

The 22nd Science Council of Asia (SCA) Conference
“Science for Sustainability, Resilience, and Human Well-being”
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Declaration

Science and technology have contributed greatly to sustainability, resilience, and human well-being since the beginning of the Industrial Revolution in the second half of the 18th century. They have brought about economic development and the social order of the present times. However, economic development propelled by them has accompanied ecological degradation as shown well in climate change, and nuclear weapons they helped to manufacture can annihilate the whole human species. The present international politics in which nationalism is rising and globalism is receding has been making ecological and nuclear threats loom much larger than before.

Development in science and technology has entered a new phase called the Fourth Industrial Revolution in the 21st century. It includes revolutionary breakthroughs in wide-ranging scientific fields including big data science, AI, nanotechnology, biotechnology, materials science and quantum computing. Many of these breakthroughs are now developing and building on each other very fast, resulting in a fusion of technologies across the digital, physical, chemical, and biological worlds.

Would these new scientific breakthroughs continue to contribute to sustainability, resilience, and human well-being? They certainly can do so, but can also disturb them seriously. They may be misused to speed up the ecological collapse of the earth by taking out its resources more efficiently while pumping back more waste and poisons into its soil, water, and atmosphere. They may be misused to harm social sustainability by rendering a large number of white-collar workers unnecessary and making them lose jobs and roles in their society. They may be misused to undermine the epistemological foundation of human beings by preventing them from distinguishing between authentic facts and truth on the one hand and fake “facts and truth” on the other.

Science and technology have always been a double-edged sword that can be used either beneficially for human well-being or maliciously for human destruction. If we exaggerate, revolutionary scientific breakthroughs of the Fourth Industrial Revolution may be both a blessing and a curse upon human beings. How can we secure the beneficial use of scientific development, while preventing its malicious use? About 200 Asian scientists seriously discussed this question at the 22nd SCA Conference held in Seoul between October 19 and 21, 2023. They have presented various perspectives and measures for the beneficial use of scientific development, and we hereby declare that we should cooperate to take up the following eight tasks for this goal.

First, we must utilize advances in science and technology for sustainable development.

The UN General Assembly adopted the 17 goals of sustainable development in 2015, and they were the topic of the 18th Tokyo SCA conference in 2018. The 17 goals consist of three dimensions; ecological, social, and economic sustainability. Advances in science and technology must be used, above all, to promote ecological sustainability, but they must also be used to balance and reconcile three dimensions of sustainability that are often contradictory to each other as exemplified in the relationship between economic growth and ecological collapse.

Second, we must utilize biotechnology for human well-being.

There are still many diseases modern medicine cannot cure such as Alzheimer's disease, Parkinson's disease, and various kinds of cancers, and we must utilize biotechnology to reduce risks and reverse effects of such diseases. It should also be noted that the ecological collapse causes many diseases such as stroke, heart disease, lung cancer, and asthma. To protect our health, we must couple the use of biotechnology with the efforts to lessen air, water, and soil pollution.

Third, we must promote the humanities and social sciences for a better living society.

The humanities help us to find the purpose and meaning of our lives, while natural sciences provide us with the means either to enrich or to destroy our lives. Social sciences show us ways to organize and manage our social lives in accordance with the purpose and meaning of our lives. Natural sciences will develop at an exponential pace, while the humanities and social sciences will not develop at such a pace. In view of this imbalance, we must pay a special attention to promoting the study of the humanities and social sciences which would help natural sciences to serve human well-being.

Fourth, we must promote the goal of carbon neutrality and pollution-free energy.

The Ukrainian war and global confrontation between the great powers have been disturbing the efforts to accomplish the goal of carbon neutrality and pollution-free energy. We, Asian scientists, must promote the implementation of carbon neutrality by asking all the countries, whether the great powers or the small powers, to reaffirm their commitment to this goal.

Fifth, we must develop knowledge and capacity for the COVID-19 pandemic.

The COVID-19 pandemic is not over yet, and another kind of pandemic may strike us again in the near future. In view of this possibility, we, with the experiences of the COVID-19 pandemic, now need to develop medical knowledge and capacity to prepare for such an unfortunate occasion. For such preparation, we need to develop a broad-spectrum antiviral drug that would be effective for a broad range of viruses.

Sixth, we must develop mega-data and AI technologies for human well-being.

We must develop mega-data and AI technologies, but, at the same time, should establish norms for their use. They may violate the privacy rights of individual human beings and algorithms trained in the past may perpetuate bad decisions of the past, including discrimination and inequality. Individual liberty should be safeguarded.

Seventh, we must secure resilient recovery from climate change.

We must formulate a powerful and just policy for resilient recovery from climate change. In connection with this task, the climate technology of developed countries for generating clean energy should be transferred to developing countries, the pledge of developed countries to provide 100 billion dollars annually for developing countries should be fulfilled, and the active participation of developing countries in the decision-making process of climate change mitigation policy should be guaranteed.

Eighth, we must secure educational adaptation in the digital transformation era.

Online education has helped greatly to make up for the loss of offline education which occurred due to the pandemic. The COVID-19 pandemic is now almost overcome, and offline face-to-face education has been resumed at all levels of education. However, we should adapt our education to the digital era by continuing to employ digital tools of education wisely as complementary means to education by humans ensuring equity.

We, Asian scientists, should be determined to make science serve sustainable development, resilient recovery, and human well-being, but not to allow it to serve the destruction of the ecological system and the extinction of the human species. We, Asians, are well fitted for this role as the Asian philosophy of life for the past several millennia has been to live harmoniously with nature rather than to conquer it. We, Asian scientists, must recover the value of our traditional philosophy of life, while catching up with the West, with the hope of surpassing it, in the development of science and technology.