

# Australia-Indonesia Centre INFRASTRUCTURE Megatrends

## Australia and Indonesia

In spite of their close proximity and the sharing of an international maritime border, Indonesia and Australia are very different nations. Geographically, politically, culturally and economically they bear some similarities, but also some stark differences. Nonetheless, both nations are located in the Asian economic region which is transforming rapidly, presenting opportunities and necessities for greater collaboration on shared issues. The Australia-Indonesia Centre (AIC) and CSIRO have been investigating these shared issues for four research Clusters: **Agriculture and Food, Health, Infrastructure and Energy.**



## AIC Foresighting Project

CSIRO has been invited by the AIC to apply its 'foresighting' approach to assist research planning for the Infrastructure Cluster. By identifying 'megatrends' and 'megashocks' towards 2030 and beyond, foresighting enables the Cluster to be evidence-based and anticipatory, and to identify a clear pathway to market, adoption and application. The overarching goal of the AIC Foresighting Project is to *'support the development of priority research areas of shared interest between Australia and Indonesia, and to promote integration, synergy and learning amongst the Cluster teams'*.

In November 2014 – January 2015 the project engaged with Cluster teams during their planning workshops to identify shared issues, underlying drivers and potential megashocks. In February – May 2015 megatrend narratives were developed around the shared issues, and then tested and refined through discussion and validation with Cluster researchers and the AIC. Based on the shared issues and drivers, overlapping megatrends were identified for each Cluster. These are summarised here for the Infrastructure Cluster. The full megatrend report is available from the AIC website, [www.australiaindonesiacentre.org](http://www.australiaindonesiacentre.org).

## Megatrend summaries

- Climate change and disasters will increase pressure to upgrade and build new infrastructure.
- Asian economic growth will drive demand for new infrastructure.
- Rapid urbanisation will pose challenges for planning.
- Digital innovation will provide opportunities but also security risks.

## Environmental Risks and Opportunities

This megatrend describes the increasing risks and associated costs from climate change and disasters, as well as the inevitable growth in demand for natural resources and infrastructure due to the rise in the global population and its mobility. Global warming is projected to continue into the future. This will result in ongoing changes in the Australian and Indonesian climate and oceans, including increased climate variability. Globally, there is a positive trend in the number of reported disasters, with most being weather and climate-related. The economic impact of disasters is also expected to increase. Together with the growing demand for the planet's natural resources, these changes will increase pressure to upgrade existing and build new infrastructure in order to support development. These efforts will have to take account of projected environmental change and the scarcity of natural resources.



## International Gateways

This megatrend focuses on the projected rapid economic growth and shifting political power from the West to the Asian region. This trend will be accelerated by the formation of the ASEAN Economic Community in 2015. Globalisation will require the assimilation of markedly different political, cultural and trading traditions. Indonesia will probably become the world's 4th largest economy by 2050, with Australia ranked 28th. To take advantage of these opportunities, and to remain competitive, both Indonesia and Australia will need to invest in new infrastructure and improvements to existing networks. In Indonesia this will require rapid improvement in port and shipping infrastructure, particularly in the eastern islands. In Australia, urban areas will need to account for a projected 50-70% increase in freight traffic.

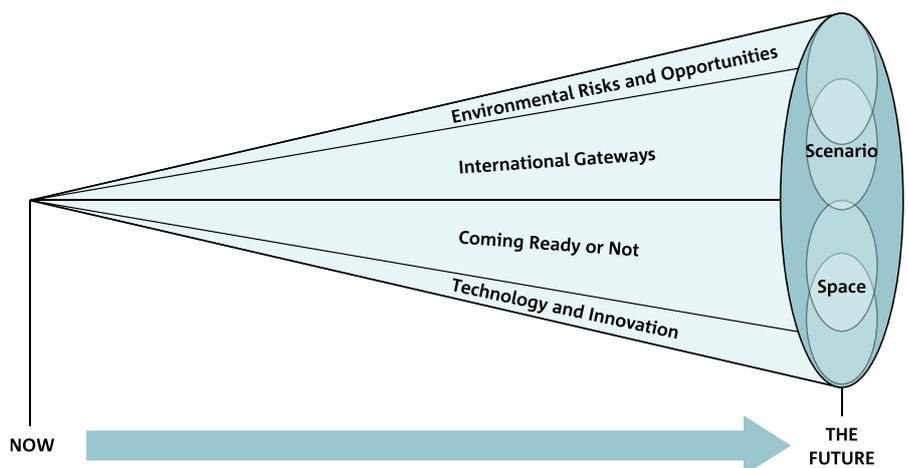
## Coming Ready or Not

This megatrend outlines the rapidly changing social world and the associated challenges for infrastructure. Indonesia's population is increasing, as are incomes with the rising 'consumer class'. Urbanisation is one of the main drivers of increasing incomes. The rapid

growth and development of urban centres will impose challenges relating to urban planning, water supply, urban congestion, social disadvantage, climate change and adaptation, and pressures on public finance. Rising costs will mean that there will be an emphasis on doing things better, creating a critical link between education and infrastructure for both Australia and Indonesia. These rapid social changes will create new opportunities for industries and individuals, as well as magnifying geopolitical tensions, risks to health, security and the environment.

## Technology and Innovation

This megatrend describes opportunities for economic development that also tackle emerging environmental risks. 'Going green' will be a focus for repairing and revitalising physical infrastructure, together with the rise of innovative materials and technological solutions that have the potential to transform the sector. Innovation in the Internet which enables 'things to be connected anytime, anyplace, with anything and anyone' will emerge. However, application of such digital innovation will also increase the risk of critical system failure and cybercrime that will need to be addressed through improving human capacity to manage risk and security systems.



THE FOUR MEGATRENDS IDENTIFIED FOR THE INFRASTRUCTURE CLUSTER

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