

# Foreword

**Irina Bokova**, *Director-General of UNESCO*

In 2015, the United Nations General Assembly took a historic and visionary step with the adoption of the *2030 Agenda for Sustainable Development*. For the first time at this level, the role of science, technology and innovation has been explicitly recognized as a vital driver of sustainability. Sustainability depends on the capacity of states to put science at the heart of their national strategies for development, strengthening their capacities and investment to tackle challenges, some of which are still unknown. This commitment resonates at the heart of UNESCO's mandate and I see this as a call for action, as we celebrate the 70th anniversary of the Organization.

I see this edition of the *UNESCO Science Report* as a springboard to take the *2030 Agenda for Sustainable Development* forward, providing precious insights into the concerns and priorities of member states and sharing critical information to harness the power of science for sustainability.

The *UNESCO Science Report* draws a comprehensive picture of the many facets of science in an increasingly complex world – including trends in innovation and mobility, issues relating to big data and the contribution of indigenous and local knowledge to addressing global challenges.

Since the *UNESCO Science Report 2010*, clear trends have emerged. Firstly, despite the financial crisis, global expenditure on research and development has grown faster than the global economy, showing confidence that investment in science will bring future benefits. Much of this investment is in the applied sciences and is being spearheaded by the private sector. This points to an important shift in the landscape, with high-

income countries cutting back public spending, while private sector funding has been maintained or increased, and with lower income countries increasing public investment in R&D. The debate between quick scientific gains and long-term public investment in basic and high-risk research to enlarge the scope of scientific discoveries has never been so relevant.

Secondly, the North–South divide in research and innovation is narrowing, as a large number of countries are incorporating science, technology and innovation in their national development agendas, in order to be less reliant on raw materials and move towards knowledge economies. Broad-based North–South and South–South collaboration is also increasing, in order to solve pressing sustainable developmental challenges, including climate change.

Thirdly, there are ever more scientists in the world and they are becoming more mobile. The number of researchers and publications worldwide increased by over 20% during the period from 2007 and 2014. A growing number of countries are putting policies in place to increase the number of women researchers; at the same time, scientists are not only publishing more in international scientific journals but also co-authoring more with foreign partners, with more articles becoming freely available through open access. At different income levels, countries across the world are striving to attract and retain scientific talent, upgrading their higher education and research infrastructure and developing new scholarships and scientific visas. Private firms are relocating research laboratories and some universities are setting up campuses abroad to tap into a bigger talent pool.

With all this, we face the challenge of mobilizing these accelerating trends of scientific enterprise, knowledge, mobility and international co-operation to inform policy and take the world on a more sustainable path.

This calls for a stronger science–policy interface and for the relentless drive towards innovation. Achieving many of the Sustainable Development Goals will depend not only on the diffusion of technology but also on how well countries partner with one another in the pursuit of science.

I see this as the key challenge of ‘science diplomacy’ in the years ahead and UNESCO will bring the full force of its scientific mandate to bear to support member states, strengthen capacities and share critical information ranging from sustainable water management to technology and innovation policies.

This report is unique in providing such a clear vision of the global scientific landscape, reflecting the contributions of more than 50 experts from across the world. I am convinced that the analysis here will help clear the path towards more sustainable development, laying the foundations for more inclusive knowledge societies across the world.



Inua Bouau

