

INFRASTRUCTURE

MAKING THE WHEELS GO ROUND

Infrastructure connects goods to markets, workers to jobs, people to services, and the poor in rural areas to urban centres. Infrastructure lowers costs, enlarges markets and facilitates trade.

Vietnam. Crossing the bridge. Apart from wanting to help open up economic possibilities, AusAID became involved in the My Thuan Bridge project because it saw the opportunity to transfer Australian skills in modern bridge technology to the Vietnamese – a high priority in terms of development assistance and setting the course for future infrastructure projects. Photo: Joe Garrison

There are a number of ways to improve living standards in the developing world but almost all start with basic infrastructure.

Why is this?

‘If you take the human body analogy,’ explains Alan Coulthart, AusAID’s infrastructure adviser, ‘the underlying structure of the skeleton is infrastructure. Without it there’s nothing to support the body’s vital organs. Likewise, the muscles and tissue built around the skeleton can’t function without the complex network of veins and arteries delivering blood and nutrients.’

Put another way, infrastructure provides people with the services they need to live healthy and productive lives. ‘When we talk about poverty, what we often mean is the absence of the most basic infrastructure services,’ says Coulthart.

In the developed world infrastructure is an intrinsic part of daily life. ‘Most people tend not to think about it but it’s a defining feature,’ says Marcus Howard, AusAID’s water and sanitation adviser. ‘Every aspect of the way we live depends on our extensive and highly interwoven systems. It’s what connects us.’

Equally, it’s the fundamental lack of connecting systems in the developing world that holds it back.

In the Pacific infrastructure is notoriously weak but governments also face some serious challenges. For example, the region is fragmented with small culturally diverse populations spread across many islands. It’s geographically remote, susceptible to natural disasters and much of its terrain is either difficult to reach or environmentally fragile. And underpinning all this is the basic

fact that individual governments simply don’t have sufficient resources to meet needs. Because of scale, going it alone is not a viable option for any of the Pacific island nations but working together as a region – while full of potential – is also easier said than done. ‘The Pacific is still a little way off but there are moves to share telecommunications regulation services among Pacific island nations,’ says AusAID’s Adam Blundell.

South East Asia has a different set of challenges. Here the rapid pace of economic growth in many countries is constrained by inadequate infrastructure. Poor roads and railways increase the cost of getting goods to markets, and long delays and inefficiencies at air and seaports reduce competitiveness. Industries also find it both an annoyance and a drag on production that they are



Building in a different climate

Many infrastructure investments – bridges, railways, roads and ports – are long-lived assets. This means they're meant to be around for generations. As the consequences of climate change become increasingly evident, decision makers must factor these considerations into infrastructure programs. 'We will need to plan new infrastructure and upgrade existing structures to withstand future climate conditions such as extreme weather events, which are likely to increase in frequency due to climate change,' says Brian Dawson, AusAID's climate change and energy adviser. Investment in new types of infrastructure may also be necessary. For example, changes in the annual and seasonal availability of water may require new water storage and transmission infrastructure, such as pipelines, dams, irrigation facilities and flood management structures. 'Adapting to the impacts of climate change represents a major challenge to developing countries,' says Dawson, 'and an important focus for Australia's development assistance.'



What is infrastructure?

Infrastructure is the physical structures that people need to get on with their daily lives – the roads, bridges, hospitals, airports, power stations and so on. Equally, infrastructure is the systems that keep the hospitals and airports running, maintains the roads, and connects electricity to homes and buildings. Without adequate infrastructure, societies and nations underperform.

How does infrastructure help the poor?

The presence of infrastructure affects poverty in two ways. 'Firstly, it underpins the processes of development which help to reduce poverty and, secondly, it helps the poor access basic services which they need to improve their lives,' says Ryan Medrana from AusAID's infrastructure team.

In the view of most commentators transport, telecommunications and energy rank as the most important infrastructure for stimulating economic growth and reducing poverty. Among the very poor, however, maintaining rural roads, supplying clean water and providing functioning sanitation facilities are the first priorities.

When we talk about poverty, what we often mean is the absence of the most basic infrastructure services.

ABOVE: Nepal: Saraswati Vaidya changes the particle filter of an air pollution monitoring device in a heavily polluted area of Kathmandu. Photo: Mikkel Ostergaard/Panos Pictures

ABOVE RIGHT: Indonesia: The long hot walk to fetch water. Lack of infrastructure causes hardship and denies people opportunities in life. Photo: AusAID
 FAR RIGHT: Vietnam: Electricity in all directions. The aid program is improving access to electricity, particularly in rural areas. Photo: Kathie Griffiths

obliged to install standby generators to cope with inevitable power cuts, which further add to costs.

Another problem is age. Within urban centres such as Ho Chi Minh City there is a lot of infrastructure but it is old and under strain from an expanding and increasingly mobile population. Rapid modernisation and displays of extreme wealth in many of Asia's major cities sit incongruously alongside evidence of appalling poverty and decay. High rates of economic growth have in many cases accentuated inequalities within countries, particularly between the cities and the countryside. AusAID's support of partner government

expenditure on infrastructure in rural regions plans to redress this imbalance.

There's much to do everywhere but the challenge is particularly stark in the Asia-Pacific region where around 50 per cent of the world's population growth to 2050 is likely to occur. Yet on present statistics, about 1.6 billion people in East Asia and the Pacific still lack access to energy, 1.1 billion people do not have access to safe water, and 2.2 billion are in desperate need of improved sanitation facilities.

The time for action is now.

Poor infrastructure is perhaps the most binding constraint to reducing poverty or improving standards of living throughout the developing world.



Where and what's needed

Australia's aid program recognises that investment in infrastructure is effective development assistance. 'It's not just a philosophical belief – we also have an impressive record of achievement,' says Coulthart. There are many examples but probably the most notable engineering project is the construction of the My Thuan Bridge which, since it opened in 2000, has catalysed economic development in the Mekong Delta (see the *My Thuan Bridge Story* page 22).

The aid program knows infrastructure is particularly needed in remote rural areas but increasingly also in cities and towns where slums are spreading as a result of the rapid pace of urbanisation. 'People leave their villages and come to the cities in search of work and a better life. This puts pressure on existing infrastructure which is limited and quite frail,' says Peter Kelly, AusAID's roads adviser. 'It's here we need to help provide much better basic services, such as access to reliable electricity, clean running water and sanitation.'

The poor are also crying out for better transport – those in rural areas need to reach regional markets and the urban poor need to get to their workplaces across the city. 'Nearly every bus or train you see across South East Asia is old and filled to capacity and the volume of private transport – cars and motorbikes – has ballooned over the past 10 years,' says Kelly. Increasing traffic congestion is a serious challenge to economic efficiency in many cities in Indonesia, Philippines, China and Vietnam. High pollution levels are also having a serious impact on people's respiratory health while road safety is another major issue – vehicle accidents are the number one cause of deaths for people aged between 10 and 24 in developing countries (see *Driving Safely* page 14).

Australian support for better designed, safer roads and the systems that are needed to maintain them have transformed the lives of thousands in countries such as Papua New Guinea and Solomon Islands (see *Mending Roads and Making Peace* page 14).



Australian assistance

The Australian Government spent \$265 million in the 2007–08 financial year on infrastructure through bilateral programs with developing countries.

In addition, the 'Infrastructure for Growth Initiative' commits \$500 million up to 2011 to support:

- > road rehabilitation and maintenance
- > aviation and maritime transport
- > rural electrification
- > water supply and sanitation.

Helping to build expertise and capacity to ensure sustainability is also a vitally important part of the package. 'Infrastructure efforts rely

Although less than two years old, AusAID's Infrastructure for Growth Initiative is already producing tangible results. For example, the Transport Sector Support Program in Papua New Guinea is helping to reduce poverty in many rural areas by resurfacing the roads. Villagers can now reach markets and places of employment in good time and with relative ease. Business opportunities are also becoming more viable. For example, agricultural diversification becomes a possibility when the logistics of transporting products is reliable and less expensive. Poor villagers for example have started to grow high value spice crops. On a larger scale, coffee merchants in the Highland Provinces are enjoying international commercial success since they have been able to enter the highly profitable organic coffee market – only possible because of the improved road and port facilities.

Australia's aid program will continue to work in partnership with developing countries to achieve infrastructure benefits. 'Many of our partner countries value Australia, particularly AusAID, as a source of advice,' says AusAID's Ryan Medrana. 'Our assistance is flexible and responsive, and we can offer excellent links to other organisations.'

ABOVE: Sri Lanka. A ship is loaded with containers ready for export. Well-maintained and efficiently-run airports and seaports are vital for economic growth and regional prosperity. Photo: Mark Henley/Panos Pictures

One of the aid program's primary goals is to help partner countries reduce poverty and achieve sustainable development by funding infrastructure and establishing the necessary policies and institutional capacities to sustain it.

on good governance. We're looking to train up many more people so that they can plan and manage developments, understand the need for proper regulation and are attuned to policy implications,' says AusAID's Keith Joyce. 'Without good governance, infrastructure projects are unlikely to be sustained.'

**Inclusive development
Infrastructure fosters
'inclusive development'
which is about improving
the incomes and lives of
all members of society,
particularly the poor. It
depends on generating
economic growth, sharing its
benefits with the poor, and
enhancing their access to
basic services.**

Access to basic infrastructure services has a profound effect on people's quality of life. The presence of energy and telecommunication services, for example, encourages teachers and health workers to take up positions in remote rural areas. Better water and sanitation facilities have a direct impact on improving health.

Roads and bridges that connect people and their products to ports and markets are the lifelines of nations and communities. Businesses spring up and expand because groups of like-minded people are able to connect with each other and create opportunities.

When there are serviceable roads, crops and manufactured goods can be delivered to their prescribed destinations at lower costs, in shorter times, and with less chance of loss or spoilage. This is particularly

important for perishable goods. 'By helping people, especially the poor, to reduce their freight charges and get to markets with greater efficiency, we're helping to reduce poverty,' says Medrana. 'It's the lack of mobility that stifles development.'

Likewise, by supplying electricity to homes, providing reliable water supplies, and sharing advances in information technology, living standards are lifted, which improves health. This in turn leads to communities becoming more productive. Women and girls, who have primary responsibility for domestic chores, have the most to gain. 'When people have access to basic necessities, they are able to do more things that improve the quality of their lives and the communities around them,' says Sarah Boyd from AusAID's Gender Unit. 'Think of what might be achieved if each day you didn't have to spend hours collecting firewood for cooking because your family now has electricity in the home, or you didn't have to walk great distances to collect water because you have piped water, or there is a well nearby.'

With mobile phone networks, farmers and local entrepreneurs are already proving that they can be competitive. In Vanuatu, for example, mobile phones have revolutionised small businesses (see *Cheaper Faster*



What's Australia doing in the Asia Pacific

Australia is working hard across the region to improve living standards of the poor and vulnerable through an infrastructure program that is both socially inclusive and sustainable:

> **Indonesia:** Under the Australia Indonesia Partnership for Reconstruction and Development (AIPRD) there's a number of initiatives including the rehabilitation of main roads in eastern Indonesia, the reconstruction of facilities in Aceh destroyed by the 2004 Indian Ocean tsunami, and support for community managed rural water supply and

sanitation. The Australia Indonesia Basic Education Program is building or expanding 2,000 junior secondary schools across 21 provinces, and the Indonesia Infrastructure Initiative, which allows for quick responses to high priority government requests for advice, includes funding to pilot innovative infrastructure activities.

> **Philippines:** The Southern Philippines Road Maintenance Program is the main infrastructure activity (see *Maintaining Vital Assets* page 16).

> **Papua New Guinea:** Australia is bolstering government institutions

at both the central and provincial level. The main assistance program is focusing on the rehabilitation and maintenance of a core network of main roads. Given the limited capacity of agencies within Papua New Guinea's transport sector, and the degraded state of transport infrastructure, AusAID will continue to lend support in this area for the foreseeable future.

> **Vietnam, Cambodia and Laos:** In collaboration with the Asian Development Bank and World Bank, Australia is helping to upgrade regional and local transport links,

extend rural electrification and strengthen the capacity of local authorities to plan, deliver and manage infrastructure.

> **East Timor:** The aid program is helping to strengthen technical and managerial capacity in East Timor so the country can implement ambitious infrastructure projects funded from natural resource revenues. Creating jobs to absorb high numbers of unemployed youths is an equally important aspect. Australia is delivering its assistance in collaboration with the Asian Development Bank.



Good economic infrastructure is a fundamental requirement for achieving virtually all of the Millennium Development Goals.

Talk page 12). Future improvements in internet connections will lead to even greater advancements.

Given the enormous economic and social benefits of infrastructure there's a strong case to be made for government intervention – both to invest in capital works and to improve the environment for private investment. Donor country support for infrastructure can also play a key role in re-establishing the role of the state in post-conflict situations. Australia's support of road rehabilitation and maintenance in Bougainville over the past nearly nine years is evidence of

this (see *Laying Down the Road*, page 13). In East Timor, a similar labour-based infrastructure scheme is about to start to provide productive outlets for the large numbers of disaffected youths searching for jobs.

ABOVE: Philippines: Squatter shanties set amid the backdrop of skyscrapers of the Makati financial district show the marked inequalities between the rich and the poor. Photo: Jay Directo/Panos Pictures
LEFT: India: Overcrowded trains and buses are a familiar sight across Asia. Photo: Prakash Singh/AFP

Youth employment



In East Timor employment opportunities are few and far between.

So when Joel Paulini, who is in his early 20s, heard about a labour-intensive works program, he registered immediately. Within a week, more than 20 of his friends had also signed up. The main job is fixing and clearing canals and road-side drains before the wet season begins. It's necessary to get this done to prevent flooding and to reduce breeding sites for mosquitoes, which can carry malaria and dengue fever. The pay is not great but it's excellent work experience and much better than hanging around all day.

'This initiative is very good for us young people to earn some money, even if it is little,' says Joel, adding that many who used to be involved in gang fighting are now changing their habits.

Jaime da Silva Soares, who is involved in supervising the project, sees the program as important in terms of maintaining stability. 'The youths of my village have calmed down. The opportunity to earn some money, even though short, has changed their mind to work seriously.'

Over 8,000 young people across the country are currently working on minor infrastructure projects under the Youth Employment Promotion Program. Jobs range from fixing rural roads, building drainage canals along hillside roads to prevent them washing away,

Approximately half of the youth in Dili are unemployed.

About 80 per cent of East Timor's population are subsistence farmers.

Almost half of the East Timorese population live below the poverty line.

and clearing roadsides. Fifteen trained local engineers are also on hand to help with design and work supervision which ensures quality.

Since its launch in May 2008, the Youth Employment Promotion Program has provided temporary jobs for thousands of young people from seven districts. The program is also helping the Government of East Timor to develop policies to improve youth employment.

The program is jointly funded by AusAID and the Government of East Timor and managed by the United Nations International Labor Organization.

ABOVE: Happy to be working. Young East Timorese men help to build a dry stone wall. Photo: AusAID