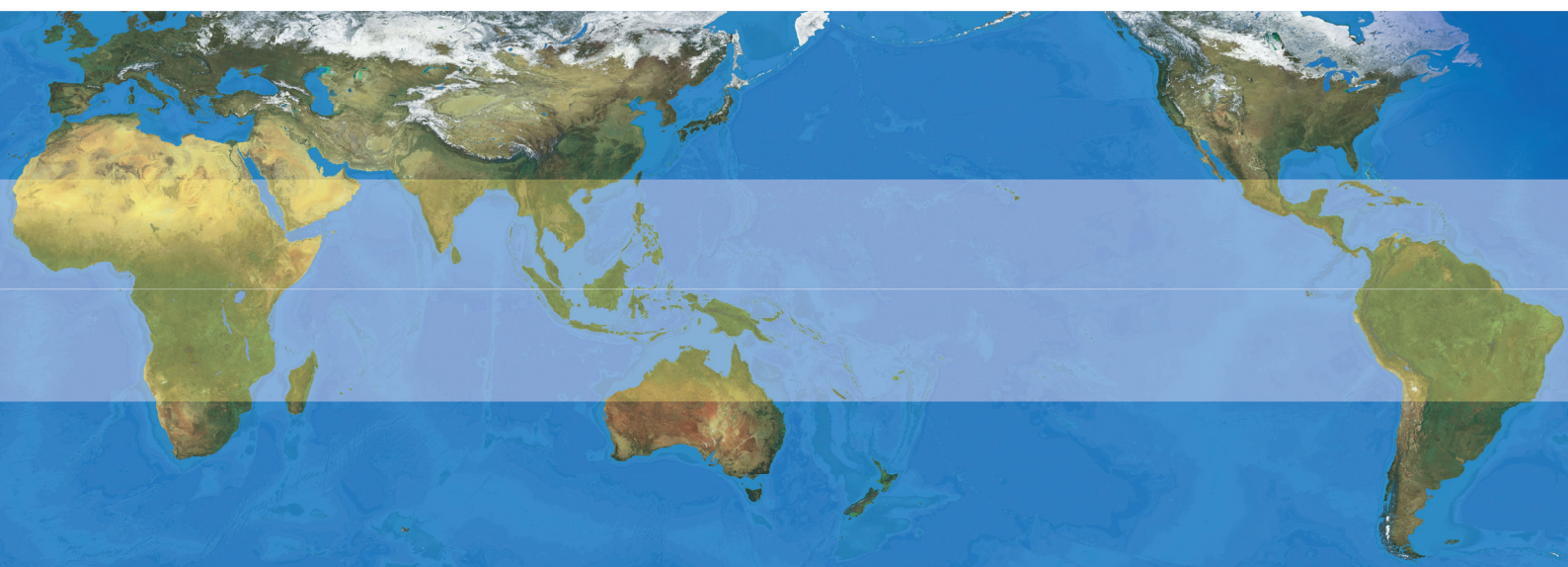




# STATE OF THE TROPICS

2014 REPORT



A comprehensive report by key research institutions exploring environmental, social and economic indicators

[Executive summary](#)



Cairns  
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## Executive summary

In early 2011 a group of leading research institutions with an interest in tropical issues united to examine the condition of life in the Tropics. The group met in Singapore in mid-2011 to scope a project that would draw on shared expertise to report trends across a broad range of environmental, social and economic indicators. The intent was to shed light on a simple question: Is life in the Tropics getting better?

This report is the culmination of that collaboration. Across a broad range of environmental, social and economic indicators, the Tropics emerges as a critical global region with a unique set of development challenges and opportunities. The Tropics covers only 40% of the world's surface area, but hosts approximately 80% of its terrestrial biodiversity and more than 95% of its mangrove and coral reef-based biodiversity. The tropical world's economy is growing 20% faster than the Rest of the World and many tropical nations are important contributors to world trade, politics and innovation. The Tropics is home to 40% of the world's population, and 55% of the world's children under the age of five years old. By 2050, some 50 per cent of the world's population and close to 60% of the world's children are expected to reside in the Tropics. Advances in technology are providing a platform for expanding business opportunities, enhancing prospects to reduce poverty, and improving education and health outcomes. Incomes are higher, infrastructure is more accessible and life expectancy is the highest it has ever been.

While there have been rapid improvements, assessment of key indicators of wellbeing such as life expectancy and economic output per capita show that the Tropics still lags behind the Rest of the World. The region is at a critical juncture. The resources required to sustain larger populations and economic growth are putting significant and increasing pressures on the natural environment; poverty remains prevalent in many areas; many nations suffer from poor health and educational outcomes; significant investment in infrastructure is still required in many nations; and, in some cases, political and economic instability and poor governance are major constraints that limit development. Clearly, while on the right track, much remains to be done. The range and significance of shared issues facing nations and territories in the Tropics suggests it is timely to examine the characteristics and challenges facing the tropical region as an entity in itself.

By assessing a broad range of environmental, social and economic indicators the inaugural State of the Tropics Report shines a light on the people and issues of the tropical world, and contributes to efforts to improve the lives of the peoples of the Tropics and their environments.

In this report, findings are reported based on two key systems essential to assess progress and sustainability; the ecosystem and the human system. The ecosystem is recognised as providing services that underpin all life on Earth. The human system is considered a subset of the ecosystem acknowledging that ecosystem 'health' is essential to sustainable health, development and progress in the human system.



## The Ecosystem

For many ecosystem indicators, the Tropics is in much better condition than the Rest of the World, although increasing population and affluence are placing greater pressures on the natural environment. Rapid growth in global trade and the exploitation of resources for export markets by more developed nations are also contributing to the ongoing and increasing risk to the ecological health of tropical ecosystems.

### Key Findings:

#### The Atmosphere

- Across the world total and per capita greenhouse gas emissions are increasing.
- Consistent with rapid economic growth since 1980 the Tropics' share of global energy generation has more than doubled, from 7% to 15%. The Tropics produces 23% of global renewable energy, mostly through hydroelectricity generation.
- Air quality has improved in the Tropics and in the Rest of the World in the 20 years to 2010. The extent of the improvement is variable by region, and is in part dependent on climatic and geographical constraints. However, no tropical region has yet reduced PM<sub>10</sub> levels (a measure of small particulate matter) to the World Health Organization's guideline of 20µg/m<sup>3</sup>.

#### Land and Water

- Nearly one-third of all land in the Tropics experienced some form of degradation over the past three decades. Deforestation and poor agricultural practices are the major causes of degradation in the Tropics.
- Although the amount of land used for agriculture increased by only 2% in the Tropics between 1980 and 2009, productivity of that land has increased dramatically. Livestock production increased by almost 90% and cereal production more than doubled. However, agricultural productivity in the Tropics remains significantly lower than in the Rest of the World.
- The Tropics has just over half of the world's renewable water resources (54%), yet almost half its population is considered vulnerable to water stress. Although tropical rivers are on average less polluted than those in the Rest of the World, there is large regional variation, with South East Asia having the highest pollution discharge in the world.

#### Oceans

- Exploitation of wild marine food resources in the Tropics has grown rapidly over the past 60 years due to greater demand for seafood from a growing and increasingly affluent population and greater fishing effort by international fishing vessels.
- The rate of growth in marine catch has slowed considerably in recent years as more fisheries become fully exploited or overexploited.
- Threats to coral reef systems have increased markedly in recent years with over half the reefs in the Tropics now considered to be at medium or high risk of damage.
- The Tropics host nearly 95% of the world's mangrove forests by area and 99% of mangrove species. The area of mangrove forest has decreased in all tropical regions since 1980.



Sing sing, Papua New Guinea.  
Image: Mark Ziembecki.





### Biodiversity

- Biodiversity is greater in the Tropics across most taxonomic groups, with an equivalently higher proportion of threatened species. For those plants and animals for which there are adequate data, loss of biodiversity is greater in the Tropics than in the Rest of the World.
- The Tropics have a greater proportion of terrestrial area under formal protection than the Rest of the World. However, management effectiveness in these protected areas is variable, and many are still subject to illegal encroachment and exploitation.
- The proportion of marine area under formal protection is lower than for terrestrial areas, and the proportion under protection in the Tropics is lower than for the Rest of the World, although the gap is narrowing.
- Tropical biodiversity is being threatened by the rapid loss of primary forests, though since 2000 the rates of loss are reported as slowing in most – though not all – regions. New remote sensing technologies suggest losses may be under reported in some regions.

Into the future, the challenge will not only be to sustainably manage resources, but to also recognise the importance of less tangible aspects of ecosystem health and services that operate at multiple scales in both time and space. This will require cooperation at local, national and international scales to ensure that valuable ecosystems are protected and maintained.

### The Human System

#### Society

Societies are the result of humans interacting with one another, sharing interests, cultures and traditions. Healthy, connected societies are essential for growth and wellbeing. This section of the report explores the status of tropical societies in terms of poverty, urban and slum living conditions, health, education and employment.

Outcomes are improving rapidly for the majority of Society indicators across the Tropics. A smaller proportion of people are living in extreme poverty, and more people have access to a more nutritious diet, and have better health and education outcomes than in past decades. Despite these improvements, the Tropics bears a disproportionate share of the global burden of many communicable and preventable diseases.

#### Key Findings:

#### Poverty and urbanisation

- Globally, extreme poverty has declined by almost 50% since the early 1980s, but more than two-thirds of the world's poorest people live in the Tropics. Most poverty reduction in the Tropics has occurred in South East Asia and Central America. The number of people living in extreme poverty in Central & Southern Africa has more than doubled in this time although the rate has been stable over the past five years.
- Consistent with the higher levels of poverty, more people experience undernourishment in the Tropics than in the Rest of the World. However, the



prevalence of undernourishment in the Tropics has declined by one-third over the past two decades.

- In the Tropics the urbanisation rate has increased considerably faster than globally, from 31% of the population in 1980 to 45% in 2010. Despite this, a greater proportion of people in the Rest of the World (56%) live in cities compared with the Tropics.
- The proportion of the urban population living in slum conditions is higher in the Tropics than in the Rest of the World.

### Health

- Life expectancy has increased across all regions of the Tropics in the past 60 years, but is still well below that of the Rest of the World. Nonetheless, the gap has narrowed from 12.1 years to 7.7 years since 1950.
- All regions in the Tropics have experienced significant decreases in maternal and child mortality rates since 1950. However, on a global scale the Tropics accounts for the vast majority of these deaths, with 76% and 72% of mother and child under-five deaths respectively.
- The adult obesity rate in the Tropics is lower than in the Rest of the World, but is increasing at a faster rate. Non-communicable diseases are a growing cause of illness, disability and death in both the Tropics and the Rest of the World.
- HIV prevalence among people aged between 15 and 49 years is higher than in 1990 but has stabilised or declined in most regions of the Tropics after peaking in the mid to late 1990s, and the AIDS mortality rate has been declining in all regions since 2005. Compared with the Rest of the World, prevalence and mortality rates are higher in the Tropics.
- Except in Oceania, tuberculosis incidence has decreased in all regions of the Tropics since 1990. The Tropics represented 56% of new cases globally in 2010.
- There are no time series data for malaria, but in 2010 the Tropics represented 96% of cases and 99% of deaths from malaria, with Central & Southern Africa having the greatest burden.
- There are no time series data for dengue, but available data suggest 72% of infections occur in the Tropics, with South Asia and South East Asia having the highest number of cases, and the Caribbean the highest incidence rate. Other neglected tropical diseases such as soil transmitted helminthiases, schistosomiasis and lymphatic filariasis cause significant disability, disfigurement and death, especially in impoverished communities in the Tropics.

### Education and Work

- Mean years of schooling of adults has almost doubled in the Tropics since 1980, but is still 2.5 fewer years of schooling than adults in the Rest of the World.
- Youth literacy rates have increased in all regions of the Tropics except in Oceania since 1990, but are consistently lower than in the Rest of the World.
- Adult literacy rates have increased faster in the Tropics than the Rest of the World but are still considerably lower. Despite the improvements, the overall number of illiterate adults in the Tropics is increasing.
- The unemployment rate is cyclical and influenced by economic growth. In the Tropics, the unemployment rate has declined steadily since the turn of the century and only showed a small increase in 2009 during the global financial crisis, before returning to pre-crisis levels.





## Economy

The past 60 years has seen a dramatic rise in living standards across the world, and even nations that are relatively poor today enjoy living standards that were unprecedented 100 years ago. The reasons for this development are varied and complex, but economic growth is a useful indicator of improvements in living standards. Nations that have strong economic growth are better able to reduce poverty rates, strengthen political stability, improve the quality of the natural environment and even diminish the incidence of crime and violence.

### Key findings:

#### Economic output and government

- The Tropics has outperformed the Rest of the World in terms of economic growth over the past 30 years. The Tropics is now estimated to represent 18.7% of global economic activity, up from 14.5% in 1980. Despite this, available data suggests Gross Domestic Product (GDP) per capita in the Tropics is currently estimated to be only one-third that of the Rest of the World.
- The public sector debt service burden has been improving across most regions of the Tropics over the past three decades as a result of stronger economic growth and, especially for poorer nations, the impact of debt relief programs. As a proportion of GDP the debt service burden declined in the Tropics by two-thirds between 1980 and 2010.

#### International trade and investment

- Exports of goods and services as a percentage of GDP have grown rapidly in the Tropics in the past 30 years, increasing from 25% to 47%. Export earnings, however, are only 21% of the global total. Export earnings tend to be more important to national incomes in the Tropics than in the Rest of the world.
- Imports of goods and services to tropical nations have increased rapidly in the past 30 years from 26% to 45% of GDP. The volume of imports to the Tropics grew by 210% during this period. Nevertheless, the volume of exports continues to exceed the volume of imports.
- Foreign investment increased in all regions of the Tropics in the 30 years to 2010. Investment to tropical nations increased from 0.7% of Gross National Income (GNI) to 3.5%.

#### Science and technology

- In the Tropics investment in research and development is increasing modestly, while the number of published science and technical journal articles and enrolments in tertiary education are growing rapidly from a low base. There is substantial regional variation in trends.
- Despite these improvements, compared with the Rest of the World, there is less investment in research and development, fewer tertiary enrolments per capita and fewer scientific and technical journal articles produced in the Tropics. Investment in technology and innovation will be important for the tropical region as a whole to be competitive in future knowledge-based economies.



## Governance

Governance is about how companies, institutions and nations are organised to manage affairs, power and responsibilities. It is the process used to implement and monitor decisions, policies and legislation.

Generally, the Tropics shows a poorer result than the Rest of the World across governance indicators. However, there has been rapid improvement in recent decades.

### Key Findings:

#### Human security, crime and corruption

- Refugee numbers in the Tropics declined significantly during the 1990s, but numbers have stabilised at around 4 million over the past decade. The decline in refugee numbers in the Tropics between 1990 and 1999 was driven by the repatriation of significant numbers of refugees to Mozambique and Ethiopia. Although not reported here, refugee numbers in the Rest of the World have increased recently due to conflict in the Middle East.
- Although time series data are not available, the homicide rate in the Tropics is considerably higher than in the Rest of the World. Overall, the Tropics reported a homicide rate of 14.5 per 100,000, compared with a rate of 5.6 per 100,000 in the Rest of the World. However, within the Tropics there is great regional and national variation. For example, the homicide rate in South America was 32.9 per 100,000 compared to 5.1 per 100,000 in South Asia.
- The Tropics achieved lower scores than the Rest of the World for a range of governance indicators, indicating higher rates of corruption.

#### Gender equality

- Improving wellbeing across society requires people to have similar opportunities with respect to education, employment and decision-making.
- Comparing the Tropics with the Rest of the World, fewer females attend secondary education relative to males, although the gap is closing.
- Globally, the representation of women in different sectors of society is improving. The proportion of women in national parliaments worldwide increased from 12% in 1997 to 20% in 2011. The improvement is broadly similar in the Tropics and the Rest of the World, increasing from 10% to 18% and 13% to 20% respectively.

#### Infrastructure

- Worldwide, the rate of gross capital formation as a percentage of GDP has declined marginally since 1980, but is highly variable across nations and, in the Tropics there has been an upward trend. The performance of the Tropics varied substantially with some regions displaying higher growth and variability than others.
- Although the gap has narrowed, the proportion of the population with access to safe drinking water is lower in the Tropics than in the Rest of the World. In the Tropics the proportion of the population with access to safe drinking water has increased from 67% to 81% since 1990.
- Poor sanitation is a major issue in many tropical nations, especially those with





rising populations and increased urbanisation. However, global sanitation coverage increased from 48% of the population in 1990 to 63% in 2010, and the number of people with access to improved sanitation facilities increased from 2.5 billion to 4.3 billion. The number of people with access to improved sanitation facilities in the Tropics doubled from 0.7 billion to 1.4 billion.

#### Information communications and technology

- Over the past decade the mobile phone has emerged as one of the fastest growing consumer technologies ever introduced. In the Tropics, mobile telephony has become the dominant means of communication and the principal gateway to increased ICT access and use, with penetration rates reaching 68% up from almost zero in the early 1990s.
- Internet diffusion in the Tropics has grown quickly in terms of both users and penetration, though access is considerably less widespread than mobile communications. A growth rate of 30% per annum since 2000 (twice that in the Rest of the World) has seen internet users in the Tropics increase to 471 million, or 17% of the population.

This report also includes five essays, written by experts from around the world, exploring climate change, health and development in the Tropics.