ACKNOWLEDGEMENTS

This report greatly benefited from the help of Dr. Kieran Rankin, Research Fellow at the Ussher Library, Trinity College Dublin, who assisted in the transcriptions and editing of the SDSN Series of University Presidents’ meetings. In addition, thanks to Alyson Marks, Head of Communications, SDSN; Sonja Neve, Communications Manager, SDSN; Helen Lacey, Communications Intern, SDSN; Giovanni Bruna, Senior Manager, SDSN Networks; Gaëlle Descloitres, Program Associate, SDSN Networks; and the broader SDSN Networks Team for their contributions to the editing and design of this report.
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Universities are at the Heart of the SDG Agenda

The UN Sustainable Development Solutions Network (SDSN) is predicated on the idea that universities have a vital role to play in the Sustainable Development Goals (SDGs). The work of the SDSN during the past dozen years and the unwavering interest of university leaders in the SDGs are a testament to that special role. I am delighted and honored to contribute to the Report of the University Presidents on the SDGs. This report is based on the wise contributions of university presidents in a series of brainstorming sessions during 2022.

While the SDG Agenda is vital for the well-being of people everywhere and our planet, it is also very challenging for governments for several reasons as it doesn’t fit the usual mold of government policymaking. First, the SDG Agenda requires policy focus and consistency over the course of a whole generation or more, 20-30 years, and not simply a typical election cycle. Second, the Agenda is technically complex, as it addresses challenges that cut across economics, social justice, environmental sustainability, and geopolitics. Third, it requires deep cooperation across nations and at the global scale. Fourth, the Agenda aims to protect the global commons, such as the oceans, biodiversity, and climate, critical challenges in which normal “market forces” do not lead to the desired outcomes. And lastly, the SDG Agenda specially aims to protect the well-being of future generations.

These very conditions mandate that universities have a distinctive – indeed essential – role to play in supporting governments and society at large to achieve the SDGs. The features that make the SDGs difficult for governments also make them appropriate for universities. First, universities regularly take on long-term research agendas that last for a generation or more. Second, universities bring together expertise across the physical sciences, engineering, social sciences (economics, politics, sociology), and behavioral sciences. Third, universities operate within global networks of knowledge, so that international cooperation comes naturally. Fourth, by their very nature, universities are mandated to pursue the common good, rather than financial gain or power. Fifth, universities work across generations and train today’s youth for future leadership. The well-being of future generations is therefore core to universities’ mission.

The SDSN has the gratifying responsibility to support the world’s universities to fulfill their great potential in support of the SDGs. Over the past 12 years, we have had universities around the world rise to the occasion, introducing new teaching and research programs; instituting new university-wide SDG initiatives; re-engineering their campuses to eliminate greenhouse gas emissions; and convening governments, business, and civil society to find solutions to the most pressing SDG challenges of their communities and nations. The SDSN has been proud to be part of this worldwide scale-up of SDG activities in the world’s universities.
The intense interest of the universities in these initiatives has been demonstrated by the active leadership of University Presidents, Chancellors and Vice-Chancellors, Provosts, Deans, faculty, and student groups, in these remarkable efforts. In 2022, SDSN hosted a series of online meetings of university leaders from all regions of the world to brainstorm, compare notes, and present their SDG-related accomplishments to their peer institutions. The turnout was astounding, with hundreds of university presidents participating from Asia, Africa, Europe, North America, and South America.

This volume collects and summarizes the impressive presentations made during those online gatherings. Readers will note the extraordinary commitment of the university leaders to the SDGs and the boldness of university SDG initiatives around the world. Even in the short time since these online gatherings, the pace of the global university commitment continues to grow, so this volume will no doubt provide powerful inspiration and guidance for even bigger and bolder initiatives yet to come. It remains, therefore, only to express my deep appreciation and admiration for the many university leaders featured in these pages, and the extraordinary contributions they and their institutions are making towards the fulfillment of the sustainable development needs of our time.
The COVID-19 pandemic radically disrupted nearly all sectors, with significant impacts across the higher education sector. Schools around the world were forced to rapidly adapt to distance learning, establish health protocols, and manage their operations from afar. While the pandemic helped to catalyze significant transformations across the educational landscape, it also highlighted a number of underlying challenges, including the stark digital divide and the urgent need to incorporate sustainable development into educational curricula.

Most Global North-based universities with sufficient means and technology access were able to conduct a swift and comprehensive shift to online learning platforms, while many Global South-based schools lagged far behind. This shift underscored the essential need for accessible and equitable digital infrastructure to ensure continued learning. Moreover, the situation spawned a number of pedagogical innovations, requiring educators to adapt their teaching methodologies to effectively engage students in a virtual environment.

Only a few months after the World Health Organization (WHO) declared COVID-19 a global pandemic, the UN Sustainable Development Solutions Network (SDSN) convened the first University Presidents Meeting with the UN Secretary-General during the July 2020 High-Level Political Forum (HLPF). More than 200 presidents representing all continents participated and shared their experiences on how universities had responded to the pandemic and planned to ensure that their pandemic recovery would be aligned with the Sustainable Development Goals (SDGs).

At the time, two critical areas of discussion among educators included: (1) the need to incorporate sustainable development and global citizenship into educational curricula; and (2) universities’ role in ensuring that government recovery strategies would set the foundations for a different, more sustainable future.

Two years later, in 2022, SDSN built on these discussions through a series of convenings amongst university presidents across various regions - Africa, Asia Pacific, the Americas, Europe, and the Middle East. These meetings focused on the role of universities in advancing the SDGs and strategies for achieving these goals through education, research, and institutional commitments. There was a unanimous recognition of the critical role that universities play in promoting sustainable development. However, it was noted that the scale and urgency of the challenge require universities to undergo a transformation in itself. This includes fully integrating and embedding sustainable development into their educational, research, and operational activities, embracing the shift to online education, and adopting more integrated, interdisciplinary, and collaborative research models. Key takeaways from the meetings included the following:

**Interdisciplinary and Cross-border Cooperation**

As institutions at the forefront of knowledge creation and dissemination, universities are uniquely positioned to catalyze change by embedding sustainable practices and principles across their functions. This involves not only the incorporation of sustainable development
themes into university curricula, but also the adoption of sustainable practices in campus operations and institutional governance. In order to effectively achieve this, universities can pursue interdisciplinary approaches in research and education that acknowledge the multifaceted nature of sustainable development and its intersection with various academic disciplines. Interdisciplinary research recognizes the interconnectedness of global challenges such as climate change, social inequality, and economic development, and can address the need for sophisticated solutions that are informed by multiple sectoral perspectives and areas of expertise.

Universities will need to foster collaborative research efforts that transcend traditional disciplinary boundaries, facilitating a more holistic understanding and innovative solutions to these pressing issues. This will require collaboration between different academic departments and between institutions, creating more dynamic and comprehensive learning and research environments. Collaborative international research efforts are vital in addressing global challenges that transcend national boundaries, as they can enhance the quality and impact of research by bringing together diverse perspectives and expertise. Pursuing interdisciplinary and cross-border approaches also helps develop graduates who will be not only knowledgeable in their respective fields, but are also equipped with the skills and understanding necessary to contribute to sustainable development in a meaningful way. These approaches also contribute significantly to the democratization of knowledge production, making research findings more accessible and inclusive, and engaging a broader spectrum of society in the creation and application of knowledge. This not only enriches the research process but also ensures that the outcomes are more relevant and beneficial to diverse communities.

Leveraging the Shift Online
The transition towards interdisciplinary approaches in universities seamlessly intersects with the transformative shifts in education prompted by the COVID-19 pandemic. As universities continue to navigate the evolving educational landscape, they find themselves at a crossroads where the integration of sustainable development into curricula becomes more pertinent than ever. This intersection presents a unique opportunity: leveraging the move towards digital platforms to further enrich and diversify the educational experience. In doing so, universities can harness the potential of online learning environments to facilitate interdisciplinary collaboration and knowledge exchange, and expand digital inclusion, thereby aligning the urgent adaptations prompted by the pandemic with the broader goal of fostering a more integrated, inclusive, and sustainable-focused educational framework.

Universities Evolving to Meet the Challenge
The emphasis on mission-oriented research approaches and the integration of various disciplines to formulate holistic responses to global challenges is paramount. This approach requires a shift from traditional, siloed research practices to more integrated and collaborative research models that focus on addressing key challenges.

This call for mission-oriented research approaches and interdisciplinary collaboration serves, in turn, as a critical link to the broader theme of the necessary institutional transformation of universities. As we explored in the SDSN publication, *Accelerating Education for the SDGs in Universities*, this shift can act as a catalyst for the deeper, systemic changes that universities are encouraged to undertake. As universities adopt research and education practices that transcend traditional boundaries, they simultaneously pave the way for a reimagining of their overall structure and ethos.
This reimagining, focusing on sustainable development and the grand challenges outlined in the 2030 Agenda, is not limited to research alone, but extends to all aspects of university operations.

Institutional Leadership on the SDGs
University presidents worldwide play an instrumental role in steering this transformative journey, recognizing that the integration of sustainable and interdisciplinary values into every facet of university life, from curricula to community engagement, is essential in actualizing their commitment to the SDGs.

The responsibility of universities to interact with and impact their local and global communities is at the center of their transformation. Universities have the unique opportunity to serve as bridges between academic knowledge and real-world applications, playing an active role in addressing societal challenges and contributing to sustainable community development.

I am encouraged to see how much universities have leveraged these transformations since the onset of the pandemic. I invite you to read on to learn more insights from the 2022 SDSN University Presidents Meetings about how universities from around the world have used the COVID-19 pandemic as a catalyst for revolutionizing their institutions to contribute to global sustainable development.
Without a doubt, the world today requires strong and urgent action toward the implementation of Sustainable Development Goals (SDGs). For universities, the pursuit of quality education as envisioned in the fourth SDG is critical as we seek to get solutions to global developmental problems. Universities are well-placed to contribute to teaching, research, and knowledge creation. Through institutions of higher learning, new and innovative ideas and techniques can be developed to facilitate the awareness and adoption of sustainable development goals.

Universities can greatly contribute to the achievement of SDGs. These institutions of higher learning have many young people pursuing different programs in agriculture, engineering, architecture, and arts, among other programs. These academic programs are at the center of the 17 Sustainable Development Goals. The cross-cutting nature of academic programs concerning SDGs puts students and staff in universities in a good position to lead in the implementation of the SDG goals. Universities thus have a great capacity to convene the various actors involved in addressing issues related to SDGs.

The center of excellence launched to facilitate SDG awareness and implementation will assist to catalyze necessary action needed in universities. At the University of Nairobi, we have a large number of students enrolling in our programs which go for around two (2) to five (5) years. Through the center of excellence, the University of Nairobi plans to target these students to ensure that by the time they graduate, they can implement different ideas in the workplace. It is our hope these students will be able to drive policy change that assists in facilitating the implementation of the SDGs. They can be the greatest educators of the link between these goals and sustainable development.

We have seven to eight years remaining to achieve the SDGs. The COVID pandemic has taught us several lessons. Universities transitioned towards online and digital learning and we immediately discovered the challenges involved in attaining digital inclusion in learning. Universities need to address the challenge of providing data to students so that they can attend the necessary tutorials needed to complete their academic programs. After navigating these challenges, we have realized, digital solutions have enabled students to learn from wherever they are located thus leading to greater access to knowledge and skills. I believe the center of excellence can benefit from this new shift into digital learning. Reaching students has never been easier and the center of excellence can communicate the principles of SDGs through these digital platforms. The University of Nairobi looks forward to a stronger collaboration with the center to achieve the objectives of attaining sustainable development in the world.
Regarding what universities can do in promoting sustainable development and achieving SDGs, from experience at the University of Casablanca (which is one of the biggest universities in Morocco with around 130,000 students in all scientific fields), I proposed the project pillars of digitalization and digital transformation. We recognized that to solve some key problems, especially around large lecture class sizes, introducing online, hybrid, or distance learning would help.

During the COVID-19 pandemic, the world had to stop and switch from in-person to distance learning. We had pre-existing projects based on digital transformation and succeeded in developing our own platform and offering online courses to all our students in less than one month. The social conditions of students were also an issue because not all the students could access distance learning due to the cost of an internet connection. The Ministry provided free access to university platforms during the lockdown. Since then, we have developed students’ e-learning centers so that we have open spaces with laptops and connections where students can come and connect to the lectures. We have also capitalized on this massive digital transformation by providing open access for students and staff to language learning and soft skills online. Free for older students, such soft skills and languages are key issues in employability.

We have also worked towards a green, smart, inclusive campus. In addition to our digital transformation and a focus on inclusion (both social and digital), we also wanted to be eco-friendly and a green University. Our project deployed massive solar panels, producing around one megawatt of green energy. We also launched an initiative for research and development to engage students, labs and researchers in the implementation of this solar installation. We asked our research labs to work on algorithms for energy and load balancing so that they can use this platform for R&D, pedagogy, etc.

As Minister of Solidarity, Social Inclusion and the Family, I would like to share with you the ‘Frugal Social Smart City’, where I proposed a project for the development of a social poll. Although the university has seen 130,000 students, at the social poll, it’s millions of people that are suffering poverty and difficult conditions. I believe that digital and social sustainable development are still relevant pillars, which is why the new government of Morocco is working over 2021-2026 to reinforce the pillars of the social state. This ambitious project of His Majesty King Mohammed VI of Morocco and the government aims to deploy platforms for people in hard social conditions to access lectures as well as professional and technical training, especially women suffering violence. In celebrating International Women’s Day, we marked the Marrakesh Declaration addressing violence against women, under the presidency of Princess Lalla Meryem. We also established the Academy of Empowerment, which capitalizes on digital platforms to aid women suffering violence, accompanied by coaches and given social assistance, through a program of social insertion.

We have also adopted a green approach and a sustainable development approach. I believe if we succeed in engaging large numbers of people, especially people suffering hard social conditions, we will engage citizens in the promotion of the Sustainable Development Goals at a large scale.
The University of Pretoria (UP) is South Africa’s largest University, and as such we take our leadership role with regards to sustainable development seriously. This is seen through our philosophy of a sustained and substantive strategic intent to achieve societal impact through high-quality education and co-creation of knowledge. We have embedded the SDGs in our strategic plan, so that sustainable impact in society is the intellectual posture and framing of the university. This means that UP does not have a standalone sustainable development or SDG-strategy, but that both of these have been hard-wired into our institutional strategy itself. Given the broad scope and aspirational nature of the SDGs, they can be organized in many different ways. We have chosen to make them meaningful to ourselves and our core business — or I should say passion — by arranging them to tell a story that is relevant to our particular context. This has meant modeling the SDGs around five interrelated blocks that are all anchored by Partnerships for the Goals (SDG 17).

The result is an architecture and a way of narrating the SDGs that clarifies what the SDGs mean to us. It emphasizes our human existence in relation to one another as well as to our planetary ecosystems, focusing on being human, on our human potential, our human existence; our planetary boundaries; and, coexistence with all forms of life. SDG 17 really anchors these dimensions, with Partnerships for the Goals as the means of implementation that turns the key to enable acceleration in each of the other 16 Goals. In a university as large and as diverse as ours, this structure allows us to position everything we do somewhere in this narrative of meaning. Whether it is the research we are doing in any of these areas, or our teaching programs, strategizing about the resources we need, or engaging with our many partners on the continent and globally, everyone in the UP family can locate what they do in this institutional sustainability story. This is what we have done to integrate the SDGs into the very fiber of who we are and how we understand what we do, because we believe that this kind of posture is more likely to achieve a transformative impact.

Up to 33,000 students are involved in curricular community engagement and voluntary projects, as we continue to integrate these in our teaching and learning, as well as our research. Through their education, our students therefore themselves become SDG champions. In addition, we support inter- and transdisciplinary research through the creation of specific institutions and platforms such as Future Africa, which is a whole campus dedicated to achieving the SDGs in South Africa and the continent. Further examples include the South African SDG Hub that aggregates research for the SDGs across South Africa, an SDG Policy Support Initiative, and of course SDSN South Africa. All of these initiatives are in turn connected through our digital transformation strategy, which we also see as a key enabler for achieving the SDGs.

These are just a few of our diverse initiatives, but the main point is that it all finds a home in our integrated institutional narrative, which has the SDGs as its backbone. If you would like to learn more about this, please consult our Integrated Sustainable Development Report (2019) and our SDG Progress Report (2020).
Speaking generally on the roles of African universities in achieving the SDGs and the Paris Climate Agreement, what universities in Africa need to do is to review their curricula. At this particular moment, there is a great need to ensure that the curricula of various programs reflect the necessary skills and competencies required for driving the SDGs and responses to climate change. Most universities in Africa are still using the very old curricula inherited from colonial masters. We cannot continue this way.

Another thing that universities in Africa can do is to ensure that we promote the SDGs and help our communities meet the challenges of climate change by conducting research that is targeted, connecting to the SDGs and climate challenges. We need to empower our institutions for this. Doing this is more important now than ever before. Furthermore, I believe that universities in Africa need to ensure that their work is connected to their political leadership. Without political support, it will be difficult for many universities to be able to help their communities to connect to the SDGs.

Additionally, universities should promote Climate Ambassadors and SDGs Ambassadors. This is a deliberate policy, whereby university undergraduates are exposed to some special courses and then become ambassadors for the SDGs and climate responsibilities, not within the university, but within the community. If universities adopt these strategies, it will help our countries in Africa to meet the needs and challenges of the SDGs and climate change. It is high time that universities become smart universities in Africa and build smart systems that can employ modern technologies, like social media, to communicate and engage with young people. The youths understand the language of social media, and the university system should apply this strategy to communicate the needs of this time through these media, for them to be engaged with the SDGs and climate change issues.

Policy development is very important. It is necessary that each university should develop institutional policies for the SDGs and climate change. When we develop these social policies, as done in the University of Pretoria, we can categorize the SDGs issues and then recognize departments, programs or units within universities that can focus on promoting each of the identified categories.

In conclusion, I believe that universities in Africa need to strive to become engaged universities. Engaged universities are not just working for and within the university alone, but are connected to their environment and society. We must seek opportunities to use innovative techniques to communicate the SDGs and climate change issues to our communities, perhaps even using the arts like music or dance as tools to better communicate with and engage our communities.
This conversation comes at a critical juncture when African countries, with lessons from COVID-19 pandemic and climate change related disasters, are positioning to build back better, while strengthening efforts to accelerate progress towards the Sustainable Development Goals and the Paris Climate Agreement. This conversation on the SDGs, the Paris Climate Agreement, and the role of universities could not have come at a more opportune time.

The ongoing COVID-19 pandemic has been a huge wake up call for Africa. One of the biggest lessons we have learned and as espoused in the OECD’s Building back better: A sustainable, resilient recovery after COVID-19 report (OECD 2020) is that investing in scientific research and technological capabilities is not just helping achieve economic prosperity but, in times of crisis like the one we are living in today, it is also helping save lives and livelihoods. It plays a key role in advancing the SDGs and the Paris Climate commitments. During strict COVID-19 lockdowns, most schoolchildren and young people accessed lessons online in most of the developed countries, and some parents went virtual too. However, for most children and young people in Africa, learning from their home was not possible during lockdowns due to lack of digital skills and the state of e-learning infrastructures. Of course, we do acknowledge the innovations that investors and schools came up with during this time.

On the health front, while developed countries received booster vaccine shots, African countries are still struggling to have basic shots. Today, less than 15 percent of our population is vaccinated — a long way from the target of 60 percent (Chen, Kaplow, Onabanjo & Sun, 2022). Only 1 percent of vaccines are manufactured on the continent (Nweneka & Disu 2022). There are various reasons for this but what is clear is the need to ramp up research and technological capabilities so that we can manufacture vaccines here on the continent as well as other goods so that we can create quality jobs. Unfortunately, we see that most African countries continue to underinvest in science, technology, engineering and mathematics (STEM), as well as research and development. Despite the African Union’s target of 1 percent of GDP for research expenditure, only 0.4 percent of GDP is invested in research in Africa compared to 1.7 percent globally (World Bank, 2017). Africa accounts for less than 1 percent of global research output. The average enrollment in STEM fields stands at only 29 percent. Student graduates in STEM-related fields range between 4 and 12 percent in Africa compared to 67 percent in some developing countries such as Malaysia and Vietnam (World Bank, 2014a). We need to change course. I do recognize that these are just averages but they broadly reflect that most countries on the continent are not investing nearly enough in the critical areas of science, technology and innovation.

Regarding climate change, Africa faces more acute impacts of climate change than any other region in the world — 70 percent of the top 10 most climate vulnerable countries in the world are here in Africa (AfDB, 2019). Yet Africa accounts for only 2-3 percent of the world’s greenhouse gas emissions (UNFCCC, 2006). What we have seen is that extreme weather events such as floods and droughts have become more frequent and intense.
It is estimated that in the poorest countries climate change will increase the cost of development by 25 to 30 percent (World Bank, 2014b) and constitutes a significant threat to achieving the SDGs more especially SDG 2 by 2030. Water scarce regions like the Sahel as well as North and Central Africa are expected to experience an average 6 percent of GDP decline by 2050 as a result of climate change (World Bank, 2016).

At the African Development Bank, we see Universities playing a critical role in advancing Africa’s progress towards the achievement of the SDGs and the Paris Climate Agreement agenda by addressing the issues just outlined. We know that all subjects that universities offer are important, but we believe expanding the pool of experts qualified in STEM courses will be crucial in moving the needle and taking Africa to the next level of social-economic transformation and the achievement of SDGs and climate change. In advancing the science, technology, and innovation agenda, the Bank has invested close to US$1 billion dollars in financing regional member countries to develop infrastructure for higher education, STEM courses, research, and TVET (Technical and Vocational Education and Training), via technical assistance, grants and concessional loans. In the next four years, under the Bank’s Skills for Employability and Productivity in Africa Action Plan, we will build on this by investing $700 million dollars in building infrastructure for STEM education, research and innovation. Learning from COVID-19, the action plan for skills development also focuses on strengthening digital skills and online learning infrastructure. We are very proud to have supported different centers of excellence and universities such as the University of Nairobi in Kenya, the Carnegie Mellon University Africa in Kigali, Rwanda and several universities across the continent. On the health side, the Bank, via the Strategy for Quality Health Infrastructure in Africa (the first of its kind), plans to invest US$3 billion dollars by 2030 in healthcare infrastructure (AfDB, 2022) and we will be looking at universities to provide training to doctors and health personnel. Firstly, we believe there is a need for evidence-based policy reform so that we can demonstrate what works and what does not. As knowledge centers, universities play a key role in conducting relevant, home-grown research that informs decisions by policymakers to advance the sustainable development agenda. All Bank financed programs are accompanied by knowledge work, technical assistance, and policy reform. We see universities as instrumental and key partners in this regard.

Next, we believe universities have a key role in addressing Africa’s time bomb - the high youth unemployment problem. Through new curriculum approaches, universities must not just teach students to go and look for jobs, they must create opportunities for harnessing entrepreneurial skills and providing spaces for incubating and proving concepts for business ideas so that students enter the labor market not just as job seekers but as job creators for themselves and others. I recognize that a lot is already being done in this space, but the Bank and other partners can do much more together. The Bank’s Youth Entrepreneurship Investment Banks Initiative is taking an ecosystem approach that leverages the public private partnership delivery model to de-risk and scale up investments in youth owned enterprises by addressing bottlenecks in regulatory policy environments, building the capacity of entrepreneurs and enterprise support organizations, and mobilizing investment capital at scale. Universities will play a key role as centers of excellence in this initiative for building entrepreneurial skills, including in the area of STEM as well as TVET. We believe this approach offers a more structured, systemic, and sustainable financing mechanism for investing in our young people so they can start, grow, and scale their businesses to employ themselves and others. On the green transition, the Bank’s share of re-
newable energy investment in total power generation has increased from just 9 percent to over 80 percent since 2001 (AfDB, 2017). We have adopted innovative financing mechanisms to finance climate resilience in Africa, including through the Africa Adaptation Acceleration Program in partnership with the Global Centre on Adaptation. We are mobilizing US$25 billion dollars to scale up and accelerate adaptation actions across Africa. The challenges and financing gaps in these areas are enormous. This calls for strengthening partnerships to leverage each other’s strengths. We all must come together and join hands to make progress - universities, the public sector, the private sector, civil society and everyone. The private sector will be particularly key, including academia, as governments struggle with fiscal challenges during this time when public debt is rising. Knowledge based policy reforms will be crucial.

I would like to recognize how Africa, through the African Union, the Economic Commission for Africa, and through state governments, stepped up and rose to the challenge during the COVID-19 pandemic, by mobilizing resources to make sure that we are able to mitigate the health crisis, but also by leveraging partnerships to mobilize financing for vaccines. We are seeing tremendous progress in making sure that vaccines are manufactured on the continent and the Bank is playing a key role in that respect.

As regards amplifying the role of women - the more women scientists and technology experts we train, the more women-friendly development solutions will be invented, facilitating faster adoption and diffusion of development technologies. To build economies that are inclusive, green, and climate resilient, Africa will need to continue focusing on the promotion of gender equality, where women are not just viewed as passive beneficiaries of development programs but as active development practitioners and innovators in all spheres of life, including in university spaces. In the words of the Bank’s President, Dr Akinwumi Adesina: ‘No bird flies with one wing, we must support women everywhere to thrive. As they do, societies will thrive and prosper.’
AFRICAN REGION

VERA SONGWE

Former United Nations Economic Commission for Africa

Education is an equalizer. It closes wealth, access and prosperity gaps from India to Ireland to the United States. It is fair to say that for many, education was a stepping stone and pathway out of poverty. This is certainly true for many on the continent.

Education in Africa, especially after the COVID-19 crisis, is not just an equalizer, but can be attributed to the leveling of information and knowledge about the continent. The narrative about the continent has been enriched by continental scholars hence bringing understanding about the continent.

Analysis of the realizations and potential of the continent is crucially important, especially for the youth as we educate them and try to bring them into the system.

In Africa, over a 20-year period, the number of private universities in the region increased at a much faster pace, from 30 to 1000, compared to public universities which only increased from 100 to 500. The cost of higher education is also higher in the public sector.

There is an increasing demand for more practical and job creating employment. The levels of unemployment remain stubbornly high however. Businesses on the other hand in surveys say they lack the skills they need. The mis-match gap must be closed for society to see a dent in the under employment issue facing the government.

After a quick glance at the list of the universities here, I was thinking what a powerful army we could generate if we were able to bring together all the brilliant minds that are in our universities – Kenya was talking about 10,000 or 50,000, in South Africa. Just imagine the army that could represent the continent sent out there to change the narrative, to rediscover and tell others what the continent is about, and then gather information from others and actually implement and use it for our continent.

We have the instruments to change our continent to respond to the SDGs. We can actually meet the SDGs if we were able to bring this army into one place and do something with it in a more constructive way – that is how the UN can help. One of our strongest tools is convening, bringing people together, and sharing experiences.

People have spoken about energy – a big conversation that we have had for the last two years and it will be good to get universities involved in it, working with the likes of the LSE, an African university, and the Africa hub in Kenya. Regarding the energy transition, our thoughts go to Russia and Ukraine, as well as those in harm’s way in those two countries. One of the things that this war has brought to the fore is whether gas should be phased out in our continent, even if we need it or not. People say to us, ‘No you can’t do it because it’s going to pollute more.’ The energy hub in Kenya working with the LSE, the Economic Commission for Africa, and the African Union, are trying to do studies that will demonstrate to the world that Africa needs gas as a baseload to ensure that we could even begin to think about the SDGs. Every SDG requires clean energy. These are the kinds of areas where we need universities to bring together the mathematicians, the physicists and the environmentalists because development today is really a partnership – it is cross-sectoral and multidisciplinary. The place where we find this kind of multidisciplinary activity, after governments, is in universities, and sometimes in development institutions.
Universities hold the power to some of those conversations and hopefully we can facilitate more.

When COVID-19 began, we did not have genome sequencing initiatives across the continent, apart from South Africa, Nigeria, and Cameroon. However, we have now put together a scientific committee led by the University of Pretoria. We are witnessing the power of science. People are sometimes not used to seeing science come from our continent, unlike when we discover a virus, we get penalized for it. But now, we can claim that we had the science and technology to say Omicron was a new variant and that we are actively working on it and identifying its characteristics. We should take pride in that and the more we do, the less negative reactions we will get, plus we essentially begin to tell the African story.

In the last year and a half, we have seen the power of education and what our universities can do. Concerning the numbers on research and development regarding what we are and not doing as a continent, those numbers could be much higher and transformational. We need to be able to foster more collaboration across universities, as has been done with Africa CDC and John Nkengasong bringing together all the health scientists around genome sequencing and putting a team together that works for the continent as opposed to one for each country.

This leads on to the conversation around intellectual property rights and protections. We see the importance of IP and acknowledge that if you have IP, you can use it for good – it is a strong weapon. Africa can eventually get access to vaccines, if it can produce them and get the patents. However, African patents are being taken out of the continent, particularly in the digital space. Every day, we see someone buying off an idea from an African student for essentially less than market price because we are not protecting our innovation. If our innovation continues to filter out of the continent, we will never be able to create the jobs that are needed or give a sense to other young students that there is a path both for them and for their own country. So we need to work together again as a collective partnership to protect intellectual property rights, like how the European Union has done in neutralizing intellectual property. For young people who have new and innovative ideas, there is an EU directory where you can go if you do not have the resources. The directory allows you to register your idea so that it can be protected by the EU – thus, EU property does not leave the continent. Much of our youth in Nigeria, Cameroon, and Cote d’Ivoire are going to France and Canada – we are losing our youth from our continent, and our universities are losing partnership opportunities.

The ECA, together with UN Women, the ITU and many others, is trying to see how we can contribute. Exploring how we can do more, we have launched boot camps, essentially for STEM – science, technology, engineering, and math camps in every country, once a year. Recently, there was a huge STEM camp in Rwanda exhibiting amazing innovation that was focused on robotics and how we can train young university students. When you see some of the innovations that these universities are producing in STEM, you realize that Africa can do a lot more than is attributed to us today, if only students just had a minimum amount of exposure. The Economic Commission for Africa has also just launched the Young Economist Network comprising 70 universities in the network with over 700 young PhD economists. The essential question is how can we make these economists become drivers of change within the SDGs? How can they understand their own economies, so they can talk about it with societies and government? Frequently, we wait for external parties to analyze our economies, whereas we have millions of students across different universities that could do this work in collaboration with us.
The team of the Young Economists Network in Kigali are an amazing group of young kids that want to do more and are very excited. We are looking for Masters and PhD students or recent graduates to join us and see how together we can talk about Africa’s growth and prosperity, with models coming from our universities and students that can be shared collectively so we can learn from one another. With the 17 SDG goals, each one needs somebody in our universities that can tell us how to do better, how to improve. We need partnerships and to explore how we can collaborate more effectively – for example, the African Development Bank has enormous resources and the African Union can standardize our policies.

With many more private universities, are they doing the right thing? Or are they part of a regressive process on our continent where there is a lack of accountability? We need to address some governance issues around our higher education system so that when a poor mother pays for her daughter to go to university, she is actually getting the education expected. Such a voice can ensure that our universities are actually generating students that are going to be productive members of our society. With the UN, we continue to work and create partnerships with some technical support and look forward to continuing to do so. We are also doing climate modeling. If there are students in our universities that are interested in straight modeling, climate modeling, and economic modeling, please send them our way because the more people that understand these methodologies, the better.

One final matter concerns the recent launch of an artificial intelligence research center in Congo Brazzaville. It is a center that can take 10,000 kids online at the same time with the fastest machines on the continent. It is an amazing piece of work where we are already seeing the private sector investigating if they can use the center to establish their headquarters and analyze things like road traffic and supply chain distributions. The more we can do such things on the continent, the better. So, if there are any students or universities that are interested, such a partnership can be developed even further.
The specific goal for education is encapsulated in SDG 4, ‘ensuring inclusive and equitable quality education and promote lifelong learning opportunities for all.’ However, progress in achieving goal number four has a far-reaching impact on all other Sustainable Development Goals (SDGs) as education is a core building block for human capital development. These include goal three on good health and wellbeing; goal five on gender equality; goal eight on decent jobs and economic growth; goal ten on reduced inequalities; goal 11 on sustainable cities and communities; and goal 16 on peace, justice and strong institutions.

In Rwanda, we recognize the significant importance of universities in achieving the SDGs and the Paris Climate Agreement. Universities have been increasingly expected to transcend conventional teaching and research missions. Our universities are home to thousands of the best minds, talent, and experience which, if mobilized and supported, could find solutions to some of Africa’s most complex and intricate challenges. It is this support system and environment that government and university leaders need to foster to encourage researchers, students and technicians to bring new knowledge and innovative solutions to achieve the SDGs. This will promote the development of knowledge, skills, understanding, values and actions required to create a sustainable world which ensures environmental protection and conservation, promotes social equity and encourages economic sustainability.

One area of focus is the need to ensure strong leadership and governance systems for universities in Africa. I recognize that this will need to be underpinned by developing efficient and innovative education and training funding mechanisms, investing in developing more resilient education systems, and strengthening the production and synergies between academic institutions and the labor market. In the case of Rwanda, one of the strategies to meet the challenge of ensuring the highest possible quality of education has been to coalesce all public universities into one University of Rwanda, with six subsidiary colleges. This addresses issues of duplication, sharing of resources, and most importantly of quality. One of the objectives of the University of Rwanda is to engage students in research to ensure they are taught by people who themselves are actively involved in research. There are initiatives such as a staff PhD training program, ensuring a research-based performance management system and assorted schemes to reward and encourage research related performance, and to integrate entrepreneurship and innovation into the country.

The Government of Rwanda is engaged in several national and regional initiatives to help build the research and teaching capacity in our tertiary education system. These include centers of excellence with specialized and complementary mandates, focusing on developing research capacity to address critical challenges facing Rwanda and the region as well as developing research strength and capability within higher learning institutions in Rwanda. The Government of Rwanda shepherds the centers of excellence program, along with initiatives such as the Partnership for Skills in Applied Sciences, Engineering and Technology (PASET).
This is a Pan-African initiative of great importance to help achieve the ambitions of the University of Rwanda to become a research-based institution and support the many private higher learning institutions in increasing their teaching and research capability.

Through these and many other initiatives, Rwanda has made a significant improvement in R&D in the past few years. Rwanda’s growth in R&D expenditure as a percentage of GDP has increased from 0.2 in 2014, to 0.69 in 2018/2019. This is high compared to other countries in the East African region and is above the Sub-Saharan Africa average. Rwanda is committed to achieving the African Union target of 1 percent of gross domestic product to be invested in R&D by 2024, as stated in the national Science, Technology, and Innovation policy. I look forward to the positive outcomes that will come from strengthening the significant role that universities have to play in achieving the SDGs and the Paris Climate Agreement.
I am very happy that one of the objectives of the Association of African Universities within the SDSN context is to strengthen its contribution to Africa’s development. When I look at the objectives of the general university population, I do not see many references to development, and Africa needs its universities to actually state this. Strengthening the contribution of universities to Africa’s development is a very key issue. I have been part of the university community for a long time as a student and professor in Kenya, Uganda, Ethiopia, and Canada, and believe that we need to change our mentality from the joy of what we know in our heads to the joy of using it to positively affect somebody out there in the village. I get the feeling that we are so happy about what we know that often we forget when that knowledge is making no contribution. We should feel a responsibility to use what we know to benefit others and bring about development.

I am involved in a lot of committees, and I am sometimes amazed by how much Africans know, yet we keep being last in regional developmental assessments. In ten years, we can change this, and I want to suggest an approach. The first part is reorienting universities to take pride not only in the knowledge they create, but in how they use it to the benefit of communities. One way to do this could be to organize a competition or award for people who have used knowledge to transform a community or a district. So that rather than competing about what we know, we compete about how we are contributing to development by what we know.

A second idea is that every university should have a ‘catchment area’ or geographic constituency, within which they model the 17 SDGs (or as many of them as they can). The SDGs are synergistic - if you’re doing one, it will help another. One problem is that many practitioners take an isolated approach to the SDGs. Imagine what would happen if a university can apply and deliver as many of the 17 goals as possible to their surrounding communities?

The question then becomes, having delivered the SDGs at this level, how do we scale up to the national level? Doing so will raise the visibility of the contribution of universities to development. Knowledge is very important, but can we make it much more visible in terms of how it is transforming Africa? Maybe the UN Economic Commission for Africa can help us move forward in this area, so that when a university adopts a community and applies the SDGs in a synergistic way, they can lean on each other like a house, setting the foundation for all the other SDGs. If you are not healthy, you cannot prepare for the road. If you’re not healthy, you cannot go to the office. If you don’t have a peaceful environment, you may not do anything else!

Can we challenge ourselves to leverage knowledge to the direct benefit of others? Can we make that to be competitive in Africa? Can this be upscaled to the national level? Africa needs this and I believe that, with some concerted effort, in the next 30 years we can make a real big difference.


AMERICAS REGION
When I was asked to participate today, the first question I asked was ‘What is the university for?’ I was reminded of something I read many years ago based on an address by Manuel Castells at the University of Western Cape, South Africa. He considered the question of the role of universities in development, economy, and society (Muller, Cloete and van Schalkwyk, 2017). Today, I will discuss his six characterizations of university, what he considers stages, though the universities of today often fall under multiple characterizations.

First, he characterizes universities as primarily ideological and transmitting values that helped legitimate the social order. While some universities emerged spontaneously, in many cases teachers’ wages were paid by the state or church, so Western theological teachings or imperial values were front and center. Today, we must reflect on how our post-secondary institutions play the role of value transmission. How are the 17 SDGs aligned with and challenging the social order rather than reinforcing it? In Canada, as income disparities grow and where efforts to decolonize institutions intensify, we need to ask how our universities are entrenching or disrupting the value systems through teaching and research.

The second role of universities described by Castells was establishing a social stratification in society, making sure elites go through a selection process. Even today, with 25,000 universities globally, 90 percent of business and political leaders of countries are educated by a handful of institutions. No matter where you look — the US, China, or other countries — how does this align with SDG4: quality education to enable upward socioeconomic mobility? Can intentional stratification of society and the resulting power differential be consistent with the SDGs?

A third characterization or phase was training of the labor force through professionalization of degrees. We all have them in our universities — medicine, law, engineering, and others. Even for programs that are not professional in their designation, there is a large focus on skill development so graduates are ‘career ready.’ But how many professionally oriented programs are designed or flexible enough to allow students to have depth in their major, but also a good understanding of fragility of environmental systems or even the liberal world order? Can we sufficiently integrate sustainability into existing curricula? Can we convince professional accreditation boards to consider sustainability as key? We are making progress: there are lots of bright spots and some will be featured in a forthcoming book that I previewed called ‘The Future of Sustainability Education in North American Universities’. Even at my own university, there is good progress: we are developing collaborative graduate programs that look at things like water, climate change, aeronautics, or artificial intelligence from an interdisciplinary perspective. We are also innovating the undergraduate program, developing a program that combines accounting and environment schools. But we are not innovating fast enough and not doing enough of it.

The fourth role is the research university, something that emerged in the 1800s. All of us could look at our regions or countries and identify the top 10 or 20 research-intensive universities, and many of these we will think of as the best. These are the universities that make ground-breaking discoveries in science and technology.
These same universities have disproportionately often taken on the role of knowledge transfer and mobilization, especially around commercialization. But are they mapping on to the SDGs? Are they working towards sustainability transitions, using their capabilities to unpack how technical, legal, and societal initiatives can bring about the necessary change? We map onto things such as the Times Higher Education impact ranking that looks at how we connect with the SDGs, but even this is mainly about how we are creating knowledge rather than how effective we are at catalyzing change.

Of the last two categories, one of them is the generalist university. Universities that elevate the level of education for the population at large. Is it more egalitarian? Yes. Is it designed to maximize achievement of one or many of the SDGs? Maybe only tangentially. The other category is what Castells called the entrepreneurial university — focusing on connections between the world of science and technology with the business world. Medical breakthroughs and health care depend on it as does the competitiveness of our economies. But there are contradictions, or misalignments, between what we are building and what the nations of the world need to achieve the Paris Climate Accord and Agenda 2030.

Universities are doing quite admirable work at achieving some of these six rules outlined by Castells, but I am not sure that is what our goal should be today. Universities need to be much more strategic at aligning competencies, activities, and budgets, to achieve the SDGs and the Paris Accord on campus, in their communities, in their country, and for the world. Lastly, what about SDGs 16 and 17 — Peace, Justice, and Strong institutions as well as Partnerships for the Goals? Do we teach these? Do we mentor and model these in our educational programs? Achieving the SDGs and the Paris Accord are about a shared vision, about negotiation, and about peace.
In future accounts of how the world found itself facing a temperature increase of at least two degrees Celsius, a complete disruption of what I call the “family farm” (Earth being the farm and humans being the family), high on the list of responsible parties will be universities. I say this because of the list of things we (higher education) failed to do. We knew better, but could not figure out how to proceed, going to the root issue of university design itself. We failed to understand systems. We focused on subsystems, small things, and eliminated the broader connection between intellectual development and how the Earth works. We separated a deep understanding of the Earth and its beauty from our definition of a modern, educated person. We overemphasized reductionism. And while it is fantastic and important that imminent threats to our species have led to a deeper understanding of the fundamental principle of physics, it created deficits elsewhere. We needed to advance knowledge equally in both disciplines, not one over the other.

High on my list when considering the historical context, is that we (universities) failed to take responsibility for our actions. We designed the technologies that led to the carbon concentrations in the atmosphere; we built the systems and scientific understanding that led to the changes in the way that the oceans work; we altered the systems dramatically and sometimes irrevocably. We knew better and did not hold ourselves accountable for our decisions, saying instead that it was someone else’s responsibility. We were wrong. We abandoned indigenous knowledge. We disparaged it and created barriers to it. We irresponsibly ignored centuries of wise, indigenous knowledge and failed to embrace the philosophy that the people and the planet are one. Then we decided to create silos between disciplines that prevented cooperation and communication. The economists, the biologists, the chemists, the engineers, and others have no common language. They have no shared way of addressing issues that will affect us all. Good translators are not a substitute for common language.

First, moving forward, university design must allow us to accept our failings, to face them and to fix them. Second, we need new designs for new kinds of universities. New structures that are not limited to incremental change over decades, but that are nimble. The world is changing more rapidly than ever and universities need to adapt. I used to joke that the Ross Ice Shelf will crack off of Antarctica before we can get a single new academic unit organized because traditional higher education is accustomed to moving slowly. We need to assume responsibility and design the universities we need. We need to create a new, unified knowledge creation trajectory. What are we attempting to know? Why are we attempting to know it and what is the outcome we want? And lastly, we need to learn how to communicate to society. Among the best criticisms in the movie ‘Don’t Look Up’ was not only its critique of politics and news media, but also of universities. Academics yelling ‘It’s about the data!’ to a public that couldn’t understand what that meant. We have to become better communicators and we have to help the public understand what the knowledge we create means.

I have been deeply involved in intellectual reform efforts for decades and while these endeavors are hard, they are doable. This work is worthy and we have to do it. It is time for universities to remove themselves from the list of the responsible parties that helped destroy our family farm.

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Inequality characterizes Latin America and affects some groups — indigenous peoples, gender, territories, migrations. This inequality led Chile to experience a social explosion — estallido social — in 2018. Thousands of people took to the streets, protesting something we already knew — the gaps between rich and poor people, that women were still out of political spaces, and that indigenous peoples were discriminated against. In this context, universities cannot be secondary actors. They must play a key role in promoting change for greater social justice. They have fundamental questions to solve - are their academic projects in line with the challenges of current and future society? Are they agents of change in their territories? Do they have training projects that do not exclude but include? Is diversity expressed in their educational communities, especially in decision making? Are they contributing to democratization and participation?

In the last two years, because of the pandemic, universities faced a disruptive innovation process that forced them to radically transform the training processes, leaving their educational communities into unknown terrain. They were forced to move to online training, remote research, and new forms of coexistence without physical contact in record time. However, not all universities had the opportunity to face this pandemic on equal terms, opening new inequity gaps in their academic offerings. The response of the universities can not only be to increase enrollment, but instead they must reconfigure their training spaces (García-Morales et al, 2021).

A second challenge is inequality in access to universities because although access has become widespread, it is still out of reach for the poorest people. In Latin America, between 2000 and 2018, access to university for the poorest people increased by only 10 percent compared to 77 percent for the richest. A third challenge is the very diversity of society, where there are groups that still cannot access university education under equitable conditions. There are significant gaps between the indigenous and non-indigenous populations. Women have increased their income but sexist patterns remain, with concentrated enrollment in areas related to care. The regular migrant population cannot obtain scholarships or benefits to access university (CEPAL, 2019).

In this context, the Sustainable Development Goals become essential incentives for the articulation of universities around these challenges. Current problems require that our universities be oriented toward human development, sustainable development, and human rights — recognizing and playing a key role in overcoming inequalities. They must be agents of social transformation, contributing to the construction of non-sexist educational communities and more egalitarian, non-discriminatory societies. Social justice with a feminist territorial and pluri-national perspective. Therefore, it is not enough for universities to incorporate their commitment to creating democratic, plural, equitable and egalitarian spaces into their mission. They must promote deliberate actions of transformation projected from the educational communities to the whole of society, thus transcending the classroom and promoting the democratization of knowledge. They can no longer follow the path of closed knowledge expressed only in lectures, articles, or patents that can be easily stored, copied and transmitted.
They must commit to sharing knowledge with society, with the community and giving meaning to the experiences of people in their educational trajectories. They must promote social relations and their connections with the community as well as validate other knowledge that is outside the university. Knowledge for knowledge’s sake cannot continue to be the dominant logic.

As an indigenous woman, I have experienced the impact of restricted approaches to knowledge, but I have also seen university’s efforts that recognize the transformative potential from critical thinking and collaboration. We must be concerned about the impact of knowledge and the use of its results in the construction of our favored society. This implies that the universities are open spaces that interact with other areas that create knowledge too. They must incorporate intersectionality as a referential framework that makes it possible to highlight the multiple discriminations that people face depending on their gender, race, educational level, or age. The university must generate actions for non-sexist education, since it contributes to democracy and sustainable development, advancing non-discriminatory societies for genders.

This is an opportunity to rethink the university and their contribution towards the Sustainable Development Goals and become agents of social change. It is a chance to change their institutional management practices, update their principles, and incorporate diverse people in decision making as well as in their research teams and classrooms. It is an opportunity to put the knowledge at the service of society, sustainable development and human rights. It is an opportunity to think about the educational experience as a citizenship trainer. University must be the eyes and ears of society, they must be the voice that links with other voices and be the space to understand the present and deliberate on the future. Universities must be transformation spaces. Let us take advantage of our meeting so that this commitment becomes a reality. We owe it to young people who yearn to live on a better planet.
I am convinced that advancing and finding solutions and alternatives to implement the 2030 Agenda strongly depends on the university’s capabilities in terms of knowledge generation, education, and providing solutions. The current challenge for universities is to develop competencies and skills to address an ever-changing reality as knowledge becomes a source of solutions to complex challenges. We are in a different reality — much more globalized, more impassioned and demanding - with new trends, such as the democratization of information and content, the emergence of new actors, the globalization of audiences, advances in neuroscience, and new learning theories. Therefore, universities must not only respond to the labor markets’ new reality, but also to cultural, institutional, and political changes. They must combine training for employment with critical thinking.

Universities, in addition, must lead the conversation about the normative foundation of social change, the climate crisis, the rise of inequality, the discussion on equity, and the applications of artificial intelligence. These are all ethical conversations which are imperative. They can also provide the 2030 Agenda with alternatives to achieve its goals based on knowledge and innovative ideas that support its implementation, train current and future implementers and decision makers, develop cross-sectoral leadership to facilitate dialogue and action at different territorial scales, as well as play a leading role in policy development and advocacy. Universities can contribute through their core institutional functions — learning and teaching, research, governance, and institutional, cultural, and social leadership. In this process, it is essential that they recognize and identify what is already being done. In doing so, they can develop the internal capacity and leadership potential, identify priorities, opportunities and weaknesses, as well as integrate, implement and mainstream the SDGs into institutional strategies, policies and plans, plus monitor, evaluate, and communicate actions regarding the goals. This means that universities must be the drivers of this change, going beyond traditional ways of shared knowledge, and trying to be part of the transformation through action and generating impact. Universities have a strong responsibility to foster and accelerate this implementation. We must have an active role in this process. However, a significant and pending question is: ‘Do we need more programs or do we change the existing ones?’

I would say that university programs from now onwards to 2025 establish the 2030 Agenda as a starting point to respond to the challenges that dominate global contexts. We need relevant knowledge to face the problems arising from a planet that needs to move towards a future that does not exceed planetary boundaries, with more equitable societies and solid institutions to ensure no one is left behind.
To close the gap and deliver the SDGs in the last decade of action (which only has eight years left!), we need to take a picture of where we are and recognize that the COVID-19 pandemic has pushed back so many of these goals and targets. On life expectancy, we lost years. On School attendance, we lost years, and we also reversed gains in poverty reduction. Inequality grew exponentially. While big corporations earned an additional $3.5 trillion in capitalization, jobs lost around the world were of equal size, according to the ILO. This has really widened the inequality gap.

The impact of the pandemic was also unequally distributed. It exacted a higher toll on women, given their initial conditions, and the fact that they are over-represented in the sectors that were highly affected, particularly the care economy. In education, 11 million girls are at risk of not going back to school, according to UNESCO’s Keeping Girls in the Picture campaign. On the question of climate, the increasing lack of trust in institutions and rejection of science is very worrisome. There is a very important role for universities, not only to invest in science, but to make sure that research informs policies. More and more we are seeing governments reject science whenever they feel it does not support the decisions they want to take. Many researchers and people in the scientific community have been prosecuted and their research banned in many countries in the world. We must support an enabling science ecosystem, and the freedom of science. Addressing attacks on science and on scientists should be a priority, particularly to support those scientists that are risking their lives. We know, for example, that many academics are migrating as refugees — as we can see today in Ukraine. This is a critical issue.

But just producing science is not enough. We should ensure relying on the most innovative frameworks, and to think out of the box. We need to be innovative in every single discipline that we teach. For example, I would like to call on all of you who teach economics at your universities: if we continue teaching general equilibrium models, if we continue being attached to representative agents and rational behavior assumptions, we will get it wrong. We need to get rid of old models that do not work. Certainly, it is more difficult to try to understand the world through complex systems thinking, but it is the only way. All the systems are interconnected, and influence each other in different ways. For example, we cannot address inequalities if we do not think about the climate crisis and its impact on our societies. The impact of gender equality and inequality is felt in every field. There are many compounding effects from all these issues, and therefore an intersectional approach is needed. We need greater knowledge about the tipping points and the feedback loops, so we can understand the complexity of these systems. No doubt, it is more difficult to get to policymakers and come up with very complex solutions, but the reality is that it is up to us to try to explain it better. We also need to change the way we measure success, something that I have been working on for many years – the question of moving beyond GDP, moving beyond simplistic measurements that prevent us from assessing the broader impact on our economies and societies. Thus, we need universities to deliver actionable solutions and bring multidisciplinarity. UNESCO’s Social and Human Sciences Sector hosted a conference as part of its Management of Social Transformations (MOST) program last year,
where social scientists found that if governments had involved more psychologists, sociologists, and anthropologists in their COVID-19 response committees, we could have been more sensitive to the relational aspects of our world, better recognizing that communities need solidarity and support each other. Recognizing societal needs, emotions, and aspirations would have helped us to manage the crisis better, and mitigate the mental health crisis that we are experiencing today as a result of indiscriminate confinements. We may not have all the answers, but the more we listen to different perspectives from different disciplines, the better prepared we will be.

Finally, no professional curricula should lack ethics. Ethics is an essential area and part of UNESCO’s unique mandate for social and human sciences. My question is, how do we go back to teaching ethics? How do we put ethics before technology, before mathematics? Ethics is going to bring inclusion, diversity, and probably more sustainable solutions; it will also help tackle the inequalities that manifest in so many ways. It will bring the right reflections to get the right solutions. I want to invite you to join us, for example, in implementing UNESCO’s Recommendation on the Ethics of Artificial Intelligence — the first global standard of its kind on AI technology. On multidisciplinarity, I also invite you to join the BRIDGES Coalition for Sustainability Science hosted by the University of Arizona.

So getting rid of old models and assumptions; relying on multidisciplinarity and understanding better human needs, and getting back the teaching and learning of ethics, may help us to be better prepared for the complex world in which we live.


ASIA PACIFIC REGION
I was in a dilemma because I wore two hats, first as a Professor who has taught for 25 years at one of the leading business schools in India, and now as a representative of UNESCAP. So let me just focus a little bit on what my experience at the Indian Institute of Management Bangalore (IIMB) has really shown about the role that management education, in particular business schools, can play. Typically, in the West, you have business schools located within universities, but in the Indian context, these management schools are actually stand-alone schools. What I have seen is that they can play a tremendous role, because when you look at businesses they play a very positive and transformational role in a world that is so resource-constrained and confronted by such a variety of sustainable development challenges. These challenges actually influence decision-making at the firm level and at the same time can also be addressed and mitigated to a large extent by businesses in the way the latter carry out their practices, their processes, and through their choice of strategic focus areas. Management education plays a very important role by creating future business leaders and managers who are sensitized to the SDGs, who understand the implications of what they are doing for the realization of the SDGs, and who are willing to mainstream sustainability concepts into their business models. Also, given the growing pressure from civil society and regulatory requirements for sustainability reporting, such sensitization is becoming increasingly important for future managers and business leaders and that is where business education in management schools can play a very important role.

In IIM Bangalore’s case, over the past decade or so I have seen growing interest in the subject of sustainability and an attempt to first bring it into the core curriculum or to introduce elective courses. This relates to the program content and offerings that students get. For instance, you have courses on environmental natural resource management, global public goods, social enterprises, inclusive business models, corporate governance and ethics, health equity, women in business, and a variety of cognate subjects. Also, you find more coverage within existing courses, or through modules, on themes like inclusive growth, social accounting, gender empowerment, social marketing, and so on. And increasingly, concepts, especially in India, such as bottom of the pyramid and frugal innovation, have become very popular in courses in mainstream management disciplines such as corporate strategy and marketing.

We also have customized programs. IIM Bangalore, for instance, has a two-year blended program with the Government of India to train postgraduate students to work with district-level Skill Committees to enhance skill development and employment creation in the country by identifying value chain and market integration opportunities. It is an innovative program. While these interns are sponsored by the government, the training is provided by the management school. They are taught some modules within the institution and then go into the field where they are required to do district skills mapping. They try to understand the demands that are there, the opportunities for creating new products, new value chains, and then they try to integrate this learning by providing people in districts with the required skills to create products and services, to take these to the market, and to connect them to businesses, NGOs, etc.
Another thing that has become very popular in management education is Massive Open Online Courses (MOOCs). These provide a tremendous opportunity to reach a broad audience. So increasingly, for instance, IIM Bangalore and many other schools in India are using MOOCs to provide affordable quality education to remote parts of the country. They are reaching target audiences such as MSMEs, entrepreneurs, and youth through customized certificate courses on topics like social marketing, business and product development, retailing, and financial literacy. We have a course titled ‘Do your Venture’, a collaboration with Goldman Sachs and a think tank of the Government of India, that has helped early stage, women-led ventures from around India by offering them free training to convert their business ideas into working businesses, followed by incubation support. Such courses really have far-reaching implications because they can empower and equip a large number of people, including marginalized groups in society. We are now thinking of reaching out to entrepreneurs in remote areas and providing them the necessary skill sets and mentorship to ensure better livelihoods. In addition, many schools around the country encourage students to engage in social impact or rural immersion projects and internships where they engage in community outreach activities – working on live projects through partnerships with NGOs and social foundations. Some of the common focus areas are health, education, agricultural marketing, upskilling and women’s empowerment, sanitation, and so on. These kinds of opportunities really give students first-hand exposure to sustainable development and related challenges and encourage them to devise practical solutions and work with relevant stakeholders in the community.

Educational institutions provide spaces and opportunities for the kind of impact one can make through research and consultancy work. There are multi-country collaborative projects, research grants as well as applied projects, for instance, with state governments or urban local bodies on issues like community health, circular economy, digital inclusion, and waste management. IIM Bangalore has been working with city and state governments on program evaluation, impact assessment, and the design of development projects in areas like urban development, transport, water supply, solid waste management, sewage, and education. For example, the award-winning Tele-Education project has helped improve the quality of education in rural areas and government schools through multi-way interactive education and multimedia content delivered in real time by subject matter experts. Then there are many individual research and consultancy projects, often through dedicated centers which involve research and social impact projects, as well as networking and dissemination activities on issues like digital inclusion and entrepreneurship. In fact, the Institute has an entrepreneurship hub encouraging students to convert their ideas into actual businesses. This is a way to encourage students to become entrepreneurs. These students get a waiver from tuition if they decide to incubate their ideas. For two years they are actually supported by the Institute. In fact, several health technology startups have been created through this incubator hub.

In sum, the potential contributions are many. However, I would also like to highlight a few challenges which I have seen. While there is a growing focus on sustainability, I still feel it is not mainstreamed enough into management education at this time. The treatment of sustainability is still largely driven by individual faculty interest. There are a lot of capacity constraints in terms of human and financial resources. We are already short on faculty, often in traditional disciplines, so assigning faculty to teach courses on sustainability or environmental management may not always be a high priority. Also, the kind of interdisciplinary research work or mindset and expertise that’s needed is often absent. Affordable and good teaching material is an additional constraint, so there needs to be a lot more focus on developing case materials for classroom de-
livery. There are also issues with incentivization of faculty, as given the focus universities or institutions have on publications related evaluation criteria, focusing on such emerging topics may result in a lack of due recognition, especially at the initial stages of a faculty career. Due recognition to multidisciplinary work on sustainability or social impact projects that might not qualify for publication in top reputable journals may not get the recognition for tenure, so faculty may opt to stay on the traditional path rather than venture into these new areas. Hence, incentives need to be built into the ecosystems of universities and management schools to reward and recognize such efforts, to encourage such focus through evaluation and promotion norms. The other matter that I have seen in business schools in particular is the lack of recruiter interest and lack of industry support for students specialized in sustainability courses. That is an impediment again to devoting more resources and curriculum content to the subject.

There has been a lot of progress over the last decade but still many challenges remain. Universities, and other educational institutions at large, are the front-line in creating the next generation of leaders for businesses and for society. Unless we mainstream sustainability into the course content and curricula of management schools, it will be difficult to make progress. So, we really have a very important role to play. This requires creating the right ecosystem and embedding it into governing and operating processes as well. The approach cannot be incremental. It has to be an integrated approach.
Let me begin by acknowledging that I am speaking to all of you from the unceded lands of the people of the Kulin nations, and pay my respects to their Elders, past and present, and acknowledge any other Indigenous peoples who might be joining us today.

The role of academia in achieving the SDGs and the Paris Agreement is critical. I want to say a little bit about two contributions that have become increasingly critical.

One of these contributions is the ability of the academe, through universities and other research institutes, to provide evidence wrapped in advocacy to demonstrate what action is needed, and the sense of urgency for which this action is needed, for us to meet the Paris Agreement and the SDGs. This communication is critical. We can always be better at it, but the key message is that academe needs to communicate evidence, potential action and urgency in an understandable, methodical and rigorous way. In fact, for the global group of scientists, such as the IPCC (Intergovernmental Panel on Climate Change), this is a very critical aspect of their work.

The second critical contribution the academia can make at present is to assume the responsibility of thinking through and devising key solutions, whether technological, environmental, behavioral or societal, that advance the achievement of the SDGs.

We need a group of people who are spending their time worrying about the most complex challenges we face and how to address them. There are some solutions to these problems out there, but they do not come in neat disciplinary bundles. Therefore, we will need to work across disciplines.

The traditional roles that academia plays in helping advance the SDGs are four-fold. These four roles need to be communicated and directed at finding solutions to our present challenges.

Firstly, education and learning is critical. So it is essential that we share our resources so we are building the understanding and the capability to take effective action across large and significant parts of the citizenry, because that is who we educate — in the professions, in the organizations, and in their civic life.

I have mentioned before, the importance of research, knowledge generation, provision of evidence and development of solutions. Not all solutions will be cross or multidisciplinary. But, typically, we will need cross or multidisciplinary knowledge and evidence-based solutions that drive to the targets and actions that need to be taken.

Thirdly, we should not underestimate the role of the organizations in which academic clusters — typically universities and research institutes — as institutions. The operations, culture and governance of those institutions is a place where we can model and trial all solutions. In that sense, we should be able to actually demonstrate, through working with others, what can be done in an organization operating in society.

Going back to communications, we cannot underestimate the university’s role as an institution to support informed citizenry that wishes to take action. As trusted sources of evidence, as fora for open public discussion, universities can promote action.
Academia operates in these roles successfully — whether they’re local, national or global. However, due to the circumstances we are in at present and the urgency to act, the premium role for academia is to increase and leverage its levels of global action. It needs stronger and better mechanisms for global collaboration. We must seek to collaborate more effectively because we get the benefit of the license that our communities have given to us, the trusted positions we’re in, in pressing forward on SDG implementation.

We have the evidence of what can work, we have the evidence of what needs to be done, and we have to build more targeted and stronger global networks in order to implement these actions. The needed networks can be loose or tight. There are two types of networks; I will use three examples, from the Monash perspective.

First, Monash has hosted the Sustainable Development Solutions Network Australia, New Zealand and the Pacific. As such, we have been engaged in working with others on how universities can deepen their contributions to the Sustainable Development Goals. A brilliant young Monash student, Sam Loni, who came to Australia as a refugee, established the Sustainable Development Solutions Network Youth program in 2015. It now covers 127 countries. This youth network is empowering young people — they are the future and they understand the urgency. This is what we could refer to as a ‘large loose network’ that works with schools, supports young innovators, brings young people together and organizes hackathon summits. All of this is very important to communicating about SDGs.

Second, I will give an example of how we can model the solutions. In an earlier time when I was Chair of Universities Australia, which is the peak body for our universities, we launched another SDSN initiative, which was called ‘Getting Started with the SDGs in Universities’. This is a guide for universities that has now been translated into six languages and used by hundreds of universities across the world. It was done in collaboration with Australian campuses towards sustainability, with contributions from across Australia and New Zealand. It has been used so extensively that a follow-up publication called Accelerating Education for the SDGs in Universities was produced in 2020, when the whole idea of how we work globally had changed.

These are interesting examples of how we can share resources and examples. However, it is my observation that when we work most successfully it is in big programs in multistakeholder partnerships. We have a couple of large programs across a number of countries, including one eliminating dengue and another working with informal settlements in Indonesia and Fiji. In these programs, researchers from a number of universities work with particular communities, with industry, NGOs and government partners. We have to start looking at what particular things we need to focus on, and building those networks, those deeper collaborations, because from them we have learned from and with others and we are more effective at communication. We put our research into action with others, and we put our education into action with others, and I believe that is the next stage in global collaboration. Not just what we could all do — each of us to advance the goals, which is important — but what particular things we might do in smaller and more targeted collaborations which take time to put together, but where I think the impact will be greater.

The concluding matter I wanted to mention is connected to dissemination. We have a new initiative from Monash called ‘360info’, which is using research to provide expert content to global media. It is a model that goes directly to 750 media outlets, just launched this month and will go public next year. We have to find new ways to get our trusted evidence out.

We can all do more, but it is how we work together that will make the real difference to the speed with which we attain a more sustainable future.
My key message is that the best way universities can promote the implementation of SDGs is to leverage the role of knowledge through partnerships. Of course, universities are the main institutions for knowledge generation, dissemination, and application. However, forming knowledge partnerships for the SDGs is not automatic. Special efforts are needed in order to guide knowledge activities to support SDG implementation efficiently. SDSN has played a vital role in facilitating these partnerships. The United Nations has also built an online platform for these activities.

In our daily activities at universities, we can see how important knowledge partnerships have been. First of all, in terms of knowledge generation, international collaboration has been critical in understanding how to implement the SDGs. One-third of the publications on several SDGs have been authored by international partnerships.

Second, knowledge diffusion and exchange are also very important. One case in point is the China Energy Modelling Forum (CEMF), which was supported by the Environmental Defence Fund (EDF) and run by Center for Industrial Development and Environmental Governance and (CIDE) at Tsinghua University as a knowledge platform to bring many energy modeling teams together. The platform is aimed at understanding why different climate policy models have different policy projections. Through this effort, members of the forum are able to understand the reasons behind the differences in policy projections, be they differences in assumptions, in data, or in models themselves. These improved understandings can help offer better policy support for China’s climate actions. We see again that partnership is critical for knowledge generation, diffusion and exchange, and policy impact.

Third, universities can also play an important role in training people for the implementation of SDGs. Several years ago, Tsinghua University developed a partnership with the University of Geneva to offer a Master’s Degree in Public Policy for SDGs. It is important to note that the degree program is not just classroom-based learning, but also experiential with students working in real projects to address real problems. Here are some quotes from our students:

‘My name is Victoria Ach. This programme has greatly benefitted me in enhancing my knowledge of governance processes to solve sustainable development challenges in our globalized world.’

‘My name is Alexandre Gosselin. [I have learned] notably through hands-on, team-based, and project-driven activities, in collaboration with courses on the fundamentals of sustainable development.’

[Unidentified] ‘I’m currently doing an internship in ITU. Through this internship my understanding of international organizations’ structure and institutions have been deepened.’

Finally, institutional building for SDGs is needed in order to sustain efforts in SDG implementation. In order to coordinate SDG related knowledge activities better, Tsinghua University established The Institute for SDGs at Tsinghua University (TUSDG) several years ago. The institute has been engaging in education, academic research, policy impact, and international networking activities. It also serves as the SDSN China Hub.
With the coordination of TUSDG, we recently released Tsinghua’s SDG report from which one can see what Tsinghua has been doing with regards to SDG action.

In addition, TUSDG has been working on critical issues highlighted in Tsinghua’s SDG action report, particularly working with a lot of firms and stakeholders in China and internationally. We are trying to use the knowledge generated by university research to address real problems in implementing the SDGs.
Please allow me to start by sending greetings from Malaysia and the Sunway Education Group, and allow me to tell you a little more about our unique institutions and ecosystem. Our main campus is in Sunway City, Kuala Lumpur, in the state of Selangor, Malaysia’s biggest economic driver. Sunway City was once a desolate mining land. Tan Sri Dr. Jeffrey Cheah, Founder and Chancellor of Sunway University and Chair of UN SDSN Malaysia, transformed this land into the city that it is today. Now, it is a thriving 800-acre township with flora and fauna, the first sustainable township certified by the Malaysian Green Building Index. Our founder’s vision not only laid the foundation for what Sunway University is today, but also instilled in us a passion for doing right by the environment and our habitat.

I would like to share a few examples of our university’s progress. First, we set up the Jeffrey Sachs Center on Sustainable Development in 2016, the first institution of its kind in Asia, with the aim to mobilize comprehensive collaboration towards achieving the United Nations’ 17 Sustainable Development Goals (SDGs), particularly amongst Southeast Asian nations. Named after and chaired by the President of the UN SDSN, it is the Southeast Asian regional hub for deepening and systematically integrating knowledge to create world-class programs that train students, practitioners, and policy leaders in the area of sustainable development.

Second, our researchers are working together with researchers from Lancaster University on sustainable cities via the Future Cities Research Institute (FCRI), complementing the work of the Center, particularly around SDG 11 on Sustainable Cities and Communities.

Third, we are collaborating with MIT on a three-year project to develop carbon capture technologies which will turn captured carbon dioxide into raw materials such as for energy storage devices. Additionally, the UN SDSN Asia office at Sunway University will serve as the hub for UN SDSN’s work in Asia on education initiatives such as Mission 4.7, in which the Secretariat hopes to bring together leaders from across the world to develop and lead the implementation of Education for Sustainable Development (ESD).

Realizing the need to focus on health, especially with the pandemic still ongoing, we just launched the Sunway Centre for Planetary Health under the leadership of Tan Sri Dr. Jemilah Mahmood. We also have the Sunway Smart Sustainability Campus Committee which looks at campus-level awareness, empowerment, and SDG-related best practices. Beginning 2022, we aim to make SDG education compulsory among staff and students through the SDG Academy’s extensive library of online courses.

At Sunway, we are constantly striving to create an environment which not only encourages learning, but also sparks new ideas and promotes innovation together with sustainable solutions for the future. In this regard, through the Center and under the leadership of Professor Woo Wing Thye as well as our programmes such as the Master in Sustainable Development Management (MSDM), we hope to empower policy makers, private sector players, members of the public, and NGOs to develop innovative solutions to achieve the SDGs in concrete ways.
In fact, our Pro Vice-Chancellor, Professor Mahendhiran Nair, is looking at science, technology, and innovation while guiding the Malaysian government towards achieving the Twelfth Malaysia Plan’s goals of advancing sustainability and strengthening security, wellbeing, and inclusivity.

More and more institutions are implementing environmentally sustainable practices, and I am glad that Sunway has kept up. We have been recognized in the Times Higher Education Sustainability Rankings and we are credited as a Top 200 institution for SDG 11 on Sustainable Cities and Communities – making us one of the world’s leading institutions dedicated to creating career and business opportunities, safe and affordable housing, and building resilient societies and economies. Sunway University has a state-of-the-art modern campus that is connected to a wide range of social and community amenities by safe walkways at treetop level — we call it the ‘canopy walk’ — giving a sustainable study, work, and social environment for our students and staff within and around the campus. Meanwhile, we are also making small efforts to contribute to the Paris Climate Agreement, such as harvesting rainwater for non-potable use in landscape maintenance and cleaning outdoor areas or implementing a long-term initiative to reduce energy consumption from fossil fuels by using renewable solar energy, installing solar panels on the roofs of all our buildings and even our covered walkways.

As SDSN Malaysia Leadership Council Chair, Tan Sri Dr. Jeffrey Cheah has said repeatedly that, “Our efforts at Sunway are driven by our recognition and realization that the SDGs are not the sole responsibility of governments. It requires the commitment of all sectors of society - the private sector, academia, civil society, and, of course, every single individual. We are all in this together”. I believe we can all wholeheartedly agree that we are all, indeed, in this together.
Nadiem Makarim: Thank you so much, Professor Sachs, what an honor to be invited to an event such as this.

Jeffrey Sachs: Mr. Makarim, you have done this amazing entrepreneurship, you see the power of the tech sector. You are an innovator. Now, with President Jokowi’s backing, you are empowered to help shape education, research and technology in Indonesia. I would love for you to give us your thoughts about what you want to do, and also how a network like ours can help.

Nadiem Makarim: It is a big task. There have been two big changes since I started. One is that higher education became merged with lower education, and the other is that research and technology got added to my portfolio. It is mission-critical to have a unified strategy for education. There are too many interdependencies between each of those sectors.

Jeffrey Sachs: I agree with you. It’s the whole pipeline, from the intake of young children all the way through the innovation system of the country. So that’s a phenomenal thing to try to put together the piping on that, and very rare.

Nadiem Makarim: It is also exceedingly difficult. Education is one of the few portfolios whereby everybody who has gone to school or has a child believes that they’re an expert, and there is no consensus. Sometimes I envy the portfolio of other ministers that are in deep technical areas or fields where not everyone can have an opinion. In education, everyone is a stakeholder. It is a challenging time but there is also a huge amount of opportunity coming out of the pandemic. It has pushed the urgency for change in the education sector to a degree that we have never seen before. Issues such as inequity and inability to access good education are all coming to the fore. And because of that, we are having very transparent discussions about inequality in education and the role, strengths, and weaknesses of technology.

We are also having a global discussion about what our role is in the global sphere. COVID is not just a global pandemic, it is also the first real global problem whereby even kids understand that something happening across the world is affecting them. That never came into the consciousness of the younger generation before this. I think academics have always kind of realized this and have been big proponents of globalized efforts in tackling world problems, but the pandemic made it tangible. This is a huge and very painful training ground for what is to come next, which I think is going to be a bigger problem than the pandemic - climate change.

Jeffrey Sachs: What actually happened in Indonesian schools during the pandemic? Were the schools closed down? Did you go online? How did things operate?

Nadiem Makarim: Indonesian schools intermittently did online learning for about a year and a half. There were some schools that simply did not have access to the internet. There were some schools that had internet but it was very slow. There were some schools that had good internet but some students could not afford internet, especially with regard to video conferencing.

In the developed world access is more freely available. It was extremely challenging to do this in the largest archipelago in the world, Indonesia.
We are now undergoing a learning loss recovery process, which is a real shame. Getting schools back to face-to-face learning is a massive challenge too, because a lot of local governments are reluctant. It has been a very tumultuous process, to shift to online education and now to get back to face-to-face education.

A few things that we have learned from this is that number one, online education is not optimal for students. Though the extent of learning loss varies, they all suffer, regardless of economic status or geography. We also learned to allow schools to innovate at their own optimal pace. One of the most exciting things we did is to release a new curriculum, which is also related to our theme today. This ‘emergency curriculum’ is a very simplified version of the curriculum that is focused on literacy, numeracy and character development. Statistical research showed that learning loss at the schools that adopted the emergency curriculum was far less than those that did not. The institutions that decided to redefine what education was are the ones that succeeded. The schools that stayed at the same pace that tried to do everything but do it online, they are who really fell behind.

Jeffrey Sachs: Were you able to get most of the schools and kids online? Because that’s a huge challenge. And it would be a great accomplishment with a long benefit for the future, if part of the result of the pandemic is more digital connectivity on a long-term basis.

Nadiem Makarim: I think we were one of the few countries that ran a large, free data distribution program to equip all our students and teachers with data. We provided free data, but sadly not everyone had a phone. Some families got creative and would hold one phone for multiple children. All over Indonesia, a trade off had to be made over which child would attend school on a given day. But the amount of kids, parents, and teachers online, actually learning how to use Google Classroom and a variety of different technology platforms is huge. We provided free data, and accelerated the internet connectivity project to connect all our villages and we are compressing that to the next two to three instead of five to eight years. The shock effect of the pandemic woke everybody up to realize this is a massive problem and that we need to connect the rest of our society to the internet.

It’s not all positive though. The connectivity also leads to a huge amount of gadget addiction, a massive new social issue that different people believe to be good or bad for our next generation. I’m coming to schools and visiting different areas, and the kids that are coming back to school in person are struggling a little bit in face-to-face dynamics and interactions. I don’t think this is only in Indonesia, I’ve heard this from many educators around the world. Moving out of the virtual space takes time and adaptation. I find that really interesting.

Jeffrey Sachs: I think we’re going to absolutely have to have another session just on this. I have about eight hours of things I’d love to ask you about. But I do want to turn to the universities and the research and the innovation agenda for Indonesia, because if it can harness the innovation potential, the sky’s the limit on everything. It is incredible what you can do.

Nadiem Makarim: I agree. Universities are extremely innovative. ‘Merdeka Belajar’ is our whole philosophy of change. What that means in English is ‘Emancipated Learning’. We are always playing catch up with the West to the developed countries. We sat down and we thought that if we are always playing catch up, we are never going to catch up. So we are determined to pivot towards what the world is headed towards, so someday, we won’t have to catch up. Someday, maybe a long time from now, hopefully in 10 or 15 years, we will get there. That pivot is about unbundling education.

Jeffrey Sachs: Mr. Minister, could you share closing reflections? What you’re doing is fascinating, fantastic, and we need to capture this learning to share approaches across countries and the network.
NADIEM MAKARIM

Nadiem Makarim: To get back to the role of higher education, one of the most important things is creating a bridge between sectors. Looking ahead, what do we need to see from universities? Definitely the dissolution of arbitrary boundaries between disciplines must come first. To solve multidisciplinary problems, you need multidisciplinary majors, you need multidisciplinary students, you need multidisciplinary professors and teachers. One of the most important steps we took was to say that for all undergraduates, three semesters out of eight can be done outside of your major — that's one and a half years out of a four-year education. Two of the three semesters can be done off campus. In this, we follow the European model as opposed to the liberal arts model in the US.

The second radical thing we did was to make every single non-profit, every single research project, or every single world-class company, into a university for a six-month increment, allowing open competition on what it means for higher education now. We turned research projects into an entrepreneurial, full-time, immersive six-month program on the Sustainable Development Goals. Fifty-thousand kids have left campus since the first time we did this. Some of them are doing poverty projects across the outer islands, others are teaching literacy and numeracy in underprivileged schools all across Indonesia. Some of them are diving deep into hydro-power or renewable energy projects across Indonesia, others are learning blockchain technology in leading companies.

Unbundling higher education, not just for the students, but for the professors and the teachers, for the faculty, and for the curricula, is mission critical. That is the first layer of university reform and innovation. We are entering a world in which everyone is going to be continuously learning and re-learning over time, so we might as well start early and make the university life of our next generation simulate the real world in the sense of starting to move towards a problems-focus instead of a discipline-focus. If I could recreate a university in an intuitive way, the majors would be the SDGs. Then we have programs in Indonesia like the Centre for Future Studies, with the ‘Tri Hata Karana’ philosophy in Bali. All of the disciplines in the community focusing on this are based on problems, not academic disciplines, and I feel like that is what is really going to create an inflection point. I am the youngest minister in the cabinet right now, and honestly there is an urgency for tackling these problems because I and my children will have to live through the worst of it, as will our students. At the end of the day, they are going to be the generation - the current kids now in school and universities - to carry us across the finish line. If you just think about that and extrapolate, they are also going to be the first generation to be impacted by the worst of our generations’ mistakes. So there is a moral imperative to not only improve the problem-solving potential of this generation but to also evangelize these problems.

As my final point, universities can do way more and be much more aggressive on the policy side. This is a massive gap right now. There is amazing research being done but there is a communication gap between academia and politicians and policy. It can be like talking two different languages - pragmatism and interaction. So if there is anything that academia could work with, outside of unbundling this education for the students, it is the bridge and connectivity — speaking the same language with policymakers and being able to lobby aggressively for the problems that they see, using their data and evidence. I think that would make a huge difference.

Jeffrey Sachs: Phenomenal. Exactly right and how inspiring that you’re doing it as well. That is a very exciting agenda and obviously very innovative. I would love to spend more hours with you, discussing some of these. My plan is to be in Indonesia several times in the coming year as part of the G20 process so I look forward to the occasion to be together with you.
In the last couple of years, we have formally lost five million people across the world to COVID-19, and the pandemic is still not over. So, what does that mean? It basically means in many parts of the world, including in parts of the world that we work in, that the SDGs will be setback by maybe, five years, maybe ten years. Climate predictions and research, including the Intergovernmental Panel on Climate Change (IPCC) report, warn that we are heading towards a 1.5°C warming overshoot in the 2030s, which means without significant action we will have to achieve the SDGs in the middle of a 1.5°C overshoot. In fact, we might be heading towards a 2.7° or 3°C future. We have a biodiversity crisis coming.

I’m starting on a somber note, but the fact is our current international system is not completely fit to solve the kind of challenges that we are up against. I would be so provocative as to say that our current knowledge systems, and in many parts of the world our university systems, are not fit to tackle the challenges we will face in the next decade or so. Why am I saying that? One of the core things revealed by the IPCC is that we need five simultaneous system transitions to happen over the next 20 years. The most obvious one that is actually working is the energy transition. Next is the industrial transition, which is having some difficulty, but is required to achieve SDG 12. The third one, which is very seriously challenged at the moment, is what we call the land and eco-

system transition - the basis on which we can avert the biodiversity crisis. The fourth element is the urban and infrastructure transition, which has varying progress across regions. But finally, COVID-19 has taught us that we need a societal transformation which enables and empowers young people to lead these efforts and change the world. This is the most difficult transformation, and solving it may be the most central challenge universities face. Now, the challenge for us is that there are no possibilities of trade-offs. We have to do all of them together in order to deliver the 2030 Agenda, Paris Agreement, and the Sendai Framework. When I look at the distribution of the universities we have convened for this meeting, I notice that most of the universities are in countries or regions with considerable risks and barriers to progress. Even with the help of the Global Goals framework, there are challenges of scale to operationalization. That’s why the SDSN is so important.

We have about 3,000 days until 2030 to operationalize these transformations in at least 10,000 places. In effect, we want to go at scale three places a day for the next 3,000 days. Who really affects these sorts of transformations? If you take 8 billion people, divided by 10,000 places, you’ve got almost a million people in each place. Having worked on this for a long time, you need at least a thousand people at each place. So, effectively, that is our challenge for education. It’s not only educating the new generation — it is really also re-educating many of us who are part of the problem. The challenge of capacity development, of transforming training, is going to be very critical. The scale is immense and that’s why we have to look at new ways of dealing with this.

In order to begin, I have several propositions. The first is that we need new integrated sciences. At my university, we are building a completely bottom up interdisciplinary university.
We’re focusing on the confluence of three new sciences — sustainability science (that supports a lot of what we do), climate science (without that, we’re lost), and new urban science, which cut across 40 odd disciplines, to try and deliver this. In order to bring these new sciences together to create a solutions base, we have to reorganize universities around solutions. For example, at IIHS, we have no departments. We have interdisciplinary schools focused on governance, economic development, human development, urban systems, and sustainability. And all faculty are clustered around them and they’re all from multiple disciplines. That’s the kind of reorganization that is needed, and it is a challenge we need to meet.

We also have to effectively look at capacity development. A course that I had developed with other colleagues in the urban space at the SDG Academy touched 40,000 people from 160 countries. I would tell you that’s a dismal failure because, if I gave you the numbers, we should have reached at least 10 times or 20 times that in the last four years or so. Because without that, things actually can’t work. It is an interdisciplinary course focusing on sustainable cities and I meet people from across the world who have taken it, but that is just not enough. We have to use new digital technologies and new ways of learning to actually make change in the urban space happen.

Additionally, there’s a lot of talk about net zero. In my understanding, universities and the cities in which they sit have a responsibility to not only promote net zero, but also to go net positive. We have to go net positive energy, we have to go net positive water, we have to go net positive waste, and we have to engage with all the critical SDGs, because if we are not able to demonstrate how this can actually happen in our own campuses, in our own cities, how do we expect not only to train and educate, but to inspire people to make the change? Part of the challenge is shifting the ways we live and work. We are building our first campus in India with very strict sustainability framing. On the climate side, we are working with 1.5°C of urban heat island plus 2°C of warming, which is now a fundamental design principle. It is extremely difficult to operationalize this, especially when you have to retrofit an existing university that’s been there for a hundred years due to the cost alone. Moving forward, we have to rethink the way that we’re doing things in dramatic ways. We have to enable the universities to do not only just what they’re good at, but to bring about transformation that can improve our universities, communities, and equip future generations to do the same. We need to work and live in completely different environments, and show what the future would look like. That is going to take investment, innovation, and a lot of hard work. And finally, we have to be able to teach with new curricula based on the new ways we are learning and working. And that is what the question of partnerships addresses. The advantage that we have as a group of universities committed to sustainable development is that we can share this knowledge, really quickly and easily, and with digital technology we can make access much easier, and much more equitable.
It is my great pleasure to outline what our university is doing or would like to do to contribute to the SDGs and the Paris Agreement. The University of Tokyo is trying to work on what we call Green Transformation (or GX) on three different levels: the global level, the national level, and the university level.

At the global level, for example, we established a Center for Global Commons (CGC) in August 2020, and we are working on the Global Commons Stewardship Index 2021, jointly with SYSTEMIQ, UN Sustainable Development Solutions Network, Potsdam Institute for Climate Impact Research and World Resources Institute. It aims to stimulate global systemic change in society and the economy, to spur behavioral changes for people.

At the national level, we launched a new platform for industry-academia collaboration called ETI (Energy Transition Initiative). The launch event was held on 5 November 2021, during COP26 in Glasgow, with 13 top industry executives. The purpose is for academia to work with Japanese industry to develop Japan’s pathways together to achieve net zero by mid-century. Some of the key issues include how to keep the global temperature rise below 1.5° C by reducing greenhouse gas emissions, but also ensuring collaboration as well as safeguarding biodiversity and other aspects of our ecosystem. We would like to make this platform a role model for successful inter-sector and interdisciplinary dialogue, and we would like to share these ideas throughout the SDSN network to solve the grave global crisis that we face today.

In addition, I would like to talk briefly about education. The SDG Academy that SDSN launched in 2014 has free and open educational resources from the world’s leading experts on sustainable development. The University of Tokyo would like to contribute to the development of the academy by offering SDG-related lectures. In fact, we have more than 200 research projects related to SDGs and can make significant contributions to these lectures. Current students have a strong awareness of social issues such as climate justice, and we hope to use the SDSN network to connect students one another throughout the world.

I also want to encourage students and young people to play an active role in fostering innovation. I agree with the idea of expanding the activities of students off campus and connecting their learning with the real world. I strongly believe that the role of the university is not simply to educate youth in classrooms, but to inspire young people to engage in ongoing efforts to achieve sustainable development and combat climate change. We need to unlock their creative potential to develop technological, social, and cultural innovations. Recently, there have been a lot of student startups focused on solving social issues, so we would like to use the SDSN network to connect those innovative activities around the world and make them happen on a global scale. Universities can make great contributions by leveraging their expertise and cross-border networks to spur systemic change in society and the economy. Global partnerships are essential in tackling climate issues, and academia should work as a hub to accelerate interdisciplinary and cross-border cooperation.
Let me please start by sharing some ideas, starting from the history of Greece inventing academia — at least in the Western side of the world. We know that across the ages, universities and higher education institutions played a key societal role as prominent spaces for knowledge production, research, critical thinking, and problem solving. The university’s historical mission in three words is: international, innovative, and interdisciplinary. Fulfilling the Paris Agreement and 2030 Agenda requires all these dimensions, but each one has to be recast around a new ethos of cooperation, collaboration and openness, thinking across disciplines, institutions and continents. This is imperative in a world facing shared and connected crises from the COVID-19 pandemic to climate change.

In the lead-up to the Third World Higher Education Conference, which will be held in May 2022 in Barcelona, the UNESCO Global Independent Expert Group on the University and the 2030 Agenda was tasked to reflect and make recommendations on transforming higher education for global sustainability. This report was presented on February 9th (officially launched at the World Conference), and summarizes that many higher education institutions are moving in the right direction in support of the SDGs and the Paris Agreement. However, there is a clear need for deeper, dramatic transformations. A report by UNESCO’s International Commission on the Futures of Education states that we face a paramount choice now: either we continue on an unsustainable path, one with devastating consequences for people and the planet, or we radically change course. And, if we are to take radical strides to save people and the planet, it is absolutely essential to think critically about renewal and transformation.

Let me elaborate about these two dimensions across three levels of transformation - interdisciplinarity, openness, and policy linkages. Achieving the SDGs requires new knowledge, research and data to design sustainable and long-term solutions. We are focusing on achievements and processes across SDG 4 which has 10 targets. All of them are cross-cutting and interconnected, reflecting complex global issues. We cannot look at climate change without addressing inequalities, nor solve issues of ocean health or food security alone. Working in silos will not lead us to the fulfillment of the Paris Agreement or the SDGs. This doesn’t mean doing away with specialization, which is very much within the DNA of universities and research institutions, but we cannot approach complex issues as if they’re one-dimensional.

It’s essential that we push academia’s limits to bring together the knowledge and ideas of not only one group, subject, or discipline, but many. Inter- and intra-disciplinary approaches need to be integrated into academia. As university professors, educators, and UN officials are well aware, this will not be easy, as there are practical, financial, structural, and cultural challenges. However, in this context it is crucial to think about the frameworks that can allow for collaborative practice and integration between different disciplines to generate new knowledge and craft — the holistic responses we need. This is about redesigning systems, for instance, career development. If I’m a young researcher, and I have to develop my career upon publications vertically focused on one specific subject or course, I am not supported or encouraged to
approach this research through multiple lenses across disciplines and subjects. This requires support and leadership at the highest level of institutions because it is about recruitment, performance evaluation, and university management.

Along with breaking down silos, how knowledge is produced and shared must be democratized. It is high time to embrace knowledge that has not been traditionally valued within academia. This requires an open mind as well as a supportive policy. To give two important international examples: last November the UNESCO General Conference adopted our recommendation on open science to narrow Science, Technology, and Innovation gaps. And in the same context, the UNESCO recommendation on the ethics of artificial intelligence, which is the first standard-setting instrument in the field, sought to anchor these universal framings within human rights. This is important support from international organizations, especially UNESCO, in order to provide university leadership with the framework to embed their own and new principles.

Finally, for breakthroughs to happen quickly, the nexus between research, policy, and society must be further strengthened. As a minister, I had the responsibility for science, technology, and education (including higher education), and we focused on the linkages between science and society in Europe. One pillar of Horizon 2020 was improving connections between science and scientists to society. Despite changes due to the pandemic, this was a visionary approach that we need to reinforce today. Mission-oriented approaches can help to reach this goal because they set time-bound targets and work across sectors and realize citizen engagements. That’s the spirit of what we call (with Professor Sachs and the UN SDSN) Mission 4.7, assisting education communities to concretely implement these principles of education for sustainable development and global citizenship.

To conclude, the expert group I mentioned earlier examined several case studies that show how academia is transforming to support sustainable futures. There are many good examples: UNESCO’s network of chairs that in over 100 countries encourages collective research around SDGs, and Professor Sachs’ work to boost the system, including through the SDSN network over many years. Looking at the here-and-now mission, we have the key to discussions among academic leadership and motivate critical reflection on what might work in our own institutions. When you look at your own institutions, as a leader, as a President or as a Vice-Chancellor, what do you think are some real impactful ways that universities can contribute to sustainable development, both on and off campus? There is no single path forward, in my opinion, but the common element amongst our global observations is a commitment to improving the common good. And, if you keep this principle at the core of a new agenda for and by universities, it is about developing a real, effective roadmap to achieve all the SDGs through SDG 4, and then to implement this ambitious, incredible roadmap to establish new relationships with the planet, with each other, and with technology.
I really want to highlight something that I believe has not been addressed in the conversation. And that has to do with the fact that we have basically correctly recognized that we are in a historical moment where all our challenges are global and that we need global solutions. Our speakers have highlighted the importance of trans-disciplinarity, of open science - I think that that is right. But the thing we are missing is that we’re still trying to do this through our existing institutional designs, and through a national political lens. I’m just not sure that we are capable of doing this. Why? Because in a sense, if we’re going to address our institutional global problems, we’re going to need institutional capacity around the world and we’re going to need human capabilities around the world. Our existing model of global partnerships is effectively directed at taking talented people from the developing world, bringing them to the North at a particular point of their lifecycle, and thereby accelerating the brain drain. And in the process, institutional capabilities and capacities are dramatically weakened as a consequence. Institutions in the Global South are increasingly being weakened as a result of the brain drain. Now, the answer should not be to opt for some autarkic strategy indicating we don’t need that. What it does mean is that we have to start working across institutional and national boundaries, in co-curriculum development, in co-teaching, and in co-credentials. And that’s precisely when institutions from the Global North are at their weakest. They are so focused on the institutional brand, that they forget the institutional mandate.

I’m currently in the UK. The UK is currently planning to increase its international student numbers from 480,000 to 600,000, simply because it attracts foreign currency. The consequences for institutions in the developing world include a weakening of their capacity, and thereby undermining their capabilities to address the local indicators of global challenges. And if we are interested in policy solutions, context matters — it’s important to grapple with local realities and challenges. For example, the shift from fossil fuels in Africa is different from how it would occur in Europe. We need to confront those fundamental questions. It seems that issue is missing, as is the issue of the business models that we are discussing. However, there are some solutions. For instance, the Guild of European Universities and the African Research Universities Alliance are engaging with the European Union about how to make collective resources available in order to foster teaching across institutional and national boundaries, co-teaching, co-curriculum development, and more. This is missing in the conversation and frankly, if Vice Chancellors in Global North institutions do not grapple with that - we are so focused on our short-term balance sheet problems – we are undermining the medium-term collective goals of humanity. Those are institutions in the North - we need to talk about that just as much as we need to talk about the underlying business models. In the UK, people from the developing world are charged three times what domestic students are charged in the UK. If we do not deal with that business model, we won’t resolve these challenges. So, I want to push us to think beyond simply trans-disciplinarity and open science — I think they are important - but rather we should be thinking through how we rethink teaching across institutional boundaries.
The challenge we face is that our institutions, and indeed the whole history of education, was founded in the Holocene Epoch. The Holocene Epoch lasted 11,500 years, during which humanity transitioned from being hunter gatherers, to agriculturalists, to urban dwellers. It was characterized by a relatively stable climate. But now, we are in a new geological epoch, the Anthropocene, which is characterized by the multiple impacts of human society on our environment. As we now understand, these impacts threaten to undermine the very real progress we have seen in health, education, and a whole range of metrics over the last 100 years or more. We are faced with an unprecedented challenge, one which our institutions are often not very well equipped to address.

As we have already heard, the Sustainable Development Goals are interrelated and SDGs 3 (Health for All) and 4 (Education for All) depend on the achievement of all the other SDGs. This is a key lesson for all of us. My institution focuses very much on health but, increasingly, we must broaden our perspective of what knowledge we need to promote and sustain health. Clearly, it cannot just reside in the traditional disciplines of public health, like epidemiology. These are important but they are not sufficient. What we need is trans-disciplinarity and intersectoral working. This is a challenge for all of us because it means understanding the languages of other disciplines; an anthropologist, for example, may have trouble finding a common language to collaborate with a mathematical modeler. I think our younger colleagues are much better at doing this; they are much more flexible. We must look to them sometimes for their enthusiasm and their leadership.

Creating career pathways for transdisciplinary knowledge is going to be important. We all know it is quite difficult to get funding for transdisciplinary research, because most of our research funding institutions are in the old silos that we were all brought up with. You have the medical research people, the environmental research people, the Economic Research Council in my country. What we need is cross cutting research which addresses the problems of our age. And more specifically, we need to take much more systems-based approaches. It is no good just looking at single interventions; you have to understand how the intervention is going to affect the system as a whole, because there are non-linearities, sudden surprises, and often negative, unintended consequences. It is very important to understand these complex interactions.

Let me share some examples of what we have been doing in our institution. We have set up a center on climate change and planetary health. We define planetary health as the interrelationship between environmental change and human health. We can no longer think of these as two totally separate issues, because we know that climate and other environmental changes already affect human health, and will do so increasingly in the coming decades. This center aims to bring together a whole range of disciplines, not just within my own institution, but also outside. It brings together traditional public health disciplines, various social sciences, climate science, soil science, mathematical modeling, and a whole range of other techniques. It also aims to foster education, not just face-to-face, but distance learning, and increasingly blended education.
We also offer short courses and continuing education; this is absolutely crucial because knowledge is changing at such a speed. The center undertakes primary research but also synthesizes the knowledge that we already have. For example, when you search for papers on climate change and health, there are tens of thousands of results. We are exploring novel approaches, like artificial intelligence, to understand what are the key papers. There is a lot of methodological development required.

We have to put our own house in order. Our students and younger colleagues often ask, ‘What are we doing about climate change in our institution?’ In addition to all the research and education, we have to cut our own greenhouse gas emissions and reduce our own environmental footprint. We have a task force that is proposing the ways in which we can do that. Institutions that are lucky enough to have investment funds need to divest from fossil fuels. We are also undertaking a big project with the SDSN, the Pathfinder Initiative, which aims to look at evidence-based solutions to move towards a net zero, healthy economy, and reduce the impacts of climate change while reaping the near-term benefits of living in a more sustainable economy (reduced air pollution, improved diets, better transport systems, etc.).
After Rio+20, I was elected President of the General Assembly and reached out to Jeffrey Sachs; I remember us working very hard with all 193 nations of the world to set up a framework that led to 2015 - peak year for multilateralism, when the 2030 Agenda for Sustainable Development was adopted. Not only was this the year we agreed on the 17 Sustainable Development Goals, but it was also the year of the Paris Climate Agreement, and the year of Addis Ababa Action Agenda on Financing for Development. There was a universal recognition of the urgent necessity to bring about a comprehensive and coordinated change in economic, social and environmental policies around the world. No nation wanted to be left behind or be absent from this grand vision for a sustainable future of humanity.

From today’s perspective, it seems like distant history. Soon afterwards, visible cracks appeared in the global contract of 2015, that looked very solid and promising. 2016 brought about tectonic changes throughout the world, like the shift in politics in the UK and the United States. Today, in 2022, we as a world are in a deep recession. Not an economic recession, but rather a geopolitical recession. Geopolitics, just like economy, is a process that comes in cycles. The cycles of boom are followed by the cycles of bust. Economic cycles are easier to spot and quantify, and tend to last for a couple of years. In geopolitics, you can only tell that you are in a recession after certain dramatic developments, after they’ve been in the making for a very long time.

Unlike economic recessions, which usually last for a few years, geopolitical recessions tend to last for decades. Right now, we are in a very deep geopolitical recession where there is no more international cooperation, a sine qua non for fulfilling the common global goals. As opposed to international cooperation, zero sum is the philosophy of a geopolitical recession. One of the corollaries of geopolitical recession is unfortunately populism, which takes over domestic politics of countries and results in brutal short-termism.

Sustainable development, meanwhile, is about long-term goals - planning for the future and future generations. It’s not about the next political cycle or upcoming elections. Unfortunately, when you are faced with challenges brought about by populism, the political debate in those countries gets hijacked by political opportunists and populists. The debate shifts from education, environmental degradation, or social inequalities, to nationalism, religious issues and differences, anti-migration rhetoric and accusations of espionage and disloyalty. I come from one such country, and I’m sad to say that today we don’t have anybody representing Serbia apart from myself. I’m not surprised that this is the case: we will have elections a couple of months from now and we do not discuss education policies for sustainable development. When politicians and political parties fail to show leadership and solely focus on short term goals, the roles of those who are not dependent on the political process (such as universities and academia) have an outsized role to play.
They need to step up and fill in the void; to lead the national, regional, and international debate on where the world is going and how to make sure that humanity gets back to the sustainable trajectory.

So, those who are in leading academic positions, apart from helping set up policies or defining national or regional targets, need to do a lot of advocacy work. Sometimes their advocacy is crucial to whether or not the public and the policymakers, are even going to start looking at what needs to be done to ensure that our children inherit a world different to the one in which we are living. Academic leaders need to be bold, loud, and fearless. It’s not always easy in every country. As Jeff Sachs said in the General Assembly Hall as I was presiding: “Future is not fate. Future is a choice. It is up to us to make the choice.”
The UN SDSN set forth a pathway for a better and brighter future by tackling poverty, inequality and environmental degradation. Why is there an SDG which is explicitly dedicated to education? I think most of us would probably agree that universities and education in general have an active role to play, as well as most SDGs—not just the one dedicated to education. We need to invest in education for sustainable development and our approach as a whole society, acknowledging how seemingly distinct phenomena are deeply intertwined, interlinked.

To that end, please allow me to share some very brief thoughts on key policy initiatives from Greece on three different levels. The first one is the university level, the second one is primary and secondary education, and the third one is vocational education and training. And I’ll mention very briefly why I connect the three of them together. So, the first and obvious reason is the university level. In Greece, we are introducing at every university a unit for sustainable development directly under the offices of universities’ rectors. The main target of this new unit is the integration of sustainability into the educational, research, and operational activities of universities. Sustainability has to be interwoven into the fabric of what students learn across disciplines, into the research outputs produced by faculty and into the way universities are even managed.

We have also launched a network for sustainability to promote best practices and create further momentum, because we believe that when we all work together, we produce better results. Through this network, universities are currently in the process of revising their charter for education on sustainability for the coming decade. And finally, we’re further incentivizing universities to include SDGs in their strategic plans, by linking part of their funding to their performance in terms of sustainability.

But I really think that this battle we’re all living together starts from a very early age. And that’s why we have also focused, aside from the university level, on earlier levels, namely, primary and secondary education. We have introduced policies in line with SDG 4.7 in schools. We have revamped all school curricula in order to place focus on skills at the very heart of learning, along with integrating sustainability across disciplines. We have updated the content of what is taught in schools, introduced new pedagogies, which are skill and student centric, and have incorporated digital tools across the board. And we have introduced a new model called the ‘Skills Labs.’ It’s integrated from the age of four until the age of 15 and focused on all the axes set forth by SDSN.

The third and last level is vocational education and training (VET). We have radically reformed the way VET modules are set by including social partners in the process of curriculum formation, so that what students actually learn is also relevant to society’s needs. For instance, we have introduced new specialties regarding technicians for renewable energy sources. We have gone to the source, we have gone to the market, we have gone to the society level, and seen that there’s a tremendous need for such specific specialties.
So we are heavily investing in model vocational schools, introducing thematic VET institutes to enhance the overall quality of VET education. All this is because we think that VET has a crucial role to play in ensuring quality education for all and promoting a sustainable future.

So, in conclusion, I really think that when it comes to education for sustainable development, it is essential to start as early as possible and to aim as broadly as possible.

We have to integrate sustainability across the board from pre-K to universities and lifelong learning and from what students learn to what research faculty conducts. This, I think, will ensure that our common efforts will have an impact and that we will be able to meet the Sustainable Development Goals.
The University of Stuttgart is a state university located in the southwest of Germany. The university is a member of the TU9 group, which consists of nine leading technical universities in Germany. At the University, what does it look like when we approach sustainability? First of all, according to the Climate Protection Act of the State of Baden-Württemberg, which was amended in October 2021, it placed the responsibility on us to become climate neutral by 2030. We have only a few years to achieve this, because the climate neutrality targets for state administrations, including all universities, have been brought forward by ten years, from 2040 to 2030, by the amendment. This is very ambitious for us.

Not only do we want to be pioneers here in Stuttgart in driving climate protection forward at all levels in the university through teaching, but also in research, operations and our structures, too. That means that we will have to change everything in our university, even university laws. We see the urgency of combating climate change and its impacts. We also see the great challenges that lie ahead. We are under great pressure, both socially and in terms of time, to get a grip on advancing impacts of climate change and to achieve climate neutrality with net zero emissions in line with the 1.5 degree target of the Paris Climate Agreement in 2050 within the next years. So, that’s the goal have and what our government says, for future generations to find a world worth living in, so we hope.

As a research university, our scientists are at institutes and in larger networks researching topics such as, the clusters of excellence and advance climate relevant knowledge, that contribute to answering, for example, lightweight constructions, environmental modeling and climate impact research. We have expressed our objectives and the university’s recent strategy and development plan for the next five years. This plan states that the University of Stuttgart will act according to its vision, “Intelligent Systems for a Sustainable Society”, and acknowledges its responsibility to make an active and ambitious contribution to sustainability, especially climate protection and adaptation.

We take our responsibility seriously, and we are actively working to become more sustainable by making an ambitious contribution to climate protection and wanting to become climate neutral. So, how can we do that? What’s the method to anchor sustainability? We do that with a Green Office, which was established in May 2021 and is a center for climate protection and sustainability issues. It’s a think tank for sustainable transformation and a catalyst for the university-wide climate protection strategy, as well as climate protection and sustainability education. We want to be visible in our sustainability and climate protection, as well as be sustainable and emission-free for our mobility. That is the network we want to build in the short-term and long-term future.

At our university we have fireside chats on climate neutrality. For example, “Aspiration and
Reality” was about climate neutrality in buildings and neighborhoods, others include “Climate Neutrality Mobility at the University” and “The Way to a Climate Neutral University of Stuttgart.” We discuss these topics within the university, and we act on it with the university laws. Let us tackle the big challenge of creating climate neutral universities, and let’s share our approaches, experiences and results.

Rector Ressel and the University of Stuttgart wished to share more information on the following projects.

- **The Green Office** at the University of Stuttgart is the central knowledge base for sustainability at our university.
- **The CampUS hoch i Project** of the University of Stuttgart is a real-world laboratory on how to intelligently reach carbon neutrality at the University.
- **The MobiLab** (Mobility Living Lab) at the University of Stuttgart Vaihingen campus is a real-world laboratory for intelligent and emission-free mobility on campus.