Fifteen years ago, that figure was 25 per cent.³

The evidence is that Australia presently performs above this global average for international collaboration.

An analysis of Scopus data on Australian publications shows that approximately 45% were co-authored with international collaborators in 2011, up from 33% in 1996.⁴

And it is clear that the landscape of our international collaboration is changing dramatically.

Australian researchers are increasingly collaborating with those from the emerging Asian nations.

As this report states, collaboration between Australian and Indian researchers and research organisations is increasing, albeit from a relatively low base.⁵

³ *Knowledge, Networks and Nations: Global Scientific Collaboration in the 21st Century* – Pg 6

⁴ HAS – Pg 153 Table 6.7.2 updated to 2011 using **SJR — SCImago Journal & Country Rank**; <http://www.scimagojr.com/countrysearch.php?country=AU>

⁵ Pg 60 - *Our Frugal Future: Lessons from India's Innovation system*, Bound and Thornton <http://www.nesta.org.uk/library/documents/OurFrugalFuture.pdf>

Figures show that there has been a seven-fold increase between 1995 and 2010⁶.

Joint projects that the Australia-India Strategic Research Fund (AISRF) has made possible⁷ show what kind of work might offer potential benefits to both nations: –

- new techniques for removing organic pollutants from wastewater (thus improving water quality)
- the emerging therapy known as heart regeneration to tackle cardiac disease
- detecting cancer through non-invasive methods
- genetic protection for chickpeas
- the remote sensing of aquatic marine ecosystems

And while we continue to seek new areas of collaboration, we also need interdisciplinary and cross-sectoral responses to the national and global challenges facing society, that no single agency or nation (or discipline) can address by itself.

It is noteworthy, for example, as the task force report states: “Under the National Action Plan on Climate Change, the Indian Government has launched eight national missions in important areas such as sustainable agriculture, water, energy efficiency,

⁶ Source: National Science Board 2012

⁷ <http://www.innovation.gov.au/Science/InternationalCollaboration/aisrf/Pages/OutcomesandCaseStudies.aspx>

solar energy and forestry. All national missions have strong components of science and technology.”⁸

Much of this is the reason why I have a heavy travel schedule around the country this month and am engaged in consultations about a National Science & Technology Strategy.

The best part of the case **for** one is that we **don't have** one. And we should learn from other countries. Especially from those that outperform us.

My office has done a comparative analysis of other countries' science strategies and policies.

While India was not one of the countries we analysed in detail, I note that it released a Science, Technology and Innovation Policy earlier this year.⁹

Our analysis considered 12 countries including Canada, the U.S. and U.K., as well as the Scandinavian countries and the EU.

Unlike these countries, Australia does not have a Science and Technology Strategy to provide a coherent framework for science and technology related policies and programs.

⁸ Australian India Task Force Report, p 11

⁹ <http://www.dst.gov.au/sti-policy-eng.pdf>

Why is such a strategy important?

In 2012-13, the Australian government will invest close to \$9 billion in science, research and innovation through a suite of programs across multiple departments and agencies.

A total of 79 science, research and innovation programs will be funded through the 2012-13 Budget, with administration of these programs distributed across 14 portfolios, each operating under its own policy framework.

Research and innovation underpin our capacity to shape our future. Nations with strong R&D systems, like the ones we have examined, have taken steps to enable a whole-of-government approach to their investment; a science policy and a strategy.

Having such a strategy will encourage Australian researchers and research organisations to collaborate across sectors and with our international partners.

International collaboration and networks are essential to address shared global challenges.

It is in our national interest to be an active participant in research aimed at addressing these common problems and establishing ourselves as a nation of influence.

Maintaining productive relationships with established, high performing nations is as important as nurturing relationships with emerging science nations (like India).

I expect that the Strategy will frame objectives to increase worldwide engagement in science and technology by maintaining and strengthening research relationships with high-performing nations that enhance our performance.

It will also nurture long-term research relationships with emerging science nations, particularly in our region, and facilitate collaboration with nations that have complementary research priorities and common challenges.

I put forward the need for a strategy at the most recent meeting of PMSEIC and it was widely (unanimously) endorsed.

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The next step is to seek input from those who have a particular idea about what should be included in this National Science and Technology Strategy.

If you have ideas, I'd welcome them and you can send them to this email address: - OCS-Projects@chiefscientist.gov.au

Let me finish by asking: Why?

Surely, just more innovation can't be the end - it must surely be a means to an end. What are we aiming for?

The Task Force Report states that *“instead of viewing innovation strictly in terms of competitiveness and as a strategy to support high value-added employment, it should also be conceived as a means of promoting inclusive growth.*

Inclusive growth embraces the have-nots and brings them into the mainstream of the economic system as customers, employees, distributors and intermediaries.

Inclusive growth will lead to resource-poor people gaining access to necessities of life at affordable prices. Inclusive growth can be accelerated through inclusive innovation.”

Whatever we do in this country, we must remember that we are part of the world.

That world has multiple challenges that affect people in every country in some way or another. I am talking about water, about health, about climate, about agriculture and food, about living a life that is safe and secure.

We in Australia and our colleagues in India will not achieve the things we need on our own. Together we can make a great contribution – and we can help make the world a better place for all its people – indeed for all its living things.

This report reflects a solid foundation exists on which to build the relationship. I commend it to you.

Thank you