

**DECLARATION OF THE  
7<sup>TH</sup> WORLD SCIENCE FORUM ON  
The Enabling Power of Science**

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## PREAMBLE

With the encouragement and support of the founding organisations of World Science Forum, the United Nations Educational, Scientific and Cultural Organization (UNESCO), the International Council for Science (ICSU), the Hungarian Academy of Sciences, and all invited organisations and fellow scientists, we, the participants of the 7th World Science Forum held from 4th to 7th November 2015 adopt the present declaration.

World Science Forum (WSF), an outcome of the 1999 World Conference on Science, is a biennial event that since 2003 has been successfully assembling scientists, decision-makers from the world of politics and industry, representatives of civil society and the media to discuss critical global issues and the contribution of science towards meeting the challenges they present.

In line with the outcomes of 1999 World Conference on Science (WCS) and taking into account the 2011 Budapest Declaration on the New Era of Global Science and the 2013 Rio de Janeiro Declaration on “Science for Global Sustainable Development” we renew our commitment towards the responsible and ethical use of scientific knowledge in addressing the grand challenges of humankind.

The accelerating accumulation, use and diffusion of scientific knowledge and its application in technological innovations is reshaping our world. Advances in science have enabled us to confront hunger and disease, to tackle our ever growing demand for energy, to connect and communicate with immediate effect and they have provided the economic foundations for an improved quality of life for ever increasing population.

At the same time science has revealed the complexity of our world and laid bare the extent of human civilisation’s impact on the Earth’s fauna, flora and climate. Science has also enabled us to observe how we misuse and overuse our natural resources and how our way of life poses threats for present and future generations.

Science alone cannot offer solutions for the ever more pressing challenges of humankind in the 21st century, but science is at the heart of our greatest achievements and our most concerning challenges. Science offers the means to discuss and address our challenges. Much depends on how we choose to apply it.

We, the participants of the World Science Forum, call for concerted action and will mobilize the international scientific community to play our role to advance the use of science to support global and national initiatives to meet the objectives defined in the Agenda 2030, the Sendai Framework for Disaster Risk Reduction 2015-2030 and the upcoming agreement of the COP21 Paris Climate Summit. We support the use of scientific evidence in policy making and call for international collaboration to advance science as the foundation of sustainable development worldwide. We seek for improved quality in science education in particular at the early stage as an important pre-condition for young generations to enter into science and engineering careers.

## 1. Shift for new, sustainable development paths

We express our commitment towards the ambitious goals laid down in the Agenda 2030, as described in the outcome document “Transforming our world: the 2030 Agenda for Sustainable Development” of the United Nations Summit for the Adoption of the Post-2015 Development Agenda. In keeping with the UN objectives, we are determined to fight poverty and hunger, to promote just, equitable, inclusive and peaceful societies, and the restoration, protection and sustainable use of natural resources and ecosystems. We seek an integrated

approach in addressing the environmental, social and economic dimensions of sustainable development based upon the 17 Sustainable Development Goals (SDGs), prepared using best available knowledge and defined by the broad and comprehensive involvement of our fellow scientists.

We call for action towards the Sustainable Development Goals as an underlying approach in all policies. Such action in implementation must rest on sound scientific foundations taking into account latest developments in the social, physical, life, engineering and medical sciences. We offer our support for the monitoring and assessment of progress towards these goals and offer our expertise for the design, implementation and monitoring of the most appropriate and scientifically robust policies through transdisciplinary platforms such as Future Earth enabling coordinated action of scientists from all domains. To ensure that the objectives of the Sustainable Development Goals are embedded in the educational systems, we urge that schools science curricula in schools world-wide reflect the principles of sustainability.

We call for an inclusive approach to address emerging societal challenges including new migration patterns within the context of sustainable development. The role of transdisciplinary scientific analysis and collection of reliable data is crucial to promote a deeper understanding of social and environmental phenomena and preventive actions.

We are committed to take and promote urgent and transformative steps to enable a shift for a new development path towards sustainable, equitable and more resilient societies and economies.

At the same time, we acknowledge that there is a need to identify key regional and national priorities. For this reason, we highlight the importance of giving priority to policy measures that are evidence informed and open to appropriate science-based assessment, with a view to social, environmental and economic wellbeing. We call on governments to recognise and act on the importance of the co-operation between national governments and scientific bodies to build national and regional strategies that provide the best cost-benefit ratio towards meeting global objectives. It is only by the application of clear and carefully selected local priorities that we can reach the goals by 2030. These strategies must be regularly revised to reflect the progress made and they should make use of the new developments in science and technology.

## 2. Agreement on Climate Change

We endorse the reports and statements published recently by major scientific organisations including IPCC, ICSU, UNESCO, EASAC, and the outcome statement of the international science conference “Our Common Future under Climate Change” co-organized by UNESCO, ICSU, Future Earth and major research institutions in France in July 2015. It is unequivocal that climate change is strongly influenced by the way we manage our environment, our natural resources, and how we produce and use energy and food. Climate change and its consequences will eventually affect us all: in some regions with fierce and immediate effects, in others with less obvious consequences, but overall they induce widespread changes in our natural and social systems.

Based on the available scientific knowledge it is only by concerted global actions and smart science-informed policies that we can provide solutions to limit warming of the climate system to 2°C above pre-industrial levels, and thus reduce the risks and mitigate the consequences of climate change.

We recognize that fair access to energy services is essential for the achievement of the SDGs and that, addressing the twin challenges of sustainable development and climate change mitigation will require enhanced use of low-carbon and renewable energy sources and improved energy efficiency. Concerted efforts are thus required to address the energy challenges and support the UN initiative of “Sustainable Energy for All”.

We call on our fellow scientists, policy-makers and leaders of government and industry to implement collaborative action to promote the achievement of climate goals. Joint application of smart technologies and policies can promote the aspired change in our attitudes and practices to curb pollutants and regain responsible stewardship of the world’s natural resources and mitigation of climate change.

The Paris Climate Summit 2015 (COP21) is a decisive moment for humanity to achieve a universal and legally binding agreement on climate. Any delay in action or an agreement on anything but the most ambitious goals will further compromise our ability to adapt to climate change under controllable and manageable conditions.

We call for wide and effective participation at COP21, and urge our governments to aim for the most ambitious agreement on offer.

### 3. Knowledge-base for disaster risk reduction

We express our commitment towards the goals and outputs of the Sendai Framework for Disaster Risk Reduction 2015-2030 calling to “Enhance the scientific and technical work on disaster risk reduction.”

The 3rd UN World Conference on Disaster Risk Reduction held in Sendai Japan on March 2015 took stock of the new opportunities opened up by advancements in science and technology to mitigate risks and build resilience to respond to natural and manmade disasters, also thanks to a very active delegation of scientists co-ordinated by ICSU and the Integrated Research on Disaster Risk (IRDR) Programme. It has also revealed our increased vulnerability to manmade disasters and the growing potential for emergencies to have catastrophic effects on dense populations, the environment and the economies of our highly interdependent world.

We welcome the mobilization of relevant institutions, networks and initiatives, to provide a synthesis of the current situation and proposals for actionable research, to assess and monitor disaster risks, to engage in communication efforts of such risk, to develop overall capacity in dealing with risk and to provide science advice to both policy makers and elected officials in order to develop resilience.

Disaster preparedness needs to be strengthened with scientific and analytical input for effective response and to ensure that systems are in place for effective recovery. Notable disasters have also demonstrated that the foundation for the recovery, rehabilitation and reconstruction phase, needs to be established in anticipation of the event, and is an opportunity to «Build Back Better» (BBB) through integrating disaster risk reduction measures. In this context, we welcome the Science and Technology Conference on the implementation of the Sendai Framework for Disaster Risk Reduction 2015-2030 to be held in 2016, which is co-organized by the UN Office for Disaster Risk Reduction (UNISDR) and its Scientific and Technical Advisory Group in collaboration with key partners. The Conference will launch the call for UNISDR Science and Technology Partnerships to implement the Science and Technology Road Map for DRR to 2030.

We call on governments to develop a comprehensive and knowledge-based approach to disaster risk reduction.

This should include a more sophisticated public understanding of risk, strengthened disaster risk governance systems, investment in disaster risk reduction for resilience, preparedness for effective response, and a commitment to «Build Back Better» in recovery, rehabilitation and reconstruction.

There is a need for disaster risk governance at the national, regional and global levels. Governments should ensure the coherence of national and local legislative, regulatory and policy frameworks. Such frameworks should operate on an evidence base and guide, encourage and incentivize the public and private sectors to take action and address disaster risk.

We encourage public and private investment in disaster risk prevention and reduction. We recommend the development of new mechanisms to improve the speed of the allocation of funds to address the consequences of disasters. It is essential to enhance the economic, social, health and cultural resilience of persons, communities, countries and their assets, as well as the environment. These can be drivers of innovation, growth and job creation. Such measures are cost effective and instrumental to save lives, prevent and reduce losses and ensure effective recovery and rehabilitation.

### 4. Scientific advice for policies

We are deeply convinced that sound, independent scientific advice largely improves the quality of policy-making. We welcome recent global trends for the more pronounced use of science in policy-making and the efforts to bridge the difficulties inherent in the roles of scientists and policy makers.

The expansion of science advice mechanisms ranging from informal personal interactions, through voluntary or requested reports created by well-established networks of academies, such as the InterAcademy Partnership (IAP) and related regional networks such as EASAC, to the formal advisory structures of both legislative and executive bodies, has also made more apparent the fundamental responsibilities that follow the provision, communication and use of advice.

The need to define the principles, processes and application of science advice and to address the theoretical and practical questions regarding the independence, transparency, visibility and accountability of those who receive and provide advice has never been more important.

The OECD report on Scientific Advice for Policy Making (2015), and the establishment of the International Network for Government Science Advice (INGSA), under the aegis of ICSU both mark an important milestone in this process. It also highlights the global emergence of this field that the European Union has recently announced a new Science Advice Mechanism (SAM) and that UNESCO is taking a leading role in better connecting science to policy in the context of the Agenda 2030 and now carries a mandate to serve as the Secretariat for the Scientific Advisory Board of the UN Secretary General.

We call for concerted action of scientists and policy-makers to define and promulgate universal principles for developing and communicating science to inform and evaluate policy based on responsibility, integrity, independence, and accountability.

We call on all scientists to monitor and assess policy areas and provide, in a pro-active manner, independent and timely science advice even when its application is not guaranteed or not expected.

### 5. International collaboration for capacity-building and mobilisation in the developing world

Despite clear advances in emerging economies the knowledge and economic divide between the developed and developing world have widened and is curbing the potential of science and technology to contribute to global development. Research groups in developing countries often operate in isolation, limiting the scope and success of their work. Regional economic integration now promoted by many African, Asian and Latin American governments is an essential component to build and accumulate capacities to harness and govern modern sciences.

International collaboration is required, and better understanding and use of data are essential, to achieve long-lasting progress in research and innovation particularly in the developing world.

Lack of a ‘critical mass’ in the knowledge based economy greatly affects the research and productive sectors in many regions of the world. Underinvestment in capacity building for research and innovation prevents science and technology to promote sustainable development.

For science, technology and innovation to attain their full potential and to be truly transformational, people’s knowledge, talent and skills need to be improved with a particular focus on the mastering of science, technology, engineering and mathematics (STEM). It is hence critical to promote adequate investment in STEM education at all levels.

We call upon governments to improve the governance of science by empowering women and young scientists, stimulating policy debates, exchanging knowledge of best practices and lessons learned, and by strengthening local institutions.

To ensure the adherence to the universal right to education we urge governments to provide education for all people residing in their countries, including children in displaced communities. We call upon the UN system to support such efforts.

### 6. Balanced investment in science

Scientific discoveries provide the foundation and drive social and economic development. We call for a balanced investment in science, respecting the need for both curiosity-driven and demand-driven research. Transformative science is at first unpredictable in nature; it requires openness to new and unforeseen pathways to promote a paradigm change in technological and social development. Funding mechanisms that allow for innovative research should also be part of balanced funding schemes.

We call for an equitable participation of women, young scientists, and minority groups in the practice and application of science, also through capacity-building programmes addressed to young scientists. The 2015 UNESCO Science Report provides updated information on the participation of women in science.

We call upon all governments to act on clear responsibilities to establish long-term sustainable and balanced mechanisms for the funding of scientific research especially in the context of budgetary constraints. We equally call for the mobilisation of research-derived knowledge to guarantee that it fulfils its role to serve society.

