

## Tropical potential: A Tale of Two Inequities

(with apologies to Charles Dickens)

I want to tell you about two inequities – one Australian, one global – and how the two might be linked to deliver a win-win outcome.

The first inequity was pointed out a generation ago by then federal Minister for Science Barry Jones, who noted that although Australia's research effort was comparable, on a per capita basis, to other advanced nations, our subsequent development and commercialisation outcomes were only one third and one tenth of those of our competitors, respectively.

Twenty-five years later the figures are not much different. We do 50% more published research, per capita, than the OECD average, but patent 50% less, and lag even further behind when it comes to commercial returns.

These figures are not surprising. They simply reflect the nature of our investments. Our non-business investment in R&D, comprising primarily research conducted by government and higher education, is as good or better than that elsewhere in the OECD, but our business expenditure on R&D (BERD) is half or even one third of that in leading OECD nations.

The result of this imbalance, from the point of view of an investor in knowledge-intensive industries, is a surfeit of low hanging fruit – about twice as much high-quality undeveloped research per capita as in the United States.

Let me give you two brief examples:

The anti-influenza drug Relenza, though not as well known as its sister drug Tamiflu, was the very first marketed drug to be designed to fit a target site – in this case the protein neuraminidase on the surface of the flu virus – using computer modelling.

Similarly, the cervical cancer vaccine, Gardasil – also designed from first principles – was the world's very first anticancer vaccine.

Both were created in Australia, but both were licensed and developed overseas.

So that's the first inequity: great research, weak development.

The second inequity is the fact that many of the world's population, mainly those living in the tropics, lack the most basic of essential goods and services – food, medicine and housing.

For example, the vast majority of the world's health budget is spent on the small proportion of citizens dwelling in the developed world, despite the fact that standard health indicators such as infant mortality are more than 20 times worse in some tropical countries than they are in Australia.

Environmentally, tropical populations fare no better. Over 700 million people in the tropical world rely on forests or savannah for food, fuel and income, and 250 million more depend on coral reefs. Yet tropical forests continue to be cleared at unsustainable rates and the productivity of the world's coral reefs will decrease by 70% to 80% by 2050.

And finally, food. As you and I sit down to our everyday lunch, 15% of the population of Oceania are going to bed hungry. In Sub-Saharan Africa 30% more are waking up the same way.

Why is this so? All of these problems are amenable to research in tropical agriculture, health and ecosystems – areas where Australia has outstanding research capabilities. Why isn't our surfeit of research being applied to these tropical problems?

Last month, a group of 40 scientists, educators, industrialists and government officials from the developed and developing worlds met in Cairns to consider this question.

They concluded that there is a real opportunity to use Australia's expertise in tropical agriculture, health and environmental sciences to not only build new Australian industries, but also to deliver enhanced social, economic and environmental benefits throughout the tropics. In particular, they noted that the sum of the planet's tropical economies, the global tropical product, is projected to reach US\$40 trillion, 20 times Australia's projected GDP, by 2025. Of that \$40 trillion, between 25% and 30% will be spent on importing goods and services, and more again will be spent on developing new industries in the tropical world.

So, there's the win-win. By building knowledge intensive industries producing tropical goods and services, Australian investors can access the fastest growing and least contested markets in the world, and the tropical world can gain access to the fruits of Australia's research.

The key to achieving this will lie in our ability to create networks in education, research, business and government with tropical countries in our region, notably in South-East Asia and the Pacific, and to build stronger linkages between researchers and businesses, between entrepreneurs and investors, and between Australian companies and their

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Working with James Cook University, government research organisations and the business community in northern Queensland, the Queensland Government has recently sponsored the formation of a new not-for-profit association, TropLinks Inc\*, to build these linkages.

TropLinks Inc aims to catalyse the growth of industries based on Australia's tropical expertise by:

- actively identifying funding pools and attracting investment for projects and industry development; and
- bringing members together to create a united, internationally-recognised presence.

Its ultimate goal is to double the growth rate of northern Australia's tropical economy.

We look forward to working with you to make it happen!

\* Further information on TropLinks Inc can be found at [www.troplinks.com](http://www.troplinks.com), or by contacting CEO Graham Poon at [info@troplinks.com](mailto:info@troplinks.com).

