

ANNUAL
REPORT
2016-17



futureearth
research for global sustainability

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Text: Edited by Alistair Scrutton and Daniel Strain

Layout: Jerker Lokrantz/Azote

Cover: Front - View over Seoul, South Korea. Photo: J Lokrantz/Azote; Back - School of Bigeye trevally (*Caranx sexfasciatus*) in Malaysia. Photo: B Christensen/Azote

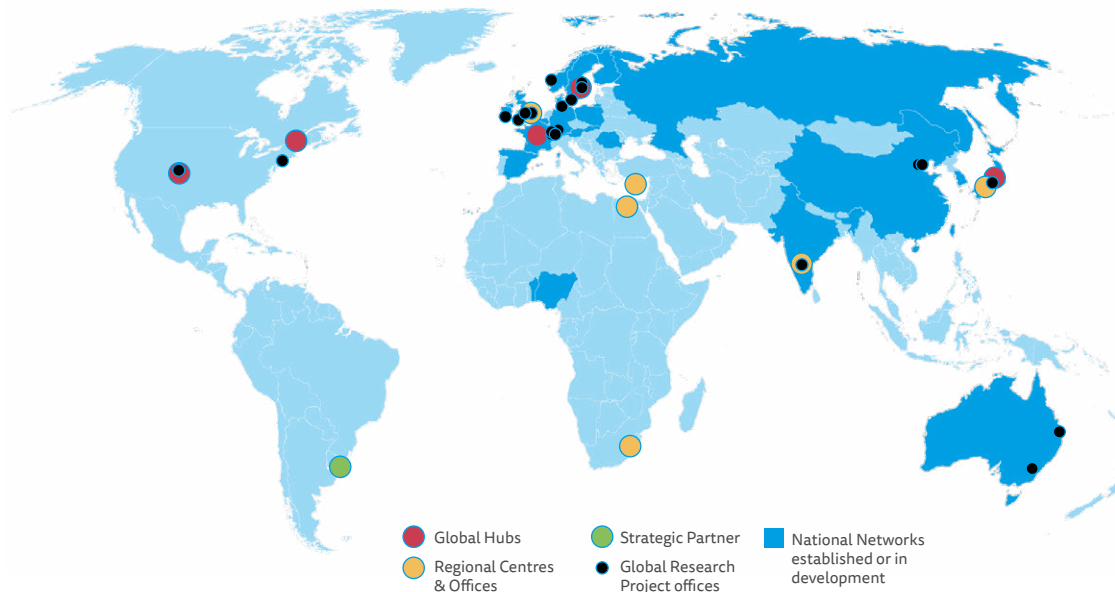
Printed on recycled, FSC-certified paper. This annual report covers the period from 1 April 2016 to 31 March 2017

Misty rainforest in Danum Valley, Borneo, Malaysia. Photo: B Christensen/Azote



FUTURE EARTH
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A GLOBAL COMMUNITY OF SUSTAINABILITY RESEARCH



Future Earth is a global community of researchers and practitioners committed to increasing knowledge of the Earth and finding solutions to the most pressing challenges facing humans and the planet. Our global hubs and regional and national networks on six continents mobilise scientists and other leaders in sustainability to generate the knowledge needed to support transformations to a more sustainable world. We also support 20 Global Research Projects that produce findings relevant to society on topics from the air to the oceans and biodiversity to sustainable cities.

LETTER FROM OUR GLOBAL HUB DIRECTORS

After 2015, a landmark year for sustainability that saw the launch of the United Nations Sustainable Development Goals and the Paris Agreement, the world got down to implementing its ambitions in 2016. The research community made huge strides to take stock of what it has accomplished and determine how it can support the fundamental transformations occurring around the globe.

The same was true for Future Earth. In the last year, we broadened our research agenda and deepened our engagement with professionals and innovators outside academia to deliver on our global mission: to generate the knowledge needed to build transformations to a more sustainable world. We participated in some of the biggest sustainability events of the year. We strapped virtual reality headsets onto attendees at the Habitat III summit in Quito, Ecuador, and discussed local climate data at the Marrakech Climate Change Conference in Morocco. We also strengthened our international ties by signing new strategic partnership agreements with the Group on Earth Observations and the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services.

We have also grown by leaps and bounds. In 2016-2017, Future Earth brought on new team members in research and communications. We launched new products for a range of communities, including researchers, local governments, businesses, non-governmental organisations and more: the Open Network (page 12), Future Earth Media Lab (page 13) and *Anthropocene* magazine (page 16), to name a few.

We grew across the globe. The last year saw the launch of new regional and national networks from South Asia to North Africa (See Global South, page 19). These networks are playing a crucial role in making Future Earth a truly global programme. They tap the best

minds in their borders to address local priorities for sustainability – from making communities in Asia more resilient to monsoons to securing clean drinking water in North Africa.

And we have made big steps in generating the knowledge needed to solve the challenges facing the world. In early 2016, Future Earth kicked off a series of research collaborations called Knowledge-Action Networks (page 31) focusing on the likes of ocean, health and cities. These collaborations are now providing a platform for diverse voices – hailing from research to policy and the arts – to share their knowledge and shape sustainability research on the global stage. Our Global Research Projects also produced leading research on the planet's land, air and water and the people who depend on them (research highlights, page 22). This year, we gained a new perspective on the diversity of animals and plants that live in mountains and learned when humans began to shift the world's climate.

The next year will also be an important one for Future Earth. We're gearing up for major global events like the 7th International Conference on Sustainability Science (ICSS) in Stockholm, Sweden, and the 2018 Cities and Climate Change Science Conference in Edmonton, Canada. We also recognise that Future Earth is a collaborative enterprise, and if we want to achieve our mission in 2017-2018, we need your help to do it. We invite all those working in sustainability to join us to generate integrate knowledges to help build a more sustainable world.

*Wendy Broadgate
Thorsten Kiefer
Fumiko Kasuga
Anne-Hélène Prieur-Richard
Josh Tewksbury*

- August 2017

STATE OF THE PLANET IN NUMBERS

In 2016-2017, Future Earth kicked off a new effort to take regular stock of the state of the planet – examining the good news and bad for humanity's life support system. As part of this initiative, we captured some of the latest research from sustainability science in an animated video and online slideshow launched on Earth Day.

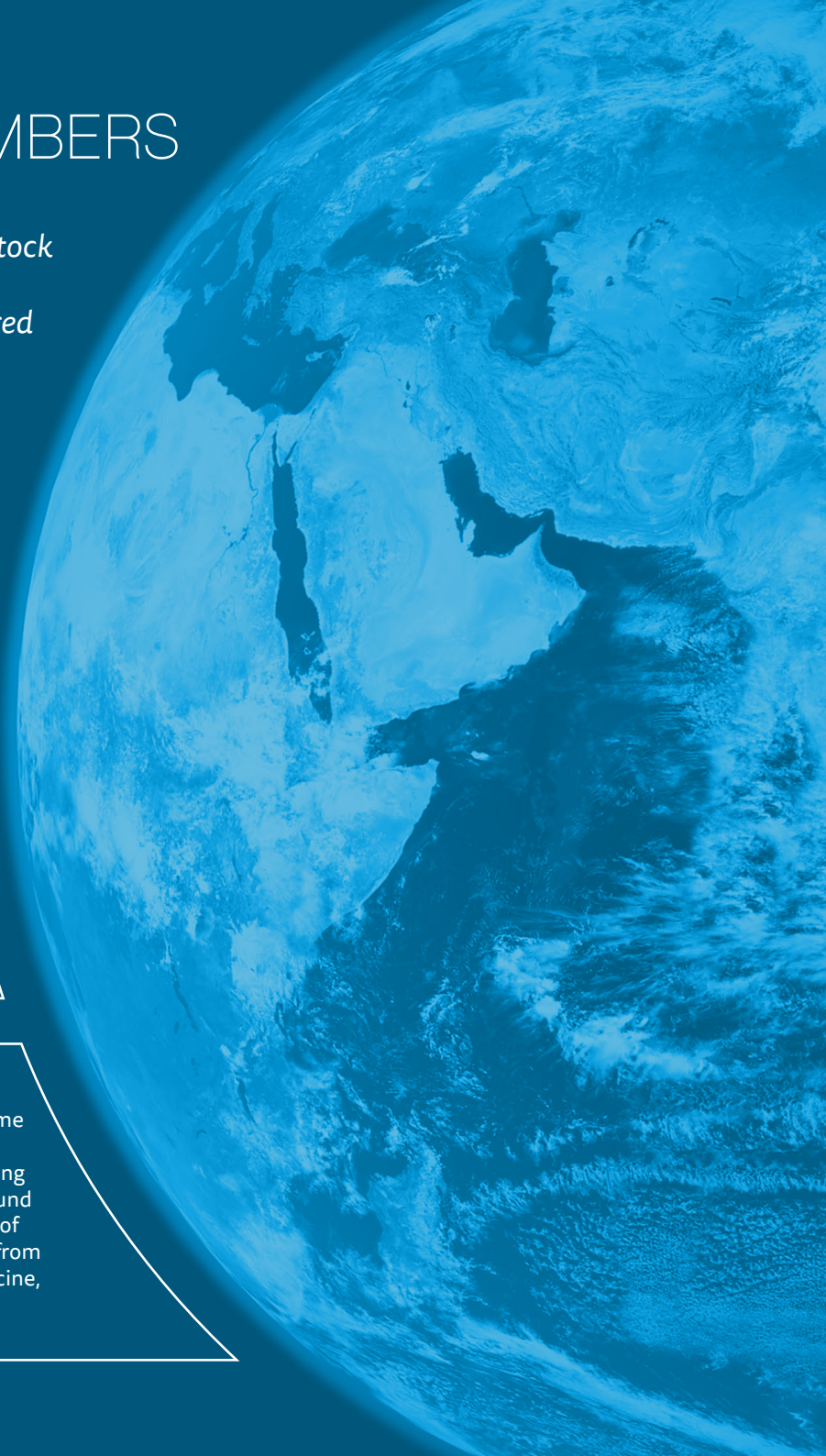
Here are five numbers that are important for understanding our place in the world:

The number of people living in extreme poverty has dropped by more than half in the last 20 years¹. This trend is part of a profound transformation in human wellbeing that has occurred around the world: People are living longer than they ever have², and infant mortality rates are plummeting³. Since 1990, 2.6 billion people have gained access to improved drinking water⁴.

-50%

1.75
TRILLION

The 62 richest people in the world in 2015 accumulated 1.75 trillion USD in wealth – the same as the wealth of the poorest 50% of the global population⁵. Despite the gains in human wellbeing seen in recent decades, inequality is soaring around the globe. This means that hundreds of millions of people are being left behind – unable to benefit from pioneering and life-sustaining advances in medicine, technology, energy and more.



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Research by Will Steffen and colleagues has shown that the world has crossed four out of nine “planetary boundaries”, key limits that were likely important to the emergence of human civilisations⁶. People are pushing Earth into uncertain and potentially dangerous territory – driving up global temperatures, clear-cutting forests, dumping fertilisers into rivers and oceans and forcing animals, plants and other organisms towards extinction.

According to the “Carbon Law” developed by a team of international scientists, the world must cut its emissions by half every decade to curb the growth in global temperatures⁷. The planet’s 7.5 billion people and counting now face the daunting challenge of moving Earth toward a new and more sustainable trajectory. But change is possible: In the last decade, new global investments in renewable energy jumped up nearly six-fold⁸.

1/2

9

BILLION

The world’s farmers will need to feed over 9 billion people by 2050. But research by Karlheinz Erb, a Global Land Programme fellow, and colleagues shows that there are many options for feeding a growing planet – all without requiring further deforestation⁹. If people cut down on their meat intake or switch to vegetarian or vegan diets, the options expand substantially.