Science and Technology in Society *forum* (STS *forum*)
17th Annual Meeting
Kyoto, Japan, October 6, 2020

STATEMENT

1. The 17th Annual Meeting of the Science and Technology in Society *forum* took place from October 3 to 6 live online from a base studio in Kyoto, with online participation of about 1,500 global leaders in science and technology, policymaking, business, and media from nearly 120 countries, regions, and international organizations. This meeting is taking place in one of the most challenging periods in history, when a pandemic is devastating the world, and the impacts of climate change require redoubling our efforts at limiting emissions and promoting adaptation and resilience if we are to adhere to a sustainable development path.

COVID-19 Pandemic

2. The COVID-19 pandemic that has forced this change in our format has already infected more than 35 million persons and claimed over a million lives. It has demonstrated the vulnerability of human societies, and underlined the global, regional, and local inequalities among our citizens. The pandemic is not just a public health crisis, an economic crisis, and a social crisis, but also more seriously, a crisis of confidence.

3. The public health crisis has unleashed an economic crisis of unprecedented magnitude, as measures to combat the spread of the disease have impacted economic transactions within and between countries and affected economic growth and jobs. In many countries economic contraction and massive unemployment are the new reality. Entire sectors like travel and hospitality are devastated. Supply chains have been disrupted. Patterns of work have been transformed, with many of those who can do so working from home. Education is facing radical challenges as distance learning supplements, if not replaces, face-to-face instruction. The social and economic impact is enormous and we are facing an uncertain future. The future will depend on science. Young people must not only take up the torch of science, technology, and innovation, but society must also have greater confidence in science. Trust must be rebuilt. This in turn requires more transparency in science and greater, inclusive, multi-faceted public dialogue that rejects disinformation and efforts to politically pressure scientists and censor scientific reports.

4. The pandemic has struck countries around the globe unevenly, and success in coping with COVID-19 has varied enormously, with countries in East Asia doing better than most other countries. We are still trying to develop better tests, therapeutics, and vaccines, which when developed must be shared with all who need them, not just those who can afford them. Developed countries must work with the WHO at sharing information, tracking the spread of the virus, and mapping the measures for its containment as well as ensuring that the best of science and technology, shared throughout the world. A global problem requires a global solution.

5. The pandemic-generated lockdowns and other measures have devastated the economies of many countries. In 2020 the global economy is contracting significantly, with the US and Europe contracting even more. Firms rush to cope with the challenge, by redesigning their supply chains, accelerating digitization, and reducing employment. This has led to tens of millions of unemployed, and the rich countries' governments have adopted enormous stimulus packages in the trillions of dollars to try to avoid or reduce bankruptcies of firms and provide sustenance for those who have lost their employment as a result of the pandemic.

6. Meanwhile, these enormous stimulus packages are also an opportunity to promote a "Green Recovery" where government funding is used to transform the economy, not simply

seek to recreate the past. Thus, this crisis presents a window of opportunity, a historic chance to universally transform all sectors in order to achieve the Sustainable Development Goals and the Paris Agreement. We can rebuild in new ways to make our economies and our societies more resilient to environmental challenges and future health crises such as the current pandemic.

Education

7. Education is being transformed, with the introduction of digital technologies and distance learning, which challenge the conventional models of education systems inherited from the past. Rapid changes in both science and technology mean that lifelong continuous training is needed to avoid the constant social dislocation of older workers. Science and technology are essential for driving innovation but are not enough to solve major and complex challenges like the rise in non-communicable diseases, issues of social inequality, or climate change. To develop solutions that take into account culture, tradition, and geopolitical reality, science and technology must be better integrated with human and social sciences.

Energy and Environment

8. In the wake of this pandemic, society has the opportunity to sustain a significant part of the savings in fossil fuel consumption achieved during the period when travel was restricted in order to accelerate toward a low-carbon future, aiming for a more energy-efficient society. In this context, nuclear energy, including small modular reactors (SMRs), remains a potentially important source for baseload electricity generation, under strict conditions of safety, security, and non-proliferation. Investment is needed in advanced technologies for low-emission energy sources, including hydrogen, reliable energy storage, massive electrification, and negative carbon emissions such as carbon capture and utilization. A proper framework of market-based policies and incentives will be needed to reduce greenhouse gas emissions, and IT-based energy management systems will be essential for efficiently balancing sustainable energy supply and demand with minimum damage to the environment, including protection of biodiversity and movement towards precision agriculture to ensure food and nutrition security for a growing global population undergoing the stresses of climate change.

The ICT Revolution, AI, and Society

9. The ICT revolution continues apace with robotics, AI, the Internet of Things (IoT), and cloud computing all evolving rapidly. AI builds on the availability of large sets of digital data and profits from the recent conceptual and practical advances in the domain of machine learning. However, AI should neither be reduced to only its technical aspects nor delegated solely to computer scientists and engineers. It is important to address AI from multiple perspectives. All sciences, including the humanities and the social sciences, can contribute to better understanding the possible applications and consequences of AI and ultimately improve the design of tools built from AI. Scientific organizations should contribute to helping decision-makers and the general public understand the implications, benefits, and potential risks of AI.

Global Governance of Information

10. Data is not only a source of corporate and national competitiveness as well as of scientific and medical progress; it is also a force driving economic development. However, problems including growing economic disparity due to huge enterprises' data oligopoly, severe violations of privacy, and promotion of discrimination or biases through intended/unintended misuse of personal information have emerged. Rising anxiety and distrust toward information caused by fake news expanding through media, including social networking services, and so-called "infodemics," which has become evident especially during the COVID-19 pandemic, pose major challenges to fundamental values like stability, mutual trust, and respect for human

dignity. It is important to build a frame of reference enabling ethical, trustworthy, and proportionate use of personal data to address these issues.

Inclusive Participation

11. Inclusive participation in decision-making can be a key enabler to success. But around the world, systemic inequality is prevalent. From an economic standpoint, companies with more diverse leadership have been shown to be more successful. Various barriers, which may include structural challenges, access to services like childcare, access to education, cultural expectations or bias, stand in the way of achieving diversity with inclusivity. Governments and societies should actively work to overcome such barriers. Our discussions at STS on the lights and shadows of science and technology in society help move us in that direction.

12. We look forward to convening again next year in Kyoto and have agreed to hold the 18th Annual Meeting of the STS *forum* from Sunday, October 3 to Tuesday, October 5, 2021.