HIGHER EDUCATION AND SDG17

HIGHER EDUCATION AND THE SUSTAINABLE DEVELOPMENT GOALS

Series Editor

Wendy M. Purcell, PhD FRSA
Professor with Rutgers University and Academic Research Scholar with Harvard University; Emeritus Professor and University President Emerita.

About the Series

Higher Education and the Sustainable Development Goals is a series of 17 books that address each of the SDGs in turn specifically through the lens of higher education. Adopting a solutions-based approach, each book focuses on how higher education is advancing delivery of sustainable development and the United Nations global goals.

Forthcoming Volumes

SDG16: Peace, Justice and Strong Institutions edited by Sarah E. Mendelson

Higher Education and the Sustainable Development Goals

HIGHER EDUCATION AND SDG17

Partnerships for the Goals

EDITED BY

ÁNGEL CABRERA
Georgia Institute of Technology, USA

AND

DREW CUTRIGHT
Georgia Institute of Technology, USA

United Kingdom – North America – Japan – India
Malaysia – China

Emerald Publishing Limited
Howard House, Wagon Lane, Bingley BD16 1WA, UK

First edition 2023

British Library Cataloguing in Publication Data
A catalogue record for this book is available from the British Library

ISBN: 978-1-80455-707-5 (Print)
ISBN: 978-1-80455-704-4 (Online)
ISBN: 978-1-80455-706-8 (Epub)

ISOQAR certified Management System, awarded to Emerald for adherence to Environmental standard ISO 14001:2004.

Certificate Number 1985
ISO 14001

INVESTOR IN PEOPLE

To Tom Lovejoy, scientist, teacher, change maker, and friend.

PRAISE FOR *HIGHER EDUCATION AND SDG17*

"This is a timely book, which will provide concrete support to the debate on SDG17 and on the actions the higher education community should take in order to pursue its implementation."

Walter Leal, Professor of Environment and Technology, Manchester Metropolitan University, Series Editor of *Concise Guides to the United Nations Sustainable Development Goals* (Emerald)

"As a book series, *Higher Education and the SDGs* will make an important contribution to accelerating delivery against the global goals. To start the series with the book on Partnerships for the Goals makes perfect sense and is highly symbolic since accomplishing the sixteen other ones largely depends on cooperation and collaboration among all relevant stakeholders. This book impressively shows the important role of higher education in teaming up with actors from various other sectors to meet the ambitious aims of the Agenda 2030 collectively."

Prof. Andreas Kaplan, ESCP Business School, Sorbonne Alliance

"The book series *Higher Education and the SDGs* will make a valuable contribution to policy dialogue and higher education practices in achieving the SDGs. This first book in the series on Higher Education for Partnerships for the Goals highlights a range of partnerships, discusses some successful partnership cases and explores ways to enhance the impact of higher education partnerships to accelerate progress towards SDGs."

Qudsia Kalsoom, University of Dundee, UK.

CONTENTS

LIST OF FIGURES AND TABLES

FIGURES

TABLES

ABOUT THE CONTRIBUTORS

Srijan Banik is the Founder and Director of the Social Impact Lab, BRAC University where he works jointly with the students and faculty members to mentor the change-makers of his campus to initiate different impact projects. Along with that, he is also a Global Fellow at the Open Society University Network (OSUN). He is a senior student studying Computer Science and Engineering at BRAC University, a creative thinker, and a youth advocate. In 2021 he became a Millennium Fellow and led the very first cohort of Millennium Fellows at BRACU as its Campus Director. He has worked in a wide range of fields like teaching robotics, combating the food traceability problem, and climate change. He has been actively working on advancing SDGs 3, 4, and 13 with his Start-up KriShop and Civic Engagement project Alokdhenu. He also runs a Podcast that lets Young Leaders from all over the world share their stories.

Marilyn A. Brown is a Regents' Professor at Georgia Tech and a Joint Faculty Member at Oak Ridge National Laboratory, where she worked for many years. She created and co-leads the Climate and Energy Policy Lab and the Master of Sustainable Energy and Environmental Management program. Her research focuses on the design and modelling of energy and carbon reduction policies and energy market transitions. She contributed to the Intergovernmental Panel on Climate Change reports that shared the 2007 Nobel Peace Prize. During her eight years as a Presidential appointee to the Board of Directors of the Tennessee Valley Authority, 18 coal units were closed, one nuclear unit was completed, and many virtual power plants of energy efficiency were built. She served two terms on the DOE Electricity Advisory Committee, has written nine books on clean energy and climate, and is a member of the National Academies of Engineering and Sciences.

Ángel Cabrera is the President of the Georgia Institute of Technology, one of America's leading research universities. Prior to this, he led George Mason University (Virginia's largest public university), Thunderbird School of Global Management (now part of Arizona State University), and IE Business School in Madrid. He was the Lead Author of the UN Global Compact 'Principles for Responsible Management Education' (PRME) and a Co-founder of the University Global Coalition, a network of universities partnering with the United Nations in support of the Sustainable Development Goals. He serves on the Boards of the National Geographic Society, Harvard College Visiting Committee, and Bankinter Innovation Foundation in Spain. He has served on the Board of the Federal Reserve Bank of Richmond and three public companies. An alumnus of Georgia Tech and Universidad Politécnica of Madrid, he was named a Young Global Leader by the World Economic Forum, a Great Immigrant by the Carnegie Corporation of New York and H. Crown Fellow by the Aspen Institute and has received honorary degrees from Miami Dade College and Universidad Politécnica of Madrid.

María Cortés Puch is Vice President at the Sustainable Development Solutions Network (SDSN), where she leads its efforts to build a global network of universities, research centres, and civil society organizations that pursue sustainable development locally through research, public education, executive training, convening of social stakeholders, and incubation of solutions. She represents the SDSN as Commissioner to the Pathfinder Lancet Commission and co-leads the SDSN Europe, an initiative to support the alignment of European policies with the SDGs and the Paris Climate Agreement, contributing to its publications, including the 2021 Europe Sustainable Development Report. She co-edited the 2020 SDSN guide *Accelerating Education for the SDGs in Universities*.

Jasmine Crowe is an Award-winning Social Entrepreneur, TED Speaker, and the Founder and CEO of Goodr, a sustainable Food Waste Management Company that leverages technology to combat hunger and food waste. In 2017, after years of feeding people experiencing homelessness from her kitchen, she launched Goodr,

which has redirected over 5 million pounds of surplus food from restaurants, event centres, airports, and businesses to the millions of food insecure people. She is the Author of the children's book, *Everybody Eats*, an inspirational story about fighting hunger. She has been featured on CNBC, *Oprah Magazine,* Inc., *Forbes,* Fast Co., and the *New York Times*. In addition, *Entrepreneur Magazine* named her as one of the top 100 influential female founders. She is Co-chair of the Drawdown Georgia Leadership Council, and Goodr was a Founding Member of the Drawdown Georgia Business Compact.

Drew Cutright is a Senior Strategy Consultant in Georgia Institute of Technology's Office of Strategic Consulting, with a focus on international initiatives and sustainability. She is the Program Director for the University Global Coalition, a global network of universities working in partnership with the United Nations in support of its Sustainable Development Goals. Prior to joining Georgia Tech, she held roles as a sustainable building consultant, environmental planner, and environmental educator. She has a Master's in Environmental Planning and Design and a Bachelor of Arts in English Language and Literature.

Shriya Dayal is a Master's Student in Transnational Governance at the European University Institute with a deep interest in the UN Sustainable Development Goals, especially SDG17. She has had the opportunity to work on sustainability education in the private sector, climate change education in schools, and circular economy innovation in universities. She aims to contribute towards solving global policy problems by strengthening partnerships between transnational actors. She is also a Millennium Fellow from the class of 2021 and served as the Campus Director of her cohort at Punjab Engineering College, India during her bachelor's degree.

Susan T. L. Harrison is Deputy Vice-Chancellor: Research and Internationalisation at UCT and a Bioprocess Engineer focused on nature-based solutions in sustainable development. Her portfolio includes advancing the research quality, quantity, and impact across the university; enhancing UCT's African agenda; internationalization and

research partnerships; growing and transforming the postgraduate sector; and oversight of interdisciplinary university research institutes. She has led research groupings and championed interdisciplinary research capacity at UCT, as well as the role of soft-funded researchers. Her contribution to research and innovation nationally has been demonstrated through her leadership role in the nurturing of innovation and in the implementation plans for the bioeconomy strategy. She has co-authored 255 research papers including 163 refereed journals, 81 conference proceedings, and 11 book chapters. She has supervised 136 postgraduate students to completion. She is a Fellow of the South African Academy of Engineers and a Member of the USA National Academy of Engineers, being the 6th from Africa elected to membership.

Tahl S. Kestin is the Network Manager for the Sustainable Development Solutions Network Regional Network for Australia, New Zealand and Pacific (SDSN AusNZPac), hosted by the Monash Sustainable Development Institute at Monash University, Australia. She works with SDSN member institutions and a range of local and global organizations to help mobilize the university sector on the SDGs. She led the writing of the 2017 guide *Getting Started with the SDGs in Universities* and the 2020 SDSN guide *Accelerating Education for the SDGs in Universities*. She also leads the joint SDSN AusNZPac and Australasian Campuses Towards Sustainability (ACTS) forum series, *Accelerating SDGs Practice*, which aims to help member institutions accelerate and scale up action on the SDGs.

John A. Lanier is the Executive Director of the Ray C. Anderson Foundation, a Georgia-based private family foundation honouring the legacy of the late Ray C. Anderson. Ray, John's grandfather, was the Founder and CEO of Interface, Inc., the world's largest manufacturer of carpet tile and a leading company committed to environmental sustainability. The foundation funds multiple environmental initiatives, including the Ray C. Anderson Center for Sustainable Business in Georgia Tech's Scheller College of Business, a sustainable highway and transportation initiative called 'The Ray', the Ray of Hope Prize in partnership with The Biomimicry

Institute, the Drawdown Georgia initiative, the Georgia Climate Project, and the Global Change Program at Georgia Tech. He shares his late grandfather's passion for Earth and her natural systems, and he is the Author of *Mid-Course Correction Revisited*, an updated edition of his grandfather's first book.

Julio Lumbreras, PhD, Eng, MPA, is Associate Professor at the Technical University of Madrid (UPM) and Visiting Scientist at Harvard T.H. Chan School of Public Health, where he is the Instructor of the course 'Sustainable Cities'. He was a Member of the Board of the European Mission for 'Climate-neutral and smart cities'. He is now part of the Net Zero Cities consortium, and he is leading the multi-stakeholder platform for the implementation of the mission in Spain. He is Founding Associate Editor in the *Open Access Journal on Frontiers in Sustainable Cities*. He is Co-author of more than 80 papers and books on air quality, climate change, sustainable cities, and higher education. He Co-edited the 2020 SDSN guide *Accelerating Education for the SDGs in Universities*. He is passionate about increasing sustainability in higher education, turning universities into key agents to systemically transform cities towards sustainability.

Luz Patricia Montaño-Salinas' professional career has developed between Information Technology Management and Internationalization. During her 29 years at Tecnológico de Monterrey, she has collaborated in academics as well as in administrative posts, always related to the international development of the university. She obtained two Master's degrees, an MBA from EGADE Business School with specialization in Global e-Management and a Master in Information Technologies Management, both at Tecnológico de Monterrey. She has been a Speaker at several international conferences. As Director for International Innovation and Networks at Tecnológico de Monterrey, she is responsible for designing new formats for students' international experiences and new paths for the university's internationalization as well as university activities at consortia like Universitas21, APRU, ECIU, HUC, and CINDA, among other duties. She is currently a PhD student at University of Hull in the UK.

Ayushi Nahar hails from the Silicon Valley of India and is currently an undergraduate student pursuing her law degree at Jindal Global Law School, O.P. Jindal Global University, India. She aims to optimally use her legal education to empower herself, and by extension empower those who were not provided with similar opportunities. She has a strong foundational base in finance and investments. She was recently awarded the United Nations Millennium Fellowship for her work in the field of financial literacy. Within the law and justice segment, she assisted in organizing a panel meeting in collaboration with the Department of Justice, India that was aimed at brainstorming the integration of technology and AI in the justice domain. She is a Tech Law Geek and shares a keen penchant towards reading about work focused on the human DNA and gene editing. Additionally, she is a Professional Kathak Dancer who has performed at various national events, an Articulate Writer and Debater, a Researcher with experience, and an Avid Reader. She lives by the following quote from her favourite book, *All The Light We Cannot See* by Anthony Doerr – 'Open your eyes and see what you can with them before they close forever'.

Joanna Newman, MBE FRSA, is Chief Executive and Secretary General of the Association of Commonwealth Universities (ACU) – the world's oldest international network of universities, dedicated to building a better world through higher education. Through international collaboration, the ACU brings universities together to advance knowledge, promote understanding, broaden minds, and improve lives. The ACU champions higher education as a cornerstone of stronger societies, supporting its members, partners, and stakeholders as they adapt to a changing world. She represents the ACU on the United Nations Sustainable Development Solutions Network's Leadership Council and the High-level Advisory Group for Mission 4.7. She is a Lay Member of the Council of Cardiff University and sits on the Board of the Council for At-Risk Academics (CARA). Her previous roles included the Vice-Principal (International) at King's College London, Director of the UK Higher Education International Unit (now known as Universities UK International), and Head of Higher Education at the British Library. She is a Senior Research Fellow in History at King's College London.

Her most recent publication is *Nearly the New World: The British West Indies and the Flight From Nazism, 1933–1945*.

Michael Oxman is the Managing Director of the Ray C. Anderson Center for Sustainable Business and a Professor of the Practice who has worked in industry, nonprofits, government, and academia over the course of his career with a range of domestic and international engagements. In addition to work in political risk and financial valuations, he has spent much of his career focused on corporate sustainability and social license to operate in both the United States and across many international locations. At the Ray C. Anderson Center for Sustainable Business, he helps to lead (along with the Faculty Director and Center staff) a number of initiatives including the recently launched Drawdown Georgia Business Compact (focused on carbon reduction in Georgia through a just and sustainable transition). He also teaches a consulting-based practicum course with companies of all sizes that focuses on corporate sustainability topics while leveraging best practices in problem-solving approaches.

José Manuel Páez-Borrallo is Vice Rector for International Affairs at Tecnológico de Monterrey. Prior to that, he was Dean of the School of Telecommunications Engineering at Universidad Politécnica de Madrid (UPM), Vice President for International Relations, and President's Delegate at RCC in Harvard University. He has also been Visiting Professor at Universidade de Sao Paulo, as well as Visiting Senior Researcher at International Computer Science Institute (ICSI) and Berkeley Wireless Research Centre (BWRC) at University of California, Berkeley. He has worked in the private sector in Germany and has created and supported several start-ups. Among his contributions to internationalization in higher education, he led the creation of the permanent delegations of UPM abroad in China, USA, and Brazil, and was Founder, President, and current Honorary President of Magalhães Network.

Professor Maano Ramutsindela is Dean of the Faculty of Science at UCT and a Human Geographer. Having obtained his PhD in Geography as a Conon Collins Scholar from Royal Holloway,

University of London, he has received numerous awards, including South Africa's National Research Foundation (NRF) Award for the Transformation of the Science Cohort, the NRF President's Award, a Mandela Fellow of the W.E.B Du Bois Institute for African and African American Research (Harvard University), Distinguished Hubert H. Humphrey Visiting Chair at Macalester College, a Fellow of the Society of South African Geographers, and a Member of the Academy of Science of South Africa. He is the Founding Co-chair of the Worldwide Universities Network Global Africa Group. His research focuses on the intersection of society and nature, and this theme runs through his latest books: *The Violence of Conservation in Africa: State, Militarization and Alternatives* (co-edited with Matose & Mushonga, 2022) and the *Routledge Handbook of Development and Environment* (co-edited with McCusker, Ahmed, & Solís, 2022).

Roy Richards's professional experience has been in General Management and Board Leadership of companies and nonprofits. He began serving on corporate and NGO boards in his early 20's and took over his family's manufacturing company as CEO at age 28. He still chairs it today (southwire.com: $7B+ revenues and 6,000+ employees). His philanthropic work is focused on American ecology: He co-founded an environmental advocacy nonprofit to protect Georgia's coastal land and waters (onehundredmiles.org), started a venture fund for climate change communications initiatives in the southeastern USA (1earth.fund), and created a private fund to finance high priority land protection in the southeastern USA (terrahconservationcapital.com). He is an Adjunct Professor of the practice at the Georgia Tech Scheller College of Business and Co-chair of the Drawdown Georgia Leadership Council.

Nikhil Seth is the Executive Director of the United Nations Institute for Training and Research. Before this post in 2015, he was the Director of the Division for Sustainable Development, Department of Economic and Social Affairs (DESA) at the United Nations Secretariat. During his United Nation (UN) career, he has served as Special Assistant and Chief of Office to the Under-Secretary-General for Economic and Social Affairs, Chief of the Policy Coordination

Branch in the Division for ECOSOC Support and Coordination, Secretary of the Economic and Social Council (ECOSOC) and the Second Committee of the General Assembly, and Director of the DESA Office for ECOSOC Support and Coordination. Before joining the UN, he was a delegate to the UN in the Permanent Mission of India to the UN and a Member of the Indian Diplomatic Service. Prior to this, he worked as a Lecturer in Economics in St. Stephen College, Delhi University. He holds a Masters in Economics from Delhi University.

L. Beril Toktay is the Brady Family Chaired Professor of Operations Management, Regents' Professor, the Faculty Director of the Ray C. Anderson Center for Sustainable Business at the Georgia Tech Scheller College of Business, and the Interim Executive Director of the Brook Byers Institute for Sustainable Systems. A Distinguished Fellow of the INFORMS Manufacturing and Service Operations Management Society, her research focuses on sustainable operations and supply chain management. She has co-developed Award-winning Interdisciplinary Educational Programs such as Serve-Learn-Sustain, which offers students academic opportunities to advance sustainable communities, and the Carbon Reduction Challenge, a competition focused on empowering students to become part of the climate change solution. The Metro Atlanta Chamber of Commerce selected her as a 2019 E3 Impact Award Finalist, an award that recognizes 'visionary individuals advancing sustainability in Atlanta'.

Sam Vaghar is a Social Entrepreneur committed to helping young people use their voices and power to make a difference. With 15 years of impact Co-founding and Leading Millennium Campus Network (MCN), he has helped launch the Millennium Fellowship: a student movement for the UN Sustainable Development Goals at 200 campuses worldwide. He has given talks at over 100 institutions worldwide, including at Harvard University, MIT, the White House, the United Nations, the Vatican, and on speaking tours across four nations for the U.S. Department of State. He earned a Bachelor of Arts Degree from Brandeis University and a Master in Public Administration (MPA) degree from the Kennedy

School of Government at Harvard University. He has received two Honorary Degrees and also served as Commencement Speaker at Monmouth College in 2020. His work, writing, and contributions have been spotlighted by *The Boston Globe*, CNN, Fast Company, and more publications.

Summer Wyatt-Buchan has pursued studies in Climate Change and Sustainability with a focus on raising awareness of the need for climate action. She has worked through social movements and campaigns for corporate environmental accountability and a liveable future in her role as Director of Sustainability Analysts at Voiz Academy. She has also led 20 fellows in developing their own social impact initiatives through her role as Campus Director in the Millennium Fellowship 2021. She recently completed a Climate & Health Fellowship with Planet Reimagined where she co-authored a paper. She looks to be in a professional field whereby she can better ensure a wider contribution to meeting the United Nations Sustainable Development Goals. She is undertaking her MSc in Environment, Politics and Society at University College London (UCL).

HESDG17 SERIES EDITOR – PREFACE

Professor Wendy M. Purcell, PhD FRSA

Higher education (HE) is making an important contribution to delivery of the Sustainable Development Goals (SDGs). Through high quality teaching and learning, HE supports the development of responsible citizens as scholars, leaders, entrepreneurs, and professionals. Universities and colleges undertake socially impactful research to help find solutions for the world's most pressing issues. They are also active in civic and community settings as anchor institutions. Nevertheless, given the fierce urgency of (un)sustainable development, the climate crisis and widening inequity within countries and across the globe, HE needs to do more and go faster. For HE to deliver fully against the SDGs, it needs to adapt to this shared global agenda for transformative change.

This book series focuses on the role of HE in advancing the SDGs, identifying some successes to date and opportunities ahead. In sharing the ways and means universities and colleges across the world are engaging with the SDGs, the series seeks to both inspire and enable those in the HE sector and stakeholders beyond to channel their efforts towards solutions for the grand challenges represented by the global goals. Insights gleaned from relevant case studies, innovations, reflective accounts, and student stories can help the HE sector both deepen and accelerate its engagement with the SDGs. Each book seeks to capture ways HE is fulfilling its contribution to delivery of the goal at hand and its underlying targets. Illustrating the work of students, that undertaken by faculty and staff of the institution and conducted with others, positions HE as a change agent operating at a systems level to help to create a world that leaves no one behind.

Taking up this global challenge, SDG17 'Partnerships for the Goals' is a call for radical collaboration of HE with local, national,

and international actors. HE is well-suited to partnership working with those in health, business, and community settings. Bringing key assets of curiosity and the pursuit of truth to partners seeking solutions and driving innovation, universities and colleges operate in global knowledge networks. Helping realize human potential connects the worlds of learning and work and entrepreneurship in support of inclusive economic growth. As place-makers, HE institutions can use their convening power to draw stakeholders around a problem in support of the adaptive change needed to tackle the challenges of sustainable development.

This book on HE and SDG17 acknowledges the relative ease with which universities and colleges network with one another across the world, share their research findings, and support the aspirations of talented students and faculty. Academic freedom includes the opportunity to work without borders *within* the academy. However, working *beyond* HE with local and global stakeholders calls for new models of learning, research, leadership, and governance essential to the pursuit of the SDGs. The longer time horizons HE works across together with the regular refresh of its student body enables universities and colleges to withstand short-term political and business cycles. As such, HE can support the development of trustful relationship building necessary to support effective partnership working. The need for HE to deliver on its academic mission and share knowledge and learning, within the classroom and through the academic literature, demands transparency of purpose and outcomes in collaborative ventures. Together with shared place-based agenda for health of people, planet, and shared prosperity, HE can be both an effective partner and a vehicle for partnership. For example, climate action in cities brings a HE institution into relationship with civic and community leaders, with businesses and healthcare providers. So too, in communities transitioning from old world industries to the new world of the green economy, universities and colleges are central to the partnerships effecting a just transition.

This book is clear that without the full participation of HE, delivery of the SDGs will be materially compromised. But to sustain the current level of activity and pursue the deeper engagement

needed, HE itself needs to tackle the actual and perceived barriers to more fulsome and complex models of collaboration. From acknowledging the work involved in creating and sustaining a partnership in staff workload models and faculty portfolios for tenure, to more easily deploying students into community settings to work on social projects and crediting their work, HE needs to change its quantum of activity in this space. Indeed, as this book acknowledges, HE needs to reach out to all those who can benefit from what it offers and do so in a way that engages the public. Moving from an ivory tower model of a university or college to one that represents an institution connected to those it serves calls for more innovation in partnership models, recognizing many of those developed to date reinforce inequity and models of colonialism.

As noted in this book, the COVID-19 pandemic accelerated change within HE and advanced partnerships across the academy globally. Marshalling the intellectual, physical, and human assets of universities and colleges was central to vaccine development and healthcare delivery programs in community settings. As such, an important legacy of the pandemic is the new partnership assets developed within HE and relationship capital that can now be deployed to progress the SDGs with a renewed sense of urgency. From global classrooms to new public–private partnerships, this book shows that HE has the wherewithal to make a deeper and wider contribution to the goals and to do so at a pace demanded by the scale of the sustainable development challenges now and ahead. This relies on explicit strategic intention by HE institutions and being invitational to students, faculty, staff, and those in the wider stakeholder ecosystem.

This book highlights the enormous untapped potential for HE to create partnerships for the goals and in doing so advance the frontiers of knowledge that in turn drive up institutional reach and reputation. Immersive engagement with the SDGs can catalyze pedagogic innovation, serve to refresh curricula, and stimulate new program development. It can also open new avenues for research, attract new sources of funding, and energize people to deliver on the academic mission. Developing the next generation and creating the technology and insights to tackle the issues of social justice in our

communities, social impact work is the business of HE. It is clear that HE needs to be a full partner in partnerships for the goals – the task ahead is for HE to realize this mission. In adopting the SDGs, the academy can help create the conditions within and beyond the institution to deliver on the betterment of all humankind.

ACKNOWLEDGEMENTS

First and foremost, a monumental thank you to the authors in this book, for taking the time to share their insights with the broader higher education community and, most importantly, for their courageous leadership in steering our universities towards greater impact.

To Wendy and the team at Emerald – for cheering us on and guiding us – both were needed!

To our colleagues and friends at Georgia Tech – some of the most supportive, creative, and kindest colleagues we have known. And to our colleagues and friends in the University Global Coalition, who inspire us daily and encourage us to keep doing what we can to build a more inclusive and sustainable world.

Ángel thanks the many colleagues who have helped shape his thinking and inspired his actions, especially Prof. Tom Lovejoy, who passed away in 2021 after a long, productive and inspiring life committed to using science to build a better world. Drew thanks her mom Carol, sister Kyle, partner Daniel, and the friends she is lucky enough to consider family.

1

INTRODUCTION

Ángel Cabrera and Drew Cutright

> *The choice is not between wild places or people; it is between a rich or an impoverished existence for Man. (Thomas E. Lovejoy, 1941–2021)*

The riches tapped by the industrial revolution have come at a dear price. We live longer, healthier, safer lives than any prior generation. Yet the innovations that made this possible also originated a set of complex challenges which threaten major human harm if not the very viability of our way of life. Under the auspices of the United Nations (UN), governments from around the world have adopted a framework, the Sustainable Development Goals (SDGs), articulating a call to action for all sectors and nations to join forces to find an equitable, sustainable, and inclusive way forward that will lift the lives of all people without causing irreparable damage to the planet we inhabit.

Universities have the capacity to play a major role in this quest. Given the magnitude of the challenges we face, they should accept their responsibility to do their part. Universities educate the professionals, scientists, and decision-makers who shape all areas of human activity. They carry out research to understand the challenges we face, develop new technologies, and propose new solutions. Universities are also trusted convenors of other actors.

They frame problems and amplify ideas, influence the thinking of decision-makers, and bring multiple stakeholders to the table. The goal of this book is to explore how universities can most effectively use their convening power to form effective partnerships, among themselves and with other actors, to maximize their collective impact in bringing us closer to achieving the SDGs.

In discussing the urgent challenges articulated by the SDGs, it is important to acknowledge the incalculable benefits yielded by 200 years of technological innovation and commerce. Indeed, over the span of just 10 generations, humans experienced a leap in quality of life unlike any other period in history. We now live more than twice as long and are more than 10 times wealthier than our ancestors were at the dawn of the nineteenth century, while our population has grown by almost eightfold.

In the early nineteenth century, the average human had to make ends meet on the equivalent of $3 per day in today's money, compared to more than $40 today – and close to $150 in places like the USA, Canada, and Australia. Back then, not even the very wealthiest could buy necessities we now take for granted, such as life-saving medicines and vaccines. In Europe alone, before the advent of modern vaccines, half a million people may have died from smallpox every year, in addition to the countless others who went blind or suffered crippling long-term sequelae. Average life expectancy today has surpassed 70 years, having consistently hovered below 30 since our hunter-gatherer days, and through the Neolithic Age, until the onset of the Industrial Revolution.

Today, about 90% of males and more than 80% of females can read, compared to one in 10 people before the nineteenth century (World Economic Forum, 2022). A transatlantic flight today costs less than a fifth of a boat passage in the eighteenth century, which could last more than a month if it made it to the other end. Health, education, travel, leisure, entertainment, nutrition, culture, safety, every aspect of human life has been transformed in about two centuries. And while it took 300,000 years for humans to colonize the entire planet and reach our first billion, these new technologies propelled the human population to 6 billion by the end of the twentieth century. As we write this, the UN estimates that the world population has just crossed 8 billion.

This spectacular progress was not easy. The dramatic change in agriculture and manufacturing, urbanization, capital formation, and global trade caused deadly class struggles, economic and social inequality, revolution, violence, pollution, and destructive warfare on a scale never seen before.

At every step we (humans) were forced to find new solutions. We created new technologies that resolved deficiencies of earlier ones. We developed organizational models that made us more productive and work, less onerous. We experimented with political regimes as we found systems of government that did a better job spreading the newfound wealth and keeping us safer, healthier, and better educated. We created ever more sophisticated systems of mutual support like private insurance and public social security, welfare, and health care. We created international alliances and new systems of global trade and finance, cooperation, and conflict resolution. We cleaned up cities and rivers and curbed air pollution.

Yet the magnitude of our population growth, the speed of change, and our insatiable thirst for natural resources outpaced our capacity to adapt and our planet's ability to regenerate. It also exacerbated inequality between and within nations. Because of accidents of geography and history, the new technologies and trade relations benefitted and empowered some more than others. And while the environmental issues that were created affected all, the wealthy were relatively better protected to withstand the damage; those who benefitted the least became the most vulnerable.

According to the IMF's 2022 World Inequality Report, the poorer half of the world's adults today have a net worth of about 2,900 euros (in purchasing power parity terms) and earn 8.5% of all available income, while the richest 10% are 190 times wealthier and earn more than half of all world income (International Monetary Fund, 2022). The UN estimates that about 1 billion people live in slums or informal settlements – mostly in Asia and sub-Saharan Africa – thus facing debilitating health and safety risks and barriers of access to economic opportunity and education. In our own city of Atlanta – a modern, thriving transportation, commerce, and technology hub in the one of the wealthiest nations in the world – the poorest 20% households live on less than $10,000 per year, while the richest 20% makes more than $255,000.

The industrial revolution that produced so much wealth and progress was powered by abundant and cheap energy in the form of fossil fuels. As we would eventually learn, however, the CO_2 that is pumped into the atmosphere from combusting fossil fuels is excellent at retaining infrared radiation and therefore increasing the average temperature of our planet. Higher average temperatures mean smaller icecaps and glaciers, higher sea levels that threaten human coastal settlements, and changes in climate patterns that affect the availability of fresh water, increase the frequency of fires and destructive storms, disturb agriculture and fisheries, and accelerate the destruction of biological diversity. Meanwhile, growing demand for food by a larger and wealthier population pushes deforestation to make room for crops and pastures, thus debilitating the capacity of our forests to absorb CO_2 and accentuating global warming. Overfishing and deforestation, coupled with higher average temperatures and the acidification of oceans, further disturbs the balance of ecosystems on land and under water and destroys biological diversity.

Not all humans contributed equally to this problem. Wealthy countries are responsible for most of the world's historical carbon emissions. Even today, the richest 1% owns 38% of global wealth, makes 19% of all global income, and is responsible for 17% of CO_2 emissions (International Monetary Fund, 2022). The average American today is about 32 times wealthier than the average Nigerian, consumes 84 times more electricity, and emits 27 times more CO_2. Because we all share the same atmosphere, oceans, and climate systems, both rich and poor suffer the consequences of these externalities. Yet it is becoming increasingly evident that poorer nations, and poorer areas within wealthier nations, are more vulnerable than those who benefitted the most and contributed the most to the problem.

As we write this, world leaders are gathered in Egypt for the 27th UN climate change conference (COP27). Six years ago, the same world leaders agreed in Paris to do everything possible to keep average world temperatures within 1.5° of pre-industrial levels. To achieve that goal, carbon emissions would need to be cut in half by 2030. Yet emissions have so far gone up, not down, and it seems increasingly clear that we will miss the Paris target.

According to the UN Intergovernmental Panel on Climate Change (IPCC), the difference between 1.5° and 2° could mean hundreds of millions more lives and livelihoods upended by higher seas. The most vulnerable countries now demand so-called 'loss and damage' compensation from industrialized countries for the harm they have caused – a Tragedy of the Commons of global proportions.

That is the conundrum that our species faces. How to continue to drive economic prosperity and human development for everyone without depleting the regenerative capacity of our planet or heating it up beyond repair.

In 2015, the United Nations General Assembly adopted the SDGs as a shared framework for collective action that recognizes the severity and urgency of the situation and the complexity of the solutions that will be required. The framework is structured around 17 broadly defined Global Goals that highlight both the multidimensionality of the challenges that we face as well as the underlying interdependencies.

The SDGs pledge to end poverty and hunger, improve health and education, and reduce inequality, especially in places and communities that have been left behind. That will require that we incorporate more people into the modern economy, that we drive economic growth while reducing carbon emissions, and that we grow in a way that safeguards the health of land and marine ecosystems.

Dividing this complex web of objectives and interdependences into 17 discrete goals (or any other number for that matter) is a thankless and somewhat arbitrary exercise. There are many ways to dissect, group, and label the challenges we face, each approach highlighting specific angles and causal links at the expense of making others less obvious. Yet, by agreeing on a specific framework and then developing concrete metrics and targets around it, we develop a shared language, we increase transparency and accountability, we inspire action, we track progress more effectively, and we make it easier to align efforts by different actors in different geographies.

This last benefit of the SDGs is critical. Sustainable development is multidimensional, multidisciplinary, multistakeholder, and multinational. It requires not only a multitude of efforts by a multitude of actors, but that those actors coordinate efforts and complement one another. In other words, partnerships are essential in achieving

the goals, and that is why one of the 17 goals, SDG17, is dedicated precisely to forming partnerships for development.

Because we're locked-in by decades of capital and human investment, of path-dependent institutional arrangements around fossil fuels – combustion and jet engines, roads and railroads, ports and airports, gas stations, coal plants – solutions require not only new technologies but new capabilities, policies, business models, and market incentives (Unruh, 2000). Because energy and food markets, our atmosphere, our oceans, our rivers, and our climate are shared across national boundaries, any intervention will need to be coordinated globally. And because any global change will carry uneven effects to people in different geographies and circumstances, issues of human development and economic opportunity need to be addressed simultaneously.

To achieve viable solutions, we need scientists and engineers galore. But also responsible business leaders, entrepreneurs working on new solutions at the local level, and multinationals willing to change the way they do business at large scale. We need local, regional, and national policy-makers, financial institutions that distribute cost and risk effectively, diplomats who can craft new cooperative arrangements, non-governmental organizations filling the gaps markets cannot reach, and communicators and educators who inspire and empower all of us to do our part.

SDG17 highlights the need for partnerships that bridge sectors, stakeholders, disciplines, and national interests, that allow professionals to collaborate and solutions to spread. More specifically, SDG17 calls for partnerships of various types: multistakeholder partnerships around voluntary commitments, global trade arrangements that liberalize trade and bring the benefits of commerce to more markets in an environmentally responsible way, partnerships to provide new models of financing for development, partnerships to advance scientific data and develop new research capabilities, partnerships to develop technical capabilities where needed, to advance and spread technology.

When we combine these two requirements for achieving the Global Goals, the need for new skills and attitudes among professionals and decision-makers, with the need to form effective partnerships, the role of universities becomes evident.

Universities, by their very nature, educate professionals in all areas of human endeavour. They train scientists and engineers, business and policy leaders, teachers and communicators, innovators, problem solvers, and critical thinkers. According to the World Bank, 40% of the college aged population around the world is enrolled in college (though the numbers dip to single digits in sub-Saharan Africa and other low-income countries) (World Bank, 2022). If we have any hope that new generations of professionals understand the urgency of the SDGs, develop the capabilities and attitudes necessary to address them, and accept their own personal responsibility, universities need to make it a priority to embed the SDGs into their mission, their curriculum, and their ethos.

Some universities also discharge important responsibilities in the area of research. In the United States, for example, universities spent $86 billion in 2020 in research and development according to the National Science Foundation (2022). This accounts for about 12% of total R&D expenditures in the country, and more than the 9% of the research conducted directly by government research centres. While the business sector is responsible for about three quarters of the national research enterprise, their focus on commercially viable solutions leaves the bulk of basic scientific research in the hand of our universities. If we have any chance at identifying new breakthroughs in sustainable energy production, storage and distribution, sustainable agriculture, environmental protection, infectious diseases, and other areas central to human development, it is of paramount importance that universities align their research enterprises with the challenges articulated by the SDGs.

Lastly, universities are natural convenors of other actors and stakeholders. They strive to create multidisciplinary environments that are driven by curiosity and the exchange of knowledge, are welcoming of dissent and informed debate, and are therefore uniquely suited to act as trusted convenors of other actors.

Universities have unfortunately been slow to accept their institutional responsibility to take part in the global effort towards sustainable development. During the last global development framework, the so-called Millennium Development Goals (2000–2015), the institutional engagement of universities was modest at best. While individual faculty members played important roles as

experts and thought leaders, universities rarely adopted the framework institutionally, and their voice was seldom heard at global gatherings.

There are promising signs that things may be improving. A good example is the Principles of Responsible Management Education (PRME), established in 2007. Working as a Senior Advisor to the UN Global Compact, one of us, Ángel Cabrera, at the time President of the Thunderbird School of Global Management, chaired a Global Committee of Business Educators that drafted six principles now endorsed by hundreds of institutions worldwide. The principles committed signatory schools to incorporate global citizenship and responsibility in teaching, curriculum design, and research, to play an active role in convening other actors, and to partner with one another. With support from leading business school accrediting bodies (most notably AACSB and EFMD) and other organizations, PRME now has chapters around the world, organizes events to share best practices, supports the exchange of resources, and publicizes the progress being made.

During the 2012 UN Conference on Sustainable Development in Brazil (Rio+20), PRME partnered with UN DESA and other UN organizations to launch the Higher Education Sustainability Initiative (HESI). HESI organizes an annual High Level Political Forum focused on the role of universities in achieving sustainable development and offers tools like Sulitest to promote sustainability literacy around the world.

Also in 2012, Columbia University Professor Jeffrey Sachs, in partnership with the UN Secretary General, launched the Sustainable Development Solutions Network (SDSN), a non-profit organization with a membership of more than 1,700 institutions organized in 50 networks across 144 countries that fosters knowledge generation and exchange, offers open-access learning materials, data and reports, and promotes solutions to advance the SDGs (UN-SDSN, *About*). One of this volume's chapters discusses high-level learnings from the work of SDSN and explores the idea of applying systems thinking to approaching the SDGs in higher education.

Other existing global networks of universities have explicitly adopted the SDGs and are creating spaces of collaboration. As