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"Inequality in the era of the 2030 Agenda for Sustainable Development"

Session: High-level debate on frontier technological innovations – policies to accelerate the implementation of the Sustainable Development Goals

The Role of Research Universities in Technological Change and Sustainable Development

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I wish to thank Under Secretary General Shamshad Akhtar, Executive Secretary of ESCAP, Dr Mia Mikic, Director of the Trade, Investment and Innovation Division of ESCAP and other colleagues for the privilege of addressing this session. I further wish to congratulate ESCAP on its recent reports on the themes under discussion which have provided a valuable resource to many policy-makers in this region.

My intervention on the issues of frontier technological innovations and policies to accelerate the SDGs' implementation is in three parts: a brief statement to inform you what APRU is; secondly, some examples of our work on advanced technologies in order to inform today's debate; finally, I will propose some policy principles and express our willingness to partner with others to achieve the objective of effective cooperation on new technologies to produce shared prosperity and address inequality.

The Association of Pacific Rim Universities

APRU was founded in 1997 by the four university presidents of Caltech, UCLA, Berkeley and USC, in California, to bring together the presidents of the leading research universities on the Pacific Rim. There are now 50 members from 17 APEC economies. The International Secretariat is located in Hong Kong.

According to recent research metrics, the network's research output in quantity is greater than all countries except the US and China, and greater in quality than all countries except the US. This is another way of saying that our members collectively have a significant proportion of the research, education and innovation capacity of the APEC economies and therefore have a particular responsibility to ensure our scientific and technological discoveries bring benefits to the societies of the Asia-Pacific region.

We see our mission as bringing together thought leaders, researchers and policy-makers to exchange ideas on effective solutions to the challenges of the 21st century.

We know that today's challenges are too complex to solve alone and that acting together – and with partners in business, government and communities – there is almost no limit to what we can accomplish.

Our strategic priorities are to shape higher education and research, to create Asia-Pacific global leaders, to partner on solutions to major challenges, and to have international policy impact through leveraging our research and education capabilities into the public policy arena.

APRU's work on advanced technologies: some examples

I share with you these examples of our work related to today's topic in the hope that they may resonate with you and, perhaps, provide a basis for future collaboration with ESCAP.

The first is *"AI for Everyone: benefitting from and building trust in technology"*. The overall concept of this project is to create an open and accessible approach to AI that can be understood by people regardless of their geographic, generational, economic, cultural or other social background in order to form a trustful linkage between human beings and new technologies. The objectives are to access the benefits of AI, build awareness of the nature of the technology and, most importantly, develop responsible governance of the technology and its development.

The project engages academics from 12 diverse contexts and disciplines in Australia, Chile, China, Hong Kong, Japan, Mexico, Russia, Singapore and the US. It is led by two senior professors from Japan and Australia. The 12 policy research papers cover a wide range of issues, many of them mentioned in ESCAP papers as priority areas for policy development. We expect to publish them by the end of this year.

The second project is focused on *"The Transformation of Work in the Asia-Pacific in the 21st Century"*. The project is chaired by the Dean of Business at HKUST and engages academics from member universities and international institutions in Australia, China, Hong Kong, Japan, Korea, the Philippines and Singapore. The research papers will analyse how the digital future will transform the future of work, address economic risks and fears, fill gaps in existing research and develop new thought with the aim of empowering policy makers, civil society and other scholars to develop better solutions to the challenges of advanced technologies.

Both these projects are being undertaken in partnership with Google.

This week a third initiative is being launched at Korea University in Seoul on "Technology and the Aging Workforce" in order to clarify the emerging research agenda in this area. APRU has a long-standing program on Population Aging and this also intersects with our work on labour mobility. We are also contributing to APEC's work on population aging issues, in particular, the APEC Framework on Human Resources Development in the Digital Age. In March we contributed to the APEC Senior Officials' Meeting High-level Policy Dialogue on the Digital Economy in Port Moresby: 'Building on the APEC Internet and Digital Economy Roadmap'.

Last November, at the APEC CEO Summit and Leaders' Meeting in Danang, Vietnam, APRU organized the APEC University Leaders' Forum on The Fourth Industrial Revolution. Composed of business leaders, senior officials and university leaders this Forum produced a commitment that APRU will work with APEC on a public policy strategy and toolkit to bridge the skills gap in data science and analytics in the APEC economies.

APRU has other projects that address the issue of the potential benefits and threats of new technologies: on sustainable cities, on global health, on natural hazards and climate change, on women in leadership, on sustaining the Pacific Ocean (SDG 14)… I invite you to view our website for information on these initiatives.

Policy Principles

In the 21st century, there is much to hope for from the promise of rapid technological developments, many already well under way: water conservation, hydroponics farming, solar energy, fusion research, stem cell and other biomedical advances, nanotechnology, 'climate change' cities, huge increases in computing capability, increased life expectancy, the ability to modify human beings, recognition of the compounding importance of the humanities and ethics, and the potential use of high technology for avoiding rather than prosecuting war.

At the same time, many expect these technological shifts to occur amidst a century of social collapse or chaos; that there will differential impacts with clear winners and losers, especially with respect to climate change and the ability of societies to absorb massive shocks as vast areas become uninhabitable dead zones and there are large-scale population movements and giga-famines alongside 'eco-affluence'. This pattern is already emerging. This new reality of a threat to the survival of the planet and our species requires us to imagine new ways of working together at scale across sectors and borders rather than being satisfied with an incremental approach confined to official processes.

In considering the potential benefits and threats of new technologies in relation to society at large and to the sustainable development goals in particular, it is right to consider the specific capabilities of the new technologies.

For example, in terms of the need for an urgent public policy response, the international prohibition of lethal autonomous weapons must be at the top of the list since they are already under development, the regulatory regime for their control is not yet in place, their production is likely to be highly profitable for major corporations and their use by both state and non-state actors will be extremely difficult to control after they are produced. (The UN Convention on Conventional Weapons (CCW) Group of Government Experts met in Geneva in April to progress discussions on regulating these weapons.)

However, a broader policy response is required beyond an assessment of each technology as it is developed.

Our objective must be to see that new technologies are used to enable citizens to live fulfilling lives, exercising their rights as free citizens and enjoying a healthy natural environment, rather than to be increasingly controlled and manipulated either by commercial or political actors.

There has to be international agreement and national regulation to ensure the following:

- that our societies are equipped educationally for changes in employment, social interaction and to advance the role of free citizens
- that the benefits of new technologies reach all those who need them not only those that can afford them
- that there is open public debate about the implications of new technologies and political accountability for their regulation
- that we pursue the application of AI and related technologies in pursuit of the UN Sustainable Development Goals especially in health, education, energy, work, innovation, industry and infrastructure, responsible consumption and production, agriculture, water and the oceans
- that the rights to personal privacy, judicial independence and academic autonomy are protected.

That is to say, it is not a matter only of regulating technology directly but also of strengthening participatory mechanisms and independent institutions nationally and internationally.

Research universities are not marginal players in this new context. As the source of many discoveries and innovations, we confront very sharply the moral responsibilities of our research in deeply unequal societies.

For this reason, we engage the social sciences and humanities in analyzing the implications of scientific discoveries and technological applications. We acknowledge the importance, as does ESCAP, of working with people on policy solutions in the diverse social contexts and economic conditions across this region.

For example, last year we published, with Elsevier, the report ‘A Global Outlook on Disaster Science’ which tracked the research and policy expertise in disaster science and mapped it against the areas where the disaster burden is greatest.

We will soon publish a report entitled ‘Amplifying Impact: Transformative Solutions to Asia-Pacific Challenges’ that uses both case studies and metrics to show how collaborations between science and technology disciplines and the social sciences and humanities are producing models for solutions in widely varying situations.

As we seek to strengthen our collaboration across the borders of nation, sector, institution and discipline in order to build trust for the challenges ahead, we welcome new partners from business, government, international organisations and communities in this endeavour.