

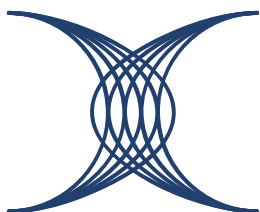
# GLOBAL PRIORITIES, EDUCATED SOLUTIONS

The Role of Academia in Advancing  
the Sustainable Development Goals



INTERNATIONAL ALLIANCE OF  
RESEARCH UNIVERSITIES

A report on the program hosted by the International Alliance of Research Universities during the Annual Conference of the International Sustainable Campus Network, 12 June 2018 in KTH Royal Institute of Technology, Stockholm



## INTERNATIONAL ALLIANCE OF RESEARCH UNIVERSITIES

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This report was developed and written by four students from IARU institutions: Elsie Moore (lead - Yale University), Whitney Pailman (University of Cape Town), Rupert Stuart-Smith (University of Oxford), Mikayla Tran (University of California, Berkeley).

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## Preface

I am delighted that the International Alliance of Research Universities and the International Sustainable Campus Network co-hosted this important meeting and are taking on the Sustainable Development Goals (SDGs) so intensely. The SDGs are a crucial agenda and a very important one for universities - not only for how universities should be adapting themselves internally but also for the many contributions that universities can make to the very big challenges that are represented by the SDGs. I believe universities have a unique role and responsibility in helping the world to achieve the SDGs.

The SDGs provide a universal agenda that is time-bound. The changes that they call for are extremely important, and the goals themselves are a guide for us. The goals also constitute a profound set of challenges, however, and addressing these is not simple. Broadly speaking the SDGs call for molding a world that is currently neither socially fair nor environmentally sustainable into a world that is simultaneously prosperous, inclusive, and sustainable. I think of the 17 SDGs as requiring six major societal transformations:

**First: Transform all societies into learning and innovation societies.** SDG 4 calls for universal secondary education completion and access to higher education and SDG 8 and 9 call for decent jobs and innovative societies. Most places in the world have yet to achieve these aims, so the transition to universal access to quality education and skills for the 21st century and in an innovation environment is the first key transformation.

**Second: Transform the health and well-being in populations.** SDG 3 has specific targets on reducing the still very high infant and maternal mortality rates in low-income countries. It calls for universal health coverage and mental health and well-being for all. We are very far from achieving these targets and therefore the second major transformation is in health.

**Third: Transform to a low-carbon society.** I consider the Paris Climate Agreement to be a package deal of SDGs 7 and 13, which together highlight the imperative to advance to a low-carbon society. This transformation requires profound shifts in infrastructure, primary energy sources, uses of energy, transport infrastructure, and other key systems.

**Fourth: Transform to sustainable land use.** Our global land use patterns are destroying our biodiversity, over-consuming our fresh water supplies, and degrading ecosystem functions. SDGs 2, 14, and 15 are dedicated to biodiversity conservation, ecosystem maintenance, and sustainable food supplies, which brings me to sustainable land use as the fourth transformation.

**Fifth: Transform to sustainable cities.** In a world that is now more urban than rural and is rapidly urbanizing, the cities of the 21st century need to be different than the cities of the 20th century. They cannot be primarily automobile-based cities with long automobile commuting distances. They cannot be fossil fuel-based cities. They need to be cities powered by electricity, public transport, walking, shared vehicles, and need smart infrastructure.

**Sixth: Transform to a digital society.** We are in the middle of a profound revolution of digitization. All of the aspects of governance, privacy, surveillance, and cyber warfare, plus the disruptions to the economy from the movement to a digital production system throughout all sectors of the economy means an enormous transformation. We do not yet have the governance structure for this evolution, or even have the specifics of how it will work.

Any one of these six transformations would be a huge undertaking worthy of major university departments, research programs, PhDs, and the like, but the idea is that these are a set of mutually required changes that need to be carried out jointly if we want a decent safe society globally. They also have to be carried out at multiple scales – from the campuses to local governments to national governments, and to transnational river sheds and regional organizations.

While ambitious, and even seemingly impossible to some observers, the SDGs were adopted by the 193 UN member states because all nations can see plainly that the world economy today is not functioning to meet human needs. It is not providing fairness and social inclusion or overcoming extreme poverty. It has not put us on a path of demographic sustainability in low income countries. Climate change is not a small matter; it is truly existential. The mass destruction of biodiversity is not a small matter; it is potentially devastating. We have perhaps 20 years left to get our environmental management on course or risk becoming the agents of mass species extinction and massive human suffering.

These challenges are well beyond the capacity of governments to address by themselves. I've long felt that we face a research and implementation challenge that is worthy of the best of knowledge institutions around the world. We should be putting our students to work on these time-limited, goal-based transformations so that our students can understand better the world that they will soon be helping to lead. I also believe that we all need to embrace the reality that we live in a complex system of systems, so that traditional disciplinary approaches – whether ecology, energy, engineering, education systems, economics, or health care – cannot prosper or deliver as separate islands but need to be seen as part of a holistic, transdisciplinary, university-wide agenda.

I want to close by emphasizing that I hope that IARU, ISCN and SDSN will join forces to work on these issues. The SDGs are fascinating: the more you take them seriously the more difficult, more complex, more frustrating, more important, and more inspiring they become.

Jeffrey D. Sachs  
Director, Sustainable Development Solutions Network  
Director, Center for Sustainable Development at Columbia University



Jeffrey D. Sachs is a world-renowned professor of economics, leader in sustainable development, senior UN advisor, bestselling author, and syndicated columnist whose monthly newspaper columns appear in more than 80 countries.

*This text is an excerpt from Jeffery Sachs' keynote address given virtually on June 12, 2018 at the Global Priorities, Educated Solutions: the Role of Academia in Advancing the Sustainable Development Goals program at the ISCN Conference hosted by KTH Royal Institute of Technology.*

## Introduction

On June 12, 2018, the International Alliance of Research Universities (IARU) hosted a half-day special event during the International Sustainable Campus Network (ISCN) conference on the role of academia in advancing the United Nations Sustainable Development Goals (SDGs). Titled *Global Priorities, Educated Solutions: the role of academia in advancing the SDGs*, the event was a collaboration between the IARU Sustainable Campus Initiative and the IARU Global Transformational Initiative with support from the IARU Secretariat.

IARU is a network of 11 research-intensive universities from nine countries that work together on a shared vision and commitment to educating future world leaders. In 2009, IARU created the Sustainable Campus Initiative to catalyze campus sustainability work of member universities by sharing best practices and by working collaboratively. Each member institution has a robust set of campus sustainability initiatives, and the collaborative effort to foster dialogue, innovate, measure successes, and develop solutions has both enhanced the Alliance and the commitments of each member. This spirit of collective action in the context of different national circumstances helped to shape the narrative on the role that higher education institutions can play in achieving the SDGs.



Image 1: IARU Member Universities

Led and organized by IARU professionals and faculty members, the event featured presentations from both IARU and non-IARU universities. It was composed of two plenaries, four breakout sessions, and a keynote address from Jeffrey Sachs, Director of the UN Sustainable Development Solutions Network and Director of the Center for Sustainable Development at Columbia University. The breakout sessions were moderated by IARU representatives with IARU students as rapporteurs. Each session included two presentations from universities around the world. The event was organized in four tracks:

- Scholarship for Solutions: Teaching and Research in the Context of the SDGs
- Walking the Talk: How Campuses Can Lead by Example in Terms of Operational Excellence and Using the Campus as a Testbed for Innovation
- Next Generation Innovation: The Role of Students in Advancing World-Changing Ideas
- Service for society: universities as thought-leaders and collaborative partners in addressing global challenges.

This report, which was collectively developed by four IARU student rapporteurs, is organized by these themes. Each section includes a description of the session, overviews of the presentations, and key takeaways from the group discussion. This report concludes with highlights of the myriad ways that universities are engaging with and advancing the SDGs and then spells out key opportunities and challenges to using the SDGs as a platform for sustainability programming in higher education. Due to the global perspectives presented in this report and rapporteurs from different institutions, there are slight variations in language usage (i.e. faculty versus academic staff). To remain true to the information conveyed, this report refers to things as they were originally presented by the speakers.

This event took place during, and in collaboration with, ISCN's twelfth annual conference in Stockholm, Sweden. Hosted by the KTH Royal Institute of Technology, the three-day conference featured a diversity of presentations and conversations ranging from integrating sustainability into the educational curriculum to student-led initiatives to the campus as a living laboratory and developing a strategic city. The theme of this year's conference was "Sustainable Development: Acting with Purpose," and focused on actionable ways universities can address pressing global challenges. Aligned strongly with this theme, the IARU Global Priorities event explored the imperative of academic institutions to be more proactive and dynamic about advancing the aims of the SDGs.

## Sustainable Development Goals

In 2015, 193 member countries of the United Nations adopted the SDGs. This marked the first time the global community agreed on an actionable agenda with priorities, goals, and targets that included all countries and all citizens. The process of developing the SDGs prioritized inclusivity – with non-governmental decision-makers, sectoral experts, and the population at large involved through a variety of consultative processes. Building on the progress of the Millennium Development Goals and the multiple years of global consultations the resulting [Transforming our world: the 2030 Agenda for Sustainable Development \(the SDGs\)](#) provides a guide for global action on people, planet, prosperity, peace, and partnership.<sup>1</sup>

Summarized as 17 broad goals, the SDGs lay out a set of sustainable development priorities to accomplish by 2030. With no fewer than 169 targets, they seek to address critical obstacles in the pursuit of social and environmental justice. Each target has indicators that ground the goals in measurable outcomes, and each year the UN High-Level Political Forum for Sustainable Development reviews the status of select goals. While there has been progress on the SDGs, it is widely accepted that concerted and inclusive efforts are required to achieve them by 2030.

The complexity of the global goals requires integrated solutions, coordinated actions, transparency, and



Image 2: UN Sustainable Development Goals

accountability, and scaled policies and programs. While there has been consistent rhetoric about the need for collective action to achieve the Goals, much of the dialogue has focused on the private sector, NGOs, and municipalities. Until recently, the role that higher education institutions can play received less attention. This event and this report seek to call attention to the assets that academia has to offer in the quest to make progress on these pressing global priorities.

## PLENARY: IARU Highlights on Institutional connections to the SDGs

To set the stage for the event, representatives from the University of Cape Town, Peking University, and the University of California, Berkeley, shared how their institutions are working on the SDGs and proposed why they think this is an important topic.

### Harro von Blottnitz

#### Professor in the Faculty of Engineering and the Built Environment at the University of Cape Town

Professor Harro von Blottnitz presented on University of Cape Town (UCT)'s [2015-2016 Research & Innovation report](#). When the SDGs were adopted in 2015 it did not come as a surprise to many of the academics working on sustainable development at UCT. The university's 125-year research tradition has always had strong elements of studying the natural world and development challenges. Several UCT researchers were involved in the lobbying and drafting of the SDGs. Inspired by the historical gravity of the United Nations decision, the UCT university executive did something remarkable in 2016: astonished by how well the global goals mapped onto the university's strategic direction, UCT structured their Research & Innovation Report according to the SDGs, rather than according to faculties and departments.

The research and innovation report gives examples of how academics and their research help shape the goals, how knowledge of specific developmental contexts can be used to prioritize amongst the 169 targets, and how independent and critical voices can help to verify whether the goals are met as closely as possible. It also shows how the increasingly interdisciplinary focus of much university-based research is essential for not losing the complexity inherent in finding solutions for a more sustainable world. While the report provides numerous examples of contextually grounded research, Dr. von Blottnitz opted to share a few overarching insights:

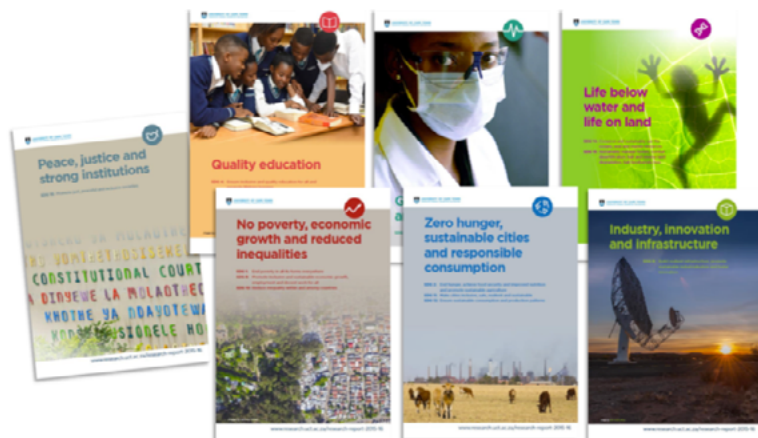


Image 3: University of Cape Town 2015-2016 Research and Innovation Report

- Make room for interdisciplinarity and interdisciplinary research. This is needed to ensure that the SDG targets are fully understood in specific places and context and that they are not arbitrarily reduced to what is encountered or what is convenient to those in power. Interdisciplinary research has been on the rise in universities over the past several decades and sustainability institutes and sustainability studies are a cornerstone of interdisciplinary work.
- Embrace, structure, and utilize internationalization in the spirit of goal 17.

International alliances such as IARU and ISCN provide opportunities to learn from each other about sustainable development best-practices. Additionally, regional networks, such as the African Universities Research Alliance, which UCT is involved with, not only promotes internationalization but in the African context can help promote continent specific research.

- Make space for innovation. While there have been steady advancements in human progress, innovation, if fostered, has the potential to accelerate future advancements.

While there are many other takeaways that could be gleaned from this report, UCT's 2015-2016 research and innovation report demonstrates not only how closely the SDGs matched the strategic vision of the university but how UCT's research presents opportunities for SDG advancement.



## **Ling Xue Professor of Regional Development and Social Computing at the School of Government, Peking University**

Professor Ling Xue explored the topic of universities and the SDGs through a case study of tea in the Yunnan province of China. Dr. Ling revealed how sustainability teaching can help equip the next generation with sustainable development knowledge and skills while also helping to address urgent local challenges.

Yunnan is a province of the People's Republic of China, situated in a mountainous area in the southwest of the country. It shares a border with Burma, Laos, and Vietnam. Yunnan has several different tea growing regions and one of the best-known products is Pu-erh tea. Recent growth in Pu-erh tea demand and tourism are altering the region. For example, Professor Ling explained that Pu-erh tea currently is transported by the Tea Horse Road, which is a network of caravan paths winding through the mountains, but the growing markets and high travel cost are demanding alternative transportation.

Peking University became interested in investigating sustainable strategies for this region. To assist the local government, and to build on China's recently launched Rural Revitalization and Ecological Civilization and the SDGs strategies, a group of undergraduate and graduate students from Peking University, led by Professor Ling, spent several summer months in Yunnan researching sustainable development strategies for Pu-erh tea. While the students observed that current economic patterns are not sustainable, they found there are solutions that can be implemented to help the region's economic growth and sustainability. A few of these suggestions include:

- The region should build a new Tea Horse Road to reshape the economic geography. The new road would allow for goods, people, money, information, and technology to move more easily in and out of Yunnan. The road could, in the future, be converted into a self-driving road.
- Currently the region is too specialized and therefore should diversify and broaden the economic base to create greater economic stability. One way to do this would be through more events and marketing placement for the region to increase tourism.
- The region should adopt total quality management strategies for tea to ensure quality. These could mirror those found in the wine industry.



Image 4: Peking University's Social Investigation Summer Program

The students presented their research findings to local government officials and some are continuing to work on next steps. This experiential learning provided students with the opportunity to work on a current sustainable development challenge that required balancing economic, social, and environmental concerns.

**Khatharya Um**  
**Associate Professor of Asian American and Asian Diaspora Studies, University of California, Berkeley**

Professor Khatharya Um presented on how forced migration is linked to the SDGs, and overviewed opportunities and challenges presented to public universities with regards to these issues. According to the United Nations Refugee Agency, worldwide displacement is at the highest level ever recorded.<sup>2</sup> Many of the catalysts of forced migration are rooted in structural problems that are at the core of the SDGs. They involve lack of access to resources and opportunities, inequalities, conflict, challenges to livelihoods, which include environmental factors. According to Professor Um, at least 10 of the 17 SDGs are relevant to the discussion of refugees. The links to the SDGs are also in the consequences of forced migration - loss of opportunities and livelihoods, poor health (physical and mental), disrupted education, and downward mobility. These issues are interrelated, and the efforts needed to prevent, manage, and resolve the conflicts around the world requires involvement from many stakeholders – including academic institutions.

Professor Um provided an example of how this holistic approach is being operationalized. She and five faculty members from across the University of California system, came together to form the [Critical Refugee Studies Collective](#), a program aimed at creating an intellectual space that is dedicated to forging new and humane paradigms, dialogues, visuals, and technologies that replace and reverse the de-humanization of refugees. The *Collective* is a partnership between universities, communities, academics, advocates, and artists that came together to create a new platform for advancing refugee concerns. One of the strengths of the *Collective* is that the founding members are not just scholars of refugee studies, they are refugees themselves. This informs the approach and pedagogy immeasurably. Additionally, the *Collective* grounds refugee voices and presence as co-producers of knowledge and as agents of transformative change.

Professor Um highlighted that there are challenges to trans-disciplinary initiatives and community engagement. Many universities are not set up to support these principles and are not agile enough to adapt to these innovations. She raised questions such as: How do you work with other stakeholders and knowledge producers besides academics? How do we value the work of those people who may have very different resumes? How do we align the different types of faculty incentives and reward structures with these principles? Professor Um suggested that to find solutions to these challenges there must be vision, institutional leadership, and political will. Faculty should forge collaborations outside of their disciplinary silos and work with stakeholders beyond

the campus. Students should receive mentorship in the process of community engagement and have it become an integral part of their education with intentional structures and resources dedicated to fostering community engagement.

Showcasing three unique forms of academic engagement with the SDGs, the opening plenary presentations at this event highlighted that there is no one way to engage with the global goals. Depending on the interests of faculty, students, staff, and leadership, academic institutions can build on existing strengths and curiosities to help advance the SDGs. These presentations also laid the foundation for the four proceeding breakout sessions that concentrated on research and teaching, operations, the role of students, and service.



Image 5: Disrupted Education as a Consequence of Forced Migration

## TRACK: Scholarship for Solutions

### Teaching and Research in the Context of the SDGs

The first breakout session focused on *Scholarship for Solutions*. Moderated by Ms. Amy Ho from the National University of Singapore, this session highlighted the possibility of the SDGs as a framework to foster collaboration and address global challenges from a multitude of varying interests and expertise. During this dynamic breakout session, Dr. Melissa Goodall from Yale University and Dr. Christine Bratrach from ETH Zurich presented their work on mapping research and educational activities onto the SDG framework. Working on the SDGs at a campus-level was found to be useful in identifying gaps and opportunities for collaboration, and understanding the societal responsibility of universities as part of the knowledge sector. The work from both presentations by each institution exemplified ways universities can create pathways and provide opportunities for faculty and larger campus operations to contribute to the dialogue on sustainability.

#### Case 1: Yale Scholarship and the Sustainable Development Goals

Dr. Melissa Goodall, Associate Director of the Yale Office of Sustainability, offered insights on the process and outcomes of a multi-year project of a matrix that connects teaching and research at Yale to the SDGs. The goals of this project were to identify pathways for collaboration between disciplines; provide a rationale for thinking of higher education sustainability beyond operational commitments, and identify the expertise Yale might lend to the process of achieving the SDGs.



Image 6: Yale Faculty Connections to the SDGs

members teach and/or conduct research related to at least one SDG. The data shows heavy representation in SDG 3, Good Health and Well-being, because over half of the Yale faculty members hold primary appointments in the Schools of Medicine, Public Health, and Nursing. Other areas of strength included SDG 4, Quality Education and SDG 16, Peace, Justice, and Strong Institutions.

Next steps for this project include creating department-specific reports and using those to verify data through ground-truthing interviews, developing reports by SDG, and exploring platforms to share the data.

Over the course of 2.5 years, an interdisciplinary team of students catalogued the research and teaching of over 4,000 Yale faculty members to determine how their work relates to the SDGs. This produced a database with the distribution of SDGs for the entire university that can be sorted by SDG or by department, and can also be used to generate a multidisciplinary list of faculty with shared interests.

The initial conclusions were that every department at Yale has at least one faculty member whose scholarship relates to the SDGs, and 97% of faculty

## Case 2: Integrating the SDGs into ETH Zurich's 2030 Agenda

Highlighting similar themes of collaboration, Dr. Christine Bratrach, Director of ETH Zurich Sustainability, presented campus efforts to integrate the SDGs into academics in 2030 Agenda: Experiences from ETH Zurich. ETH Zurich has committed to the 2030 Agenda, as its framework helps to increase visibility, collect and catalog data, and take societal responsibility to the global challenges of our time. As a school focused on technology and engineering, ETH Zurich may not immediately be called to mind when thinking about the largely human-centric SDGs. However, Dr. Bratrach identified various connections between ETH Zurich and the SDGs as two innovating forces that are always moving forward, whether by creating Science, Technology, Engineering and Mathematics (STEM)-focused research or establishing an internationally accepted frame of sustainability for future strategic planning.

One of the ways ETH Zurich aimed to integrate the 2030 agenda into academics was to use the SDGs for an overview and gap analysis. By collecting quantitative data on research, education, and campus operations to aid in internal communication, the team at ETH Zurich was able to not only acknowledge efforts of faculty but also identify areas for improvement. The SDGs were used as a communication tool for sustainability, as the ETH website showcases campus efforts in order to maintain transparency and act as support for decision-makers. The goals also helped in supporting innovative education through an annual event called ETH Week. During ETH Week, about two hundred students across departments engaged in analyzing one major societal issue and developing sustainable solutions that were later shared in a final group presentation. Through this hands-on learning experience, students acquire skills to handle frustration in intimate learning environments and gain inspiration from motivational keynote speakers. Although the campus work on SDGs presented a difficult workload, the students acted as the driving force, using existing knowledge as a base for the work. As Dr. Bratrach stated during the breakout, "society needs responsible leaders of tomorrow." Through the SDG-focused work on campus, ETH Zurich aims to continue the support and cultivation of such leaders.

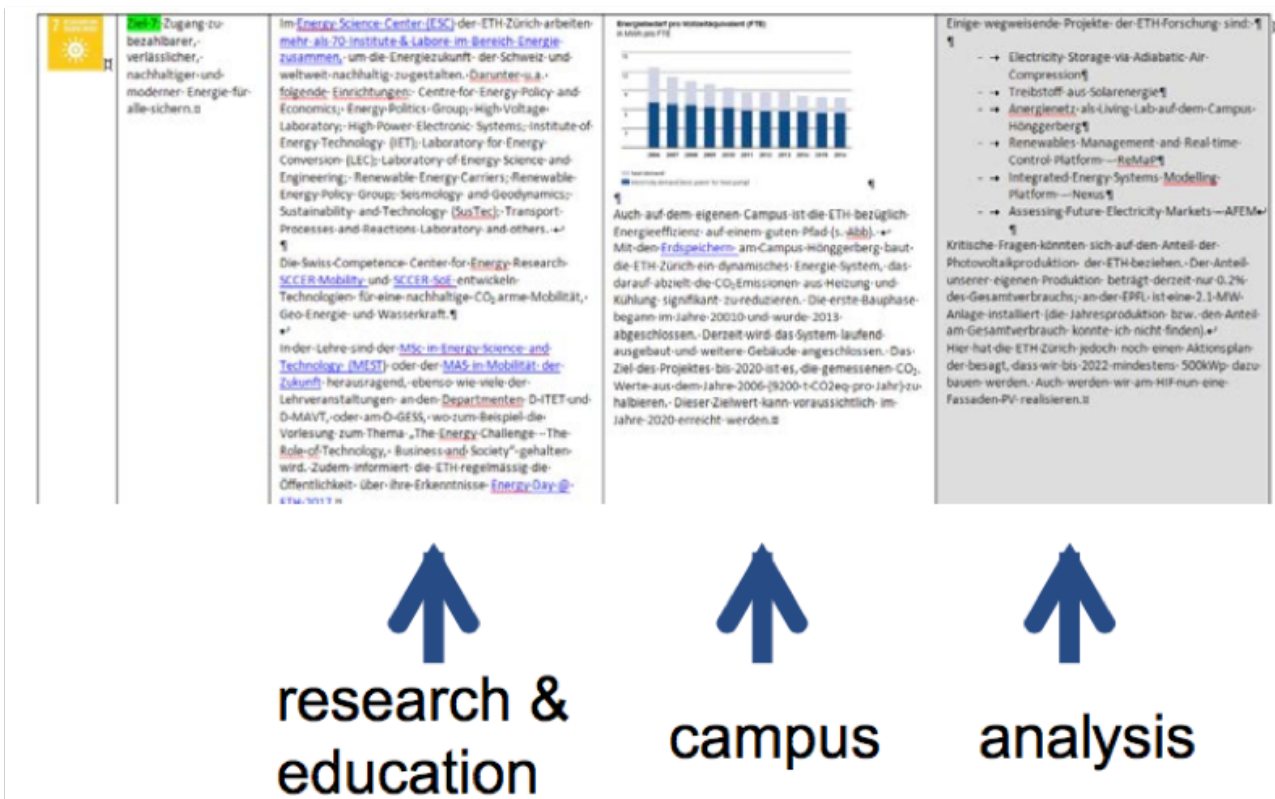


Image 7: ETH Zurich SDG Overview and Gap Analysis

## **Discussion and Recommendations**

Following the two presentations, there was an informative discussion about teaching and research in the context of the SDGs. There was agreement that mapping how current work relates to the goals may be helpful in providing opportunities for collaboration between disparate parts of universities and connecting work to sustainability, but it is not an absolute or prescriptive process. The presenters suggested that it is important to solicit feedback from leadership and highlight that it is intended as a tool for collaboration. The power of the SDGs is they have been adopted by all countries and they conceptualize sustainability broadly. People who may not associate their work with sustainability, however, through mapping, are able to see that their current work connects to the SDGs. This can be a fruitful conversation starter. For universities who have not started on the journey, there was discussion of developing a less work-intensive way to illuminate connections and insights of those who have conducted a review.

## TRACK: Walking the Talk

# How Campuses Can Lead by Example with Operational Excellence and Using the Campus as a Testbed for Innovation

The question posed to the attendees of the Walking the Talk breakout session, moderated by Tomas Refslund Poulsen, team leader of Green Campus at the University of Copenhagen, concerned the utility of the SDGs in devising sustainability strategies in diverse university settings and what efforts have been made to align campus operations with the global goals. Mr. Poulsen introduced the session by presenting reflections on how the SDGs can establish a common international language and overall framework for developing sustainable campuses. He also highlighted that the SDGs introduce a more system-based approach in global sustainability discussions and target setting.

### Case 1: Integrating the SDGs into universities

Leanne Denby, Director of Sustainability at Sydney's Macquarie University provided the session's first presentation. She discussed Macquarie's experience of institutionalizing the SDGs into university operations and governance. With the help of a post-graduate student, Macquarie developed a matrix that mapped existing university linkages to the SDGs. For each SDG target, they identified any centers, initiatives, projects, or work that linked to the aims. This project helped to mobilize support for SDG work as it showed the existing connections of the university to the SDGs and highlighted gaps and opportunities to further engage the institution.

The team hosted a series of cross-functional operations workshops to inform the university community about existing initiatives, identify challenges, and gain the support of important stakeholders for the development of collaborative work on the SDGs. The workshops incorporated stakeholders from across academia, operations, and service support and focused on biodiversity, resource recovery and waste, energy and carbon, water, and transportation. Building on the workshops, Macquarie adapted select SDG targets for the university. Ms. Denby

explained that they did not adapt all the SDG targets, but rather those that closely aligned with the university.

Denby's experience was that the organization of these workshops, though challenging, was necessary to impress the relevance of the SDGs on attendees. Organizing the workshops and analyzing the data proved a logistical challenge, taking a year to do so. Further to this, faculty were often difficult to engage on this agenda, with many researchers perceiving a focus on the SDGs as competitive with existing research objectives, particularly when already navigating funding cuts. However, from the experience of Macquarie, the SDGs offer a useful context for the university's sustainability



Image 8: Macquarie University SDGs Workshop

objectives, particularly given the international recognition of the goals. As a widely-understood framework for sustainability initiatives, the SDGs were found to be of use in interactions with business partners as well as boosting the credibility of the university's sustainability efforts.

## Case 2: Taking a SUSTAINable shortCUT

The second speaker at this breakout session was Dr. Dimitris Tsaltas from the Cyprus University of Technology, which opened in 2007. Building a university through repurposing aging buildings nestled among the city streets brought both challenges and opportunities. The university has converted several buildings throughout the city into labs, lecture halls, and student spaces, and they are prioritizing sustainability in these renovations – using solar cooling/heating and geothermal energy. Dr. Tsaltas explained how they converted an old clothing factory into a living lab in the Department of Mechanical Engineering and Materials Science. By purchasing degrading buildings, they have been able to catalyze development throughout the city.

Directly linked to the SDGs, a group of faculty, administrative staff, and students formed an independent committee for sustainable education, research, and development. The main goal of the group is to advise the university on sustainable growth, taking into consideration the SDGs in all relative aspects of academic and social presence of a university. In order to be flexible and operate productively with a bidirectional approach (bottom-up and top-down) supporting staff and students alike, the committee acts independently from the management and university bodies. The committee, with the help of library experts, has catalogued the university's sustainability experts as well as several research projects. The committee is devoted to inclusivity, with all events open to all university personnel and they are working to make the university more accessible to the local community.

While Cyprus University of Technology has made many short-term sustainability gains, Dr. Tsaltas explained that there are challenges. There is limited awareness of the SDGs on campus and progress is slow. However, despite these challenges, as a young university there are many opportunities to embed sustainable development into the future of the university.



Image 9: Cyprus University of Technology

### Discussion and recommendations

In the discussion following these two presentations, it was clear that the SDG framework was rarely a priority for university management, prioritized only by roughly 20% of universities present. Nonetheless, a similar number of universities mentioned the SDGs in their strategy and, going forward, over 70% of attendees at this breakout session indicated that they saw the SDGs as an opportunity to leverage management focus on and priority of campus sustainability. Alignment of university activities with the SDGs is no easy task. The ease of application of these goals for individual institutions was clearly varied, and some have taken steps to

integrate the goals into university policy. It is evident that a growing share of universities are working on enhancing sustainability at their campuses. Universities are still at the beginning of the road on adopting and relating to the SDGs in their sustainability work.

## **TRACK: Next Generation Innovation**

### **The Role of Students in Advancing World-Changing Ideas**

Innovation and entrepreneurship were the salient themes of the third breakout session, *Next Generation Innovation*. Moderated by Kira Stoll, Director of Sustainability at the University of California, Berkeley this session included presentations by Erin Schutte Wadzinski, Director of the Yale Young Global Scholars program and Professor Gunner Sigge, Associate Professor and Head of the Department of Food Science at Stellenbosch University. Their respective programs cover a range of SDG-related topics that encourage innovation and entrepreneurial thinking to address pertinent sustainable development challenges.

#### **Case 1: Yale Young Global Scholars Program: Sustainable Development & Social Entrepreneurship**

Erin Schutte Wadzinski, Director of the [Yale Young Global Scholars](#) (YYGS) program, provided the first presentation on the role of students in advancing the SDGs. YYGS program is one of the ways Yale is training the next generation of sustainable development leaders. Initiated in 2012, YYGS is a rigorous two-week academic enrichment program that brings together high school students from around the world who want to experience life at Yale. The Sustainable Development and Social Entrepreneurship (SDSE) session is one of six sessions in the program with a specific focus on entrepreneurship and sustainable development. SDSE aligns with Yale's objectives of attracting the most promising students and continuing to integrate science, technology, engineering and mathematics disciplines and entrepreneurship into the curriculum. At the core of this program is the belief that sustainability and entrepreneurship go hand-in-hand and that science is at the forefront of driving sustainability. The SDSE session is designed to encourage critical and innovative thinking to develop solutions to some of the world's greatest challenges. The dynamic and interdisciplinary session consists of lectures, seminars, simulations, and a capstone project, which exposes students to a variety of professors from different academic departments with a choice of over 200 elective seminars. The seminars cover a wide range of SDG related topics including global health, international development, environmental sustainability, and gender equality.

Diversity is one of the strengths of the YYGS program as it draws students from over 100 countries. This is key, as diversity is a core element to problem-solving and addressing solutions on a global scale. Yale is intentional about creating a collaborative environment for students with diverse backgrounds as diversity on the campus sparks new ideas and dialogue.

Identifying the current challenges and opportunities for the program, Ms. Wadzinski explained that mobilizing human resources to expand the program has been one of the main challenges. Yale undergraduate students teach several of the program seminars but many students

who specialize in sustainable development are off-campus during the summer months. Building a strong alumni network was identified as an opportunity to effectively track projects and initiatives of the program alumni.



Image 10: YYGS Program Sustainable Development and Social Entrepreneurship Session



## Case 2: Creating the next generation of food scientists: entrepreneurs of sustainable and innovative new food products in a changing world

Professor Sigge, Associate Professor and Head of the Department of Food Science at Stellenbosch University described how the university is helping to develop the next generation of entrepreneurs and innovators in food science through their four-year Bachelor of Science degree in Food Science and the *New Product Development* capstone course. The *New Product Development* course is a synthesis of the knowledge attained in the first three years and builds on the basics of chemistry, microbiology, biochemistry, food science, and engineering. It sensitizes students to the dual challenges of satisfying discerning customers and incorporating sustainability into product development. The *New Product Development* course entails idea generation, the analysis of trends, types of formulations, packaging requirements, product labeling, and sensory aspects to address industry demands. The course is also responsive to the global challenges of food loss and food security as approximately one-third of the food produced globally is wasted, while 800 million people are undernourished. Through the topics of food security, nutrition, and food loss, this course specifically addresses SDG 2 as well as a range of other SDGs. Students are required to come up with a new product that not only satisfies industry requirements but also incorporates sustainability. Students have developed



Image 11: Student innovations generated in Stellenbosch University's New Product Development Course

products such as craft beer from bread and noodles from vegetables. These ideas have resulted in industry partnerships with retail chains in South Africa for commercialization. The university also offers additional support services through their Intellectual Property division and LaunchLab business incubator.

According to Professor Sigge, “the innovation of students knows no bounds,” however the resources required to take innovation to the next level are frequently restricted. Often students come up with ideas that are limited by the financial resources available to acquire new equipment or make use of the latest technological processes. This challenge in itself presents an opportunity for frugal innovation and establishing partnerships beyond the walls of the university. It requires students to think creatively to develop products of value within the confines of limited resources. In addition, they learn

the importance of leveraging partnerships and building linkages with industry to take their products, concepts and ideas forward. To-date approximately 80 companies have partnered with the university and students by supplying equipment, ingredients or sponsoring laboratory analyses and product testing.

### Discussion and recommendations

Discussion during this breakout session concluded that academic institutions are in a unique position to advance solutions for sustainable development through curricula that are societally relevant and responsive, and create spaces for students to collaborate, innovate and apply entrepreneurial thinking to sustainable development areas they are passionate about. In order to tackle a broad spectrum of sustainable development challenges, universities need to create environments that harness the maximum innovative potential of students. Students are infinitely creative, and universities can support their innovation by simply giving them space, resources, and opportunities to advance their world-changing ideas.

## **TRACK: Service for Society**

### **Universities as Thought-Leaders and Collaborative Partners in Addressing local challenges**

The fourth breakout session was dedicated to the topic of *Service for Society*. Professor Harro von Blottnitz, from the University of Cape Town (UCT), moderated this session that featured presentations by Dr. Wendy Purcell from Harvard University and Professor Stephanie Burton from the University of Pretoria. The presentations focused on what Professor von Blottnitz called the “third mission” of universities – to engage and partner with an external and non-academic constituency. Broad recognition that today’s challenges are increasingly complex, urgent, and interconnected and the SDGs can act as guiding principles for future actions, framed this session.

#### **Case 1: Living Labs for sustainability: Towards a learning system for University Campuses**

Dr. Purcell, Professor Emeritus and past President Vice-Chancellor at Plymouth University and Visiting Scientist at Harvard University, provided several examples of how universities she has been affiliated with have embedded the SDGs in their work and used them as a tool to catalyze partnerships. Dr. Purcell’s first example was from Plymouth University, where she was President and Vice-Chancellor. Motivated by Jeffrey Sachs’ call to action that universities need to partner with governments and civil society to address the grand challenges of today, Plymouth University made sustainability a guiding principle. Sustainability became the lens through which the entire academic mission of the university was viewed – operations and supply chain, research and innovation, community engagement, teaching and learning, and the overall student experience. In recognition of this commitment, in 2012 the university won the *Queens Anniversary Prize for Higher and Further Education*, the highest national award for an educational institution in the United Kingdom, and in 2015 *People & Planet’s Green League* ranked it as the #1 most sustainable university in the United Kingdom.

Dr. Purcell provided a second example of a new partnership between Harvard University, the American University in Bulgaria (AUBG), and the Bulgaria Soft Drink Association (BSDA). Launched in 2017, the [Crystal Clear initiative](#) is an industry-led sustainability leadership program that trains current and future leaders on transformational leadership for sustainable development. BSDA and the AUBG, with support from professors at Harvard, designed a program that will be offered annually at AUBG. Grounded in the idea that change for sustainability must be led, the program emphasizes behavior change.<sup>3</sup> Core components of the program are transformational leadership, research and innovation, and closing the knowing-doing gap. Dr. Purcell also reflected on Harvard University’s living labs program, and the role of a research university’s accountability to the future and creating sustainability solutions.

Building on this theme, Dr. Purcell closed her talk by reiterating the important role of universities and their power to bring together civic leaders, local leaders, business leaders, and academic leaders to have conversations and co-create solutions. She suggested that “service for society” should not be viewed as the third mission of universities but as their core mission.



Image 12: Core Components of the Crystal Clear Sustainability Leadership Program

## Case 2: Universities in Africa addressing the challenges of the SDGs

Professor Stephanie Burton, Vice-Principal of the University of Pretoria, further highlighted the important role of partnerships and multidisciplinary collaboration in addressing our pressing global challenges. The University of Pretoria is one of the biggest universities in South Africa and Professor Burton focused her presentation on the unique opportunities for African universities in achieving the SDGs.

The first opportunity Professor Burton suggested is to take advantage of rapidly advancing technology to leapfrog to data-driven sustainability solutions. Showcasing this potential, the University of Pretoria Institute for Sustainable Malaria Control (UP ISMC), supported by the Medical Research Council, along with French research collaborators, employs satellite-enabled data collection techniques for its Remote Sensing for Malaria Control in Africa (ReSMaCA) Programme. The big data generated could support early warning of potential malaria outbreaks. Malaria is a pressing health concern in Southern Africa, and in 2015, globally, Malaria killed 303,000 children under the age of five.<sup>4</sup> The UP ISMC and Travel with Flair, a travel management company, co-developed the Malaria Buddy App. The goal of the [Malaria Buddy App](#) is to provide users with information about malaria-prone areas, risks, prevention, and treatment (i.e. location of the nearest health clinic). To provide users with accurate local information, field observations, remote sensing analysis, and model simulations (similar to techniques used with the ReSMaCA Programme) are combined to populate the Malaria Buddy App. The big-data approach used to create Malaria Buddy

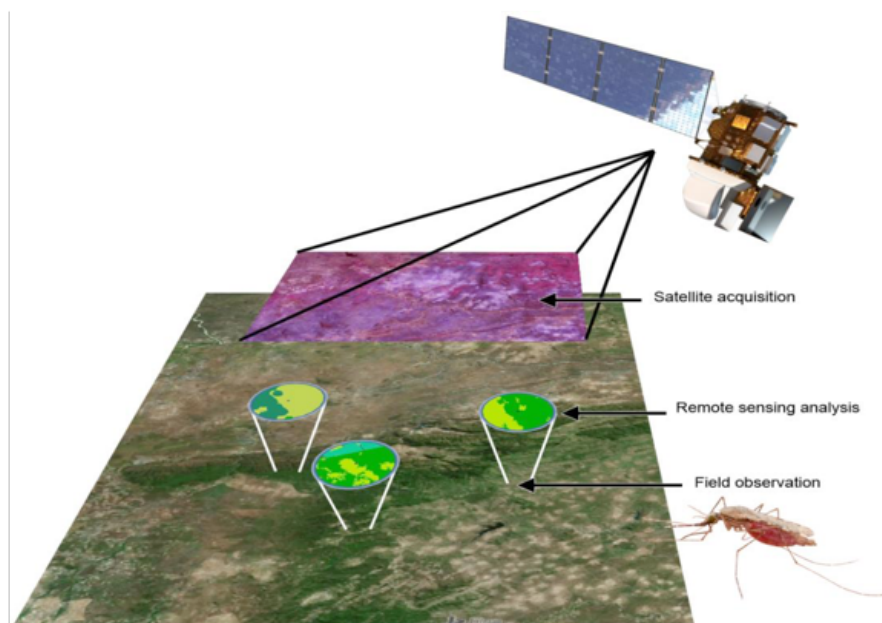


Image 13: ReSMaCA Programme and Malaria Buddy Data Collection Sources

serves as an example of health research innovation that has potential for expansion and can bring us closer to realizing the SDGs.

Professor Burton highlighted transdisciplinary collaboration as another key opportunity. Each SDG cannot be addressed in isolation and people must come together to work on sustainable development. To foster this, the University of Pretoria has launched [The Future Africa](#) initiative. The Future Africa Institute will provide a “dynamic living, learning, and research environment” where scientists, scholars, and practitioners can come together to work on sustainability and the SDGs. Housed on the University of Pretoria’s Hillcrest campus (formerly the experimental

farm), the new campus provides a designated space for transdisciplinary research, focused on African objectives.

Professor Burton suggested Africa’s continent-wide networks are a mechanism to lead SDG work. For example, the Africa Research Universities Alliance (ARUA) is a network of 16 research-intensive universities that focus on expanding and enhancing the quality of research being done in Africa by African researchers. Previously mentioned by Professor von Blottnitz during the opening plenary, the ARUA is dedicated to data-driven sustainability and interdisciplinary approaches. To fully realize these opportunities, all sustainable development efforts must leave no one behind. Central to the 2030 agenda language – “leave no one behind” – academic institutions are vital in ensuring equity considerations are an integral part of any SDG work.

## **Discussion and recommendations**

Several important themes and questions came up during the discussion portion of this breakout session. It was suggested that service should be expressed as a core mission of academic institutions rather than a third mission, because as Dr. Purcell said, “how we express ourselves as universities matters.” Similar to the points made in other tracks, while much is happening around the SDGs at academic institutions it is not necessarily driven by the SDGs. The sustainability office and its equivalent can play an important role in shaping the knowledge environment and fostering understanding of the SDGs. While there are sometimes tensions and barriers within universities between operational and academic staff, university sustainability offices can help promote collaboration and shared vision. There was agreement in this session about the important role of 21st century science, knowledge, and research. With rapidly advancing technological innovations, there are opportunities to harness data, communication, and innovation to help advance the SDGs, both locally and globally.

## Challenges & Opportunities

Based on the presentations and discussions at this special event several cross-cutting challenges and opportunities surfaced. This is not a comprehensive list nor did all the universities involved in this event experience every challenge and opportunity. The commonalities, however, suggest that there may be opportunities for collaboration and shared learning across academic institutions.

### Challenges

1. **Universities have competing priorities.**

*Universities have many competing priorities, and the SDGs are often not at the top of the list. Although people may be interested, they feel they cannot take on an additional responsibility. One way the event participants have tried to overcome this is to connect the SDGs to existing work so it is not seen as additional.*

2. **It is difficult to mobilize resources.**

*Many academic institutions lack the financial and human resources for dedicated SDG work, and sustainability more generally. There was agreement from participants that if universities are to play a greater role in the SDGs, there will need to be dedicated resources – including time.*

3. **Knowledge and understanding of the SDGs is limited.**

*There is a lack of knowledge about the SDGs and how they can be related to research, teaching, operations, and service. Many do not understand the breadth and universality of the SDGs and for many participants, SDG education is an important component of this work.*

4. **Getting started can be challenging and progress is slow.**

*There is no blueprint for university engagement with the SDGs. Each university has unique strengths and challenges, and the support from leadership varies. For some participants, mapping what is already happening has been a useful starting place but requires patience and dedication.*

5. **The typical structure of academic institutions is not set up to promote SDG work.**

*Some institutions may have a misalignment between structures and strategy, and struggle to provide the flexibility demanded by the SDGs. Participants found that the increasing focus on transdisciplinary work and the emergence of centers, programs, and initiatives dedicated to collaboration are paving the way for future work.*

6. **The SDGs are not a practical framework.**

*There is some skepticism that the SDGs may be a passing fad, and they are not a practical framework for universities. Participants found that leadership buy-in is helpful in mobilizing support for SDG work at all levels. Efforts to make the SDGs operational need to continue.*

## Opportunities

- 1. International alliances offer potential for shared SDG learning.**  
*Events dedicated to the SDGs, such as this one, provide an opportunity to share and learn from one another about the challenges and opportunities for academic engagement with the SDGs. Future meetings should consider using the SDGs as a framework.*
- 2. Within universities, the SDGs can help form a common language.**  
*Increasing awareness and integration of the SDGs can provide a common, and inclusive, language to discuss sustainable development. In some cases, further integrating the SDGs could provide a platform for transdisciplinary collaboration and system-based approaches.*
- 3. Academic institutions should not try to address the challenges alone but should forge new partnerships.**  
*The scope and urgency of the SDGs demand new and innovative partnerships. Many universities have the significant convening power and the capacity to act as neutral fora for dialogue and exploration among stakeholders.*
- 4. Harness and support student interest in sustainable development.**  
*Many students are eager to learn about the pressing sustainable development challenges. Coupled with their immense creativity and drive, there is an opportunity to support SDG progress and student learning- within the classrooms, on campus, in the community, and beyond.*
- 5. Innovation and entrepreneurship can help accelerate the global goals.**  
*Innovation and entrepreneurship are critical levers for addressing pertinent sustainable development challenges. By harnessing data, technological innovations, creativity, and collaboration, SDG efforts can more closely align with local context and more rapidly provide solutions.*
- 6. Strong support from leadership can drive progress.**  
*When university leadership sets bold aspirations and asks others to draw on their own experience and expertise to deliver on the grand vision it can create a ripple effect for change and encourage accountability and action at all levels.*
- 7. Act local, think global.**  
*While the SDGs may be global in scope, the implementation of SDGs is necessarily local: every country, region, community, and institution has its unique challenges and possible solution.<sup>5</sup> Local solutions can have global impact, with appropriate scaling.*

## Universities have a unique role and responsibility in helping the world to achieve the SDGs

This event illustrated the relevance of the SDGs to current practice and inquiry in higher education, as well as that the SDGs can be a remarkable platform for collaborative dialogue. The scope and breadth of the presentations, as well as the enthusiasm during the event, indicate that there is an appetite for ongoing conversations and actions. The four tracks used to frame the event can provide useful convening tracks going forward. Key conclusions for each session include:

- **Scholarship for Solutions.** There is a general consensus that the SDGs are unattainable by government actions alone. To-date, there have been robust activities to involve the business sector and civil society, but higher education is only starting to be included in discussions. Universities can help in the investigation, data collection, and analysis of what is required to achieve the SDGs and make sure that “no one is left behind.”<sup>6</sup> Many academic institutions already have research that supports the SDGs; however, this work may not be driven by the SDGs. Scaling up SDG-related research and teaching can help to inform national governments, the United Nations, and other actors working on implementation while meeting the intellectual priorities of faculty and the curiosity of students.
- **Walking the Talk.** Academic institutions around the world have acknowledged the importance of greening campuses. This can help to address the environmental and social footprints of these institutions, but far more important is demonstrating to students – tomorrow’s professionals, leaders, and constituents – the viability of a vibrant culture of sustainability. Connecting campus sustainability efforts to the priorities provided by the SDGs links local activities to the global context, and offers shared objectives as students embark on professional careers. In addition, many college campuses function as microcosms of society – providing housing, transportation, food, and other necessities to student populations – which offers the possibility of testing new technologies and tactics for sustainability.
- **Next Generation Innovation.** Earth Day and anti-apartheid rallies are just a few examples of the disruptive and catalytic power of college students. Students today are eager to help solve pressing local and global challenges, nearly all of which are represented by the SDGs. Universities can provide opportunities for students to lead and innovate through campus initiatives, courses, and research projects related to the SDGs. And while many students will go on to play critical roles in policymaking, social services, education, health, business, and other sustainable development areas, still others may embark on unrelated careers that have the potential to be enhanced by being well-versed in the global context for sustainability.
- **Service for Society.** The challenges and opportunities represented by the SDGs cannot and will not be solved alone. University partnerships and alliances for sustainable development are vital. Academia has an important role in creating environments that encourage dialogue and critical thinking to address sustainable development challenges. The SDGs are pushing us to convene multisectoral and transdisciplinary conversations, and academic institutions have a long history of bringing diverse stakeholders together. Many universities have launched centers and research programs aimed at transdisciplinary collaboration and these are well positioned to push forward the global goals. An essential partner in this is the community. While a universal agenda addressing the most pressing global challenges is key, as anchor institutions, universities can help to create bridges between global priorities and the local actions.

With their wealth of knowledge, commitment to teaching and research, breadth and scale of operations, student innovation and passion, and dedication to service, academic institutions are well-positioned to help advance the SDGs. Building on this event, IARU will continue to explore pathways for collaborations related to the SDGs.

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## Photo credits

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Image 3: Presentation slides, Harro von Blottnitz, University of Cape Town

Image 4: Presentation slides, Ling Xue, Peking University

Image 5: Presentation slides, Khatharya Um, University of California, Berkeley

Image 6: Presentation slides, Melissa Goodall, Yale University

Image 7: Presentation slides, Christine Bratrich, ETH Zurich

Image 8: Presentation slides, Leanne Denby, Macquarie University

Image 9: Presentation slides, Dimitris Tsaltas, Cyprus University

Image 10: Yale Young Global Scholars Program website

Image 11: Presentation slides, Gunnar Sigge, Macquarie University

Image 12: Presentation slides, Wendy Purcell, Harvard University

Image 13: Presentation slides, Stephanie Burton, University of Pretoria



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