

INTEGRATING **SDGs** AND EDUCATIONAL OUTCOMES IN HIGHER EDUCATION



Editors:

Rimple Manchanda

Priya Jindal

Naseem Abidi

Bentham Books

Integrating SDGs and Educational Outcomes in Higher Education

Edited by

Rimple Manchanda

*Pearl School of Business
Pearl Academy
Delhi South, India*

Priya Jindal

*Chitkara Business School
Chitkara University
Punjab, India*

&

Naseem Abidi

*School of Business
Horizon University College
Ajman, United Arab Emirates*

Integrating SDGs and Educational Outcomes in Higher Education

Editors: Rimple Manchanda, Priya Jindal & Naseem Abidi

ISBN (Online): 979-8-89881-699-5

ISBN (Print): 979-8-89881-700-8

ISBN (Paperback): 979-8-89881-701-5

© 2026, Bentham Books imprint.

Published by Bentham Science Publishers Pte. Ltd. Singapore, in collaboration with Eureka Conferences, USA. All Rights Reserved

First published in 2026.

BENTHAM SCIENCE PUBLISHERS LTD.

End User License Agreement (for non-institutional, personal use)

This is an agreement between you and Bentham Science Publishers Ltd. Please read this License Agreement carefully before using the ebook/echapter/ejournal (“**Work**”). Your use of the Work constitutes your agreement to the terms and conditions set forth in this License Agreement. If you do not agree to these terms and conditions then you should not use the Work.

Bentham Science Publishers agrees to grant you a non-exclusive, non-transferable limited license to use the Work subject to and in accordance with the following terms and conditions. This License Agreement is for non-library, personal use only. For a library / institutional / multi user license in respect of the Work, please contact: permission@benthamscience.org.

Usage Rules:

1. All rights reserved: The Work is the subject of copyright and Bentham Science Publishers either owns the Work (and the copyright in it) or is licensed to distribute the Work. You shall not copy, reproduce, modify, remove, delete, augment, add to, publish, transmit, sell, resell, create derivative works from, or in any way exploit the Work or make the Work available for others to do any of the same, in any form or by any means, in whole or in part, in each case without the prior written permission of Bentham Science Publishers, unless stated otherwise in this License Agreement.
2. You may download a copy of the Work on one occasion to one personal computer (including tablet, laptop, desktop, or other such devices). You may make one back-up copy of the Work to avoid losing it.
3. The unauthorised use or distribution of copyrighted or other proprietary content is illegal and could subject you to liability for substantial money damages. You will be liable for any damage resulting from your misuse of the Work or any violation of this License Agreement, including any infringement by you of copyrights or proprietary rights.

Disclaimer:

Bentham Science Publishers does not guarantee that the information in the Work is error-free, or warrant that it will meet your requirements or that access to the Work will be uninterrupted or error-free. The Work is provided "as is" without warranty of any kind, either express or implied or statutory, including, without limitation, implied warranties of merchantability and fitness for a particular purpose. The entire risk as to the results and performance of the Work is assumed by you. No responsibility is assumed by Bentham Science Publishers, its staff, editors and/or authors for any injury and/or damage to persons or property as a matter of products liability, negligence or otherwise, or from any use or operation of any methods, products instruction, advertisements or ideas contained in the Work.

Limitation of Liability:

In no event will Bentham Science Publishers, its staff, editors and/or authors, be liable for any damages, including, without limitation, special, incidental and/or consequential damages and/or damages for lost data and/or profits arising out of (whether directly or indirectly) the use or inability to use the Work. The entire liability of Bentham Science Publishers shall be limited to the amount actually paid by you for the Work.

General:

1. Any dispute or claim arising out of or in connection with this License Agreement or the Work (including non-contractual disputes or claims) will be governed by and construed in accordance with the laws of Singapore. Each party agrees that the courts of the state of Singapore shall have exclusive jurisdiction to settle any dispute or claim arising out of or in connection with this License Agreement or the Work (including non-contractual disputes or claims).
2. Your rights under this License Agreement will automatically terminate without notice and without the

need for a court order if at any point you breach any terms of this License Agreement. In no event will any delay or failure by Bentham Science Publishers in enforcing your compliance with this License Agreement constitute a waiver of any of its rights.

3. You acknowledge that you have read this License Agreement, and agree to be bound by its terms and conditions. To the extent that any other terms and conditions presented on any website of Bentham Science Publishers conflict with, or are inconsistent with, the terms and conditions set out in this License Agreement, you acknowledge that the terms and conditions set out in this License Agreement shall prevail.

Bentham Science Publishers Pte. Ltd.

No. 9 Raffles Place

Office No. 26-01

Singapore 048619

Singapore

Email: subscriptions@benthamscience.net



CONTENTS

FOREWORD	i
PREFACE	iii
LIST OF CONTRIBUTORS	v
CHAPTER 1 ROLE OF HIGHER EDUCATION INSTITUTIONS IN SUSTAINABLE DEVELOPMENT	1
<i>B. Usha Shree Rathod and Muddasani Rajya Laxmi</i>	
INTRODUCTION	1
Objectives	2
Key Elements	3
<i>Innovation</i>	3
<i>Inclusivity</i>	3
<i>Globalization</i>	4
Sustainable Development Through a Global Lens	4
<i>Evolution of Sustainable Prosperity</i>	4
HIGHER EDUCATION IN THE GLOBAL SUSTAINABILITY OUTLINE	5
Importance of Sustainability Education	5
Integrating Sustainability into Education	6
Sustainability-focused Courses	7
Incorporation of Sustainability into Academic Plan	7
Multidisciplinary Programs	7
Experiential and Project-Based Learning	8
Challenges of Integrating Sustainability into the Curriculum	8
<i>Resistance to Change</i>	9
<i>Curriculum Overload</i>	9
<i>Limited Faculty Expertise</i>	9
<i>Institutional Commitment</i>	9
SUSTAINABLE INNOVATION AND KNOWLEDGE CREATION THROUGH RESEARCH	9
Significance of Research on Sustainable Resolutions	9
Technology in Sustainable Development	10
<i>Clean Energy and Carbon Mitigation Technology</i>	10
<i>Tech-driven Agriculture and Food Systems</i>	10
<i>Urban Planning and Green Infrastructure</i>	11
<i>Water Purification and Waste Management Technologies</i>	11
Multidimensional Research for Complex Sustainability Challenges	11
Community Engagement for Sustainable Transition	12
FUTURE OF SUSTAINABLE EDUCATION IN HEIS	13
Digital Learning and Sustainability	14
Industry and Government Collaboration	14
Global Networks for Sustainability Learning	14
Global Concepts for Sustainable Education	14
CONCLUSION	14
AUTHORS' CONTRIBUTIONS	15
CONSENT FOR PUBLICATION	15
ACKNOWLEDGEMENTS	15
REFERENCES	15

CHAPTER 2 EMPOWERING SUSTAINABILITY: THE IMPACT OF HIGHER EDUCATION ON SUSTAINABLE DEVELOPMENT GOALS	18
<i>Prisca F. Kimaryo</i>	
INTRODUCTION	19
Sustainable Development Goal 4 (SDG4): Quality Education	19
Strategies to Achieve Quality Education	20
<i>Digital Technology</i>	20
<i>Competency-Based Education and Training</i>	21
Competency-based Education in Rwanda	21
Competency-based Education in Tanzania	21
Competency-based Education in Kenya	22
Inputs Process Outputs	23
CBET Implementation Challenges	24
Inclusive Education	24
Factors Influencing Education Inclusion in HEIs	25
<i>Inclusive Curriculum</i>	25
<i>Inclusive Learning Environment</i>	26
<i>Inclusive Policy</i>	26
<i>Facilitators' Knowledge on Students' Needs</i>	26
Students with Special Needs Inclusion	27
Improving Educational Standards in HEIs	27
Sustainable Development Goal 5 (SDG5): Gender Equality	28
<i>Gender Inequality</i>	28
<i>Sexual Harassment in HEIs</i>	29
<i>Intervention towards Gender Equality and Sexual Harassment in HEIs</i>	30
CONCLUSION	30
REFERENCES	31
CHAPTER 3 CATALYSTS FOR CHANGE: HOW HIGHER EDUCATION INSTITUTIONS CONTRIBUTE TO SUSTAINABLE DEVELOPMENT	34
<i>Ghousia Jabeen and Muddasani Rajya Laxmi</i>	
INTRODUCTION	34
Importance of Higher Education in SDGs	35
Global Context and Need for Sustainability in Education	35
OBJECTIVES	37
HEIS AND THE CONCEPT OF SUSTAINABILITY	37
Integrating SDGs into Higher Education: Strategies for Implementation	38
Evolution of Sustainability Frameworks in Academia	38
Curriculum Development for Sustainability	39
Challenges in Embedding SD in Curricula	39
SUSTAINABLE PRACTICES WITHIN HEIS AND THEIR PARTNERSHIPS WITH INDUSTRIES, GOVERNMENTS, AND COMMUNITIES	41
Investigation and Innovation for SD	41
Collaboration with Industries and Government on Sustainability Projects	41
BARRIERS AND CHALLENGES: THE NEED FOR HEIS TO IMPLEMENT SUSTAINABLE DEVELOPMENT INITIATIVES AND STRATEGIES	42
Barriers to Executing Sustainability in Higher Education	42
<i>Human Resources</i>	43
<i>Financial Aspects</i>	44
<i>Governance</i>	45
<i>Institutional Factors</i>	46

<i>Social Considerations</i>	47
<i>Communication</i>	47
CONCLUSION	49
AUTHORS' CONTRIBUTIONS	49
CONSENT FOR PUBLICATION	49
CONFLICT OF INTEREST	50
ACKNOWLEDGEMENT	50
REFERENCES	50
CHAPTER 4 ANTECEDENTS, DECISIONS, AND OUTCOMES OF TECHNICAL VOCATIONAL EDUCATION AND TRAINING IN THE UAE	53
<i>Tajwar Hussaini and Nilofer Hussaini</i>	
INTRODUCTION	53
Understanding the Sustainable Development Goals with their Relevance in Higher Education	53
Meaning of Technical Vocational Education and Training	54
Features of Technical and Vocational Education and Training	54
TVET within Higher Education	55
EMERGENCE OF TVET IN MENA REGION	57
Key Highlights of the Progress of Technical Education in the MENA Region	58
Growth of TVET in the MENA Region	58
THE EVOLUTION OF VOCATIONAL EDUCATION IN UAE REGION	60
IDENTIFYING THE ANTECEDENTS, DECISIONS, AND EFFECTS OF VOCATIONAL AND EDUCATIONAL TRAINING IN THE UAE	61
Antecedents of TVET in the UAE region	62
<i>Affordability</i>	62
<i>Awareness</i>	62
<i>Advertising</i>	62
<i>Leadership Quality</i>	62
<i>Representation in Education System</i>	62
<i>Selection</i>	63
<i>Content</i>	63
<i>Industrial Connect</i>	63
Conceptual Dimensions of TVET	63
Outcomes of TVET in the UAE Region	64
CONCLUSION	65
CONSENT FOR PUBLICATION	66
CONFLICT OF INTEREST	66
ACKNOWLEDGMENT	66
REFERENCES	66
CHAPTER 5 EFFECTIVE ENVIRONMENTAL EDUCATION: A MULTISTAKEHOLDER INVESTIGATION OF FACILITATORS AND BARRIERS TO SWEDISH EDUCATION1	69
<i>Anika Sjöberg</i>	
INTRODUCTION	70
RESEARCH DESIGN	71
RESULTS AND ANALYSIS	74
Surveys	74
Policy Documents	74
Effective EE Indicators	75
<i>Outcomes: Knowledge and Understanding</i>	75
<i>Outcomes: Skills and Abilities</i>	76

<i>Outcomes: Utility</i>	80
DISCUSSION	81
CONCLUSION	83
CONSENT FOR PUBLICATION	83
CONFLICT OF INTEREST	83
ACKNOWLEDGEMENTS	83
DISCLOSURE	83
NOTE	84
REFERENCES	84
CHAPTER 6 INTEGRATING INDIAN KNOWLEDGE SYSTEMS FOR ACHIEVING SUSTAINABLE DEVELOPMENT GOALS IN HIGHER EDUCATION: A POLICY PERSPECTIVE	86
<i>Sima Mahato and Subhankar Ghosh</i>	
INTRODUCTION	86
IKS and Learning Domains	87
Historical Backdrop of IKS in Education	88
<i>Evolution of IKS</i>	89
IKS and SDGs	96
<i>Synergy between IKS and SDGs</i>	97
SDGs in Higher Education	100
<i>Initiation for Promoting SDGs in HEIs</i>	101
CONCLUDING REMARKS	107
CONSENT FOR PUBLICATION	108
CONFLICT OF INTEREST	108
ACKNOWLEDGMENT	108
REFERENCES	108
CHAPTER 7 EMERGING ISSUES IN LOCAL AND GLOBAL STUDIES: A COMPARATIVE ANALYSIS OF SUSTAINABLE DEVELOPMENT GOALS	112
<i>Monu Bhardwaj, Namrata Prakash, Priya Jindal and Rupa Khanna Malhotra</i>	
INTRODUCTION	113
Sustainable Development Goals and Comparative Studies	113
THEORETICAL FRAMEWORKS FOR COMPARATIVE ANALYSIS OF SDGS	114
METHODOLOGIES IN COMPARATIVE STUDIES OF SDGS	115
LOCAL VERSUS GLOBAL PERSPECTIVES ON SDGS	116
ECONOMIC DIMENSIONS OF SDGS	117
SOCIAL AND CULTURAL IMPLICATIONS OF SDGS	118
ENVIRONMENTAL CONSIDERATIONS IN ACHIEVING SDGS	119
TECHNOLOGICAL INNOVATIONS AND SDGS	119
GENDER EQUALITY AND INCLUSIVITY IN SDG IMPLEMENTATION	120
GOVERNANCE AND POLICY IMPLICATIONS FOR SDG IMPLEMENTATION	120
CASE STUDIES: SUCCESSFUL IMPLEMENTATIONS OF SDGS AT LOCAL AND GLOBAL LEVELS	121
CHALLENGES AND BARRIERS TO ACHIEVING SDGS	122
CONCLUSION	123
FUTURE DIRECTIONS IN COMPARATIVE STUDIES OF SDGS	124
REFERENCES	125
CHAPTER 8 TRANSFORMING HIGHER EDUCATION: OPPORTUNITIES, CHALLENGES, AND SUCCESS STORIES IN SDG INTEGRATION FOR A SUSTAINABLE FUTURE	127

<i>Vijay Prakash Gupta, Pradeep Kumar Mishra, Ronak R. Modi and Santosh Kumar</i>	
INTRODUCTION	128
Role of Higher Education Institutions in Global Sustainability	128
Significance of Integrating the SDGs into Higher Education	129
<i>Critical Thinking</i>	130
<i>Problem-Solving</i>	130
<i>Leadership Development</i>	130
<i>Benchmark for Other Sectors</i>	130
<i>Knowledge, Skills, and Mindsets for SD</i>	131
<i>Collaboration and Partnerships</i>	131
<i>Examples of Integrating SDGs into the Higher Education System</i>	131
ROLE OF HEIS IN ADVANCING THE SDGS	131
Creating Future Leaders and Professionals	131
Investigation and Advancement Find Efficient and Sustainable Responses	132
Partnerships and Cross-Sectoral Leadership	132
Ensuring Rights of Persons with Disabilities and Enhancing Fairness and Non-Discrimination	132
Creating Sustainable Campuses and Communities	133
Empowering Lifelong Learning and Capacity Building	133
OPPORTUNITIES FOR SDG INTEGRATION IN HIGHER EDUCATION	133
Aligning Academic Programs with SDGs	133
<i>Research and Innovation for SD</i>	134
<i>Campus Sustainability and Environmental Stewardship</i>	134
<i>Community Outreach and Social Sensitivity</i>	134
CHALLENGES IN SDG INTEGRATION IN HEIS	134
Institutional Barriers to SDG Adoption	134
Resource Constraints: Funding and Infrastructure	134
Resistance to Change: Organizational and Cultural Challenges	135
Measuring and Assessing SDG Impact	135
STRATEGIES FOR EMBEDDING SDGS INTO HIGHER EDUCATION	135
Interdisciplinary Learning	135
Experiential Learning	136
Leveraging Technology for SDG Implementation	136
Online Learning and Global Access	136
University Networks and Partnerships	136
ADDRESSING RESOURCE AND INSTITUTIONAL HURDLES	137
Strategies for Overcoming Funding and Resource Shortages	137
<i>Diversifying Funding Sources</i>	137
<i>Developing Public-Private Partnerships</i>	137
<i>Cost-Efficiency and Resource Optimization</i>	138
Leadership and Institutional Commitment to SDGs	138
Policy Advocacy and Government Support	139
Capacity Building and Professional Development for SDG Integration	140
EMERGING TRENDS AND INNOVATIONS IN SUSTAINABLE EDUCATION	141
Key Trends Shaping Sustainable Education	141
<i>Interdisciplinary and Transdisciplinary Education</i>	141
<i>Digital and Online Learning Platforms</i>	141
<i>Experiential Learning and Community-Based Projects</i>	142
<i>Sustainability Literacy and Global Citizenship</i>	142
Green Certifications and Recognition Programs	142
THEMATIC STRUCTURE FOR SUCCESS STORIES IN SDG INTEGRATION	142

Vision and Leadership	142
Campus Sustainability Practices	143
CONCLUSION	144
Critical Findings	144
Policy Implications	145
Social Implications	146
CONFLICT OF INTEREST	147
ACKNOWLEDGMENT	147
REFERENCES	147
CHAPTER 9 BARRIERS TO SUSTAINABLE DEVELOPMENT GOALS INTEGRATION IN HIGHER EDUCATION: A SURVEY-BASED STUDY IN SOUTH INDIA	148
<i>N. Ramu and Sathya Thangavel</i>	
INTRODUCTION	148
SAMPLE AND LIMITATIONS OF THE STUDY	150
HYPOTHESES	150
METHODOLOGY	150
BARRIERS TO INTEGRATION OF SDGS INTO CURRICULUM	150
DATA ANALYSIS	151
FINDINGS	152
FUTURE RESEARCH POTENTIAL	152
CONCLUSION	152
REFERENCES	153
CHAPTER 10 FOSTERING STAKEHOLDER ENGAGEMENT FOR SUSTAINABLE HIGHER EDUCATION INSTITUTIONS: CHALLENGES AND PATHWAYS	154
<i>Charu Vaish and Lata Bajpai Singh</i>	
INTRODUCTION	154
INTEGRATING SUSTAINABILITY INTO HEIS: THEORETICAL FRAMEWORKS AND ASSESSMENT TOOLS	157
ROLE OF SUSTAINABILITY AND STAKEHOLDER ENGAGEMENT IN HEIS	158
Case Study 1: Amrita Vishwa Vidyapeetham's Live-in-Labs VR	162
Case Study 2: Student Nirbhar-Sree Kutumbh (Marketplace Experience Lab), Jain University	163
CHALLENGES IN FOSTERING STAKEHOLDER ENGAGEMENT FOR SUSTAINABILITY IN HEIS	164
PATHWAYS TO FOSTERING STAKEHOLDER ENGAGEMENT FOR SUSTAINABLE HEIS	165
CONCLUSION	167
REFERENCES	168
CHAPTER 11 GREEN PRACTICES ADOPTED BY HIGHER EDUCATION INSTITUTIONS FOR CAMPUS' ENVIRONMENTAL SUSTAINABILITY	174
<i>Neha Gautam and Lata Bajpai Singh</i>	
INTRODUCTION	174
RESEARCH OBJECTIVES	176
SIGNIFICANCE OF THE STUDY	176
METHODOLOGY	176
Research Design	176
REVIEW	177
SDGs	177
Environmental Sustainability in HEIs	177

HEIs' Strategy for Energy Management	179
HEIs' Strategy for Water Management and Rainwater Harvesting	180
HEIs' Strategy for Waste Reduction and Waste Management	180
Contribution of HEIs to CF Reduction and Transportation Management	181
Implementation of Green Practices in Campus Operations by HEIs	181
DISCUSSION	185
LIMITATIONS AND FUTURE DIRECTIONS	187
CONCLUSION	187
ACKNOWLEDGEMENTS	188
REFERENCES	188
CHAPTER 12 HIGHER EDUCATION INSTITUTION POLICIES AND CLIMATE CHANGE RESPONSE IN MOZAMBIQUE: AN ALIGNMENT WITH SDGS	192
<i>Herieta Massango, Malaquias Zildo António Tsambe and Patrício Vitorino Langa</i>	
INTRODUCTION	193
THEORETICAL PERSPECTIVE	194
Higher Education Policy, Sustainable Development, and Climate Change in Mozambique	195
METHODOLOGY	196
Data Source and Analysis Procedure	197
RESULTS AND DISCUSSION	199
Integration of SDGs in Mozambique's Higher Education Policy	199
Mozambique Higher Education and Climate Action	201
<i>Regional distribution of Climate Action by Higher Education Institutions</i>	202
CONCLUSION	204
ACKNOWLEDGMENTS	205
REFERENCES	205
CHAPTER 13 UNDERSTANDING THE SUSTAINABLE BEST PRACTICE INITIATIVES: A CASE STUDY ON THE UNIVERSITY OF KERALA CAMPUS	208
<i>U. Revathi and S.R. Sheeja</i>	
INTRODUCTION	208
Methodology	210
University of Kerala: A Profile	210
Sustainable Best Practice Initiatives at the University of Kerala Campus	211
<i>Site Planning and Management</i>	211
<i>Sustainable Transportation</i>	214
<i>Water Conservation and Management</i>	215
<i>Energy Efficiency</i>	216
<i>Health and Well-being</i>	216
<i>Sustainable Maintenance and Operations</i>	217
<i>Waste Management</i>	218
DISCUSSION AND CONCLUSION	219
SUPPLEMENTARY MATERIALS	221
REFERENCES	223
CHAPTER 14 SUSTAINABILITY LEADERSHIP IN THE CONTEXT OF EDUCATION FOR SUSTAINABLE DEVELOPMENT IN HIGHER EDUCATIONAL INSTITUTIONS	225
<i>Bhumika Chavda, Rajasshrie Pillai and Choden Goperma</i>	
INTRODUCTION	225
Standpoint of Higher Educational Institutions	226
TRAVERSING THE PATH OF SUSTAINABILITY LEADERSHIP	227
Glimpse into Education for Sustainable Development	228

INITIATING THE BANDWAGON OR JOINING ONE? SUSTAINABILITY	
LEADERSHIP IN HEIS	229
The Youth Angle	231
TYING LEARNING, SUSTAINABILITY, AND LEADERSHIP TOGETHER-	
EDUCATION FOR SUSTAINABLE DEVELOPMENT (ESD)	233
MEANDERING THROUGH THE CHALLENGES	236
CONCLUSION	237
REFERENCES	237
APPENDICES	241
APPENDIX A	241
General Assessment	241
Content-based	241
<i>Knowledge (environmental literacy)</i>	241
Skill building	242
Organization-Based	242
Instructional Effectiveness	242
Usefulness	243
<i>Attitudes/Behaviours/Lifestyle Impacts</i>	243
Ethical/moral/value changes	243
Personal connection	243
STUDENTS	244
TEACHERS	244
COURSE COORDINATORS	244
PROGRAM DIRECTOR	245
PROGRAM BOARD MEMBER	245
SUBJECT INDEX	246

FOREWORD

I would like to congratulate all three eminent editors Professor Rimple Manchanda, Dr Priya Jindal and Professor Naseem Abidi; for presenting an important and influential publication of time “Integrating SDGs and Educational Outcomes in Higher Education Institutions”, which is indeed a significant contribution to bringing the impactful positive change globally, making life more easy, through the education sector interventions.

The purpose of this book is to explore and demonstrate how integrating the United Nations (UN) Sustainable Development Goals (SDGs) with educational outcomes can enhance the efficiency of Higher Education Institutions (HEIs). This book covers various topics, including best practices in sustainability integration, educational frameworks, and the influence of global initiatives like the Impact Ranking on promoting SDG-aligned transformations within academic institutions.

While several works have been published on integrating SDGs into higher education, this book aims to systematize these contributions and provide a comprehensive guide for HEIs. This book explores the essential role that higher education plays in preparing future generations to effectively navigate and address the complexities of sustainability challenges. By integrating the SDGs into their curricula, research, leadership, operations, administration, and engagement activities, HEIs can contribute significantly to achieving these Global Goals by 2030. Through detailed analyses, case studies, and strategic recommendations, this book aims to serve as a valuable resource for educators, administrators, policymakers, and researchers committed to fostering sustainability through higher education.

This book provides a broad and comprehensive exploration of how HEIs can integrate the UN SDGs into their various functions. This includes strategies for embedding SDGs within the curriculum across diverse disciplines, promoting research that addresses SDG challenges, and encouraging collaborative and cross-disciplinary research initiatives. It also examines the integration of SDGs into institutional policies and strategic plans, enhancement of a campus-wide commitment to sustainability, and implementation of sustainable practices in campus operations such as energy use, waste management, and procurement. Through case studies of green campus initiatives and their impact, the book illustrates successful sustainability practices. Additionally, it looks into the role of HEIs in local and global community development through extension programs and community partnerships. The participation of HEIs in global networks and initiatives, collaborative projects, and partnerships that advance SDG goals is explored. Finally, the book also intends to discuss metrics and indicators for measuring progress towards SDG targets, as well as reporting frameworks for transparency in sustainability efforts.

The SDGs, adopted by the United Nations in 2015 through the Agenda for Sustainable Development, represent a global commitment to address the most challenging issues humanity faces today. The key objective of SDGs consists of 17 interconnected Goals, which include marginalized and vulnerable populations, addressing challenges such as poverty, hunger, health, education, gender equality, clean water, sustainable energy, economic growth, and climate action to safeguard the planet and ensure prosperity and well-being for all by 2030. The focus is on the three key areas: People, Planet, and Profit. By integrating social, economic, and environmental sustainability, the SDGs offer a comprehensive framework for sustainable development that aims to transform our world for the better. Each goal has specific targets and indicators to measure progress and ensure accountability.

Achieving the SDGs requires collaboration and innovation across sectors and societies. The HEIs hold an important position in society, not only as centres of academic excellence and research but also as agents of social change and development. To achieve the vision of the UN SDGs, HEIs must transform into lifelong learning institutions. This transformation involves extending learning opportunities beyond traditional academic boundaries and engaging more deeply with communities through extension programs. Through targeted programs that address community needs, build capacity, and enhance sustainable practices, HEIs can contribute significantly to the global effort to create a more equitable, healthy, and sustainable world. By boosting partnerships, addressing real-world challenges, and promoting inclusive and equitable education, HEIs can drive change and progress toward sustainable development and ensure that no one is left behind.

It is, indeed, a great pleasure writing a foreword for the book.

With Best Compliments.

Srikanta K. Panigrahi
Indian Institute of Sustainable Development (IISD)
New Delhi, India

PREFACE

The Sustainable Development Goals of 2015, adopted by the United Nations through its 2030 Agenda for Sustainable Development, have set an international agenda to deal with the most urgent issues humanity is confronted with today. The SDGs are presented as 17 interlinking Goals aimed at eradicating poverty, safeguarding the planet, and ensuring prosperity and well-being for people by the year 2030. Its core is divided into three sectors—People, Planet, and Profit. Thus, the social, economic, and environmental sustainability produced by SDGs is offering an integrated framework towards sustainable development. It aims toward better ways of promoting our world. These goals include marginalized and vulnerable populations, poverty, hunger, health, education, gender equality, clean water, sustainable energy, economic growth, and climate action. Each goal has specific targets and indicators to measure progress and ensure accountability.

The SDGs can only be achieved through innovation and collaboration between sectors and societies. This journey to sustainable development is one of the most crucial challenges of the moment, and it presents a hope for humanity.

HEIs play a crucial role in society not only as institutions of excellence and research but also as agents of social change and development. As centres of innovation, knowledge creation, and social transformation, HEIs are uniquely positioned to undertake the transformative agenda necessary for achieving the SDGs. Through targeted programs aimed at building capacity and enhancing sustainable practices by HEIs, they can meaningfully contribute to a global effort toward a better, healthier, and more sustainable world. By increasing partnerships to address real-life challenges and promoting inclusive and equitable education, HEIs can drive change and progression toward sustainable development so that no one is left behind. To achieve this vision of the UN SDGs, HEIs should become lifelong learning institutions by extending the boundaries of learning opportunities beyond traditional academic frameworks and further engaging with communities through extension programs. Higher education institutions, universities, and colleges can play a significant role in realizing a sustainable future if these goals are integrated into core functions such as teaching, research, and community engagement.

This book, *Integrating SDGs and Educational Outcomes in Higher Education*, collects important scholarly works that look into the transformative role higher education institutions play in advancing sustainable development. It considers all aspects at length on how higher learning institutions can integrate sustainability principles into their curricula, research activity, operations, practice, and outreach. It aims to provide insight through critical analysis, case studies, and evidence-based recommendations, offering educators, administrators, policymakers, and researchers involved in sustainable development *via* higher education a practical strategy for action.

For achieving the SDGs, it is believed that, in addition to innovative solutions and dedicated efforts, there is a need for a fundamental rethinking of educational paradigms. The traditional models of education, where excellence in academic work and research output are usually at the centre, need to change to accommodate lifelong learning and active community engagement. HEIs need to become proactive agents of change, influencing society beyond the walls of the classroom and contributing to its well-being.

Chapters in this book present a wide range of perspectives and experiences of institutions from around the world, emphasizing the universality of HEIs in realizing the SDGs. In this

book, we explore the various dimensions of integrating sustainability into higher education. We identify best practices in curriculum design, celebrate successful research efforts that tackle global challenges, and analyse institutional policies that support a culture of sustainability. Among the topics discussed is the foundational role higher education plays in preparing generations to navigate the complexities of sustainability challenges effectively. The value of interdisciplinary work, global cooperation, and community-based projects in steering and forging progress toward reaching the SDG is also reviewed herein.

Our search also brought up case studies from all over the world, which gave us concrete examples of HEIs that have been able to integrate the SDGs into their normal functioning. These case studies not only show the specific strategies used by different institutions but also highlight the universal applicability of the SDGs framework in diverse educational contexts.

We hope that this book will be useful for all engaged in the area of higher education and sustainability, as it can be considered a roadmap for incorporating the SDGs into higher education and aims to inspire and empower institutions to take bold steps toward creating a more sustainable, equitable, and prosperous world. It shall be our collective responsibility to ensure that the next generation will be equipped with knowledge, skills, and values needed to navigate and address the complex challenges of sustainability ahead.

We thank the contributors for their insights and experiences, and institutions and individuals who are working hard to advance the cause of sustainable development. Together, we can make a significant impact and move closer towards achieving the 2030 vision of the SDGs.

Rimple Manchanda

Pearl School of Business
Pearl Academy
Delhi South, India

Priya Jindal

Chitkara Business School
Chitkara University
Punjab, India

&

Naseem Abidi

School of Business
Horizon University College
Ajman, United Arab Emirates

List of Contributors

Anika Sjöberg	Uppsala University, Uppsala, Sweden
B. Usha Shree Rathod	School of Business, SR University, Warangal, Telangana, India
Bhumika Chavda	Pune Institute of Business Management, Pune, India
Charu Vaish	Department of Management Studies, Babasaheb Bhimrao Ambedkar University, Lucknow, India
Choden Goperma	Pune Institute of Business Management, Pune, India
Ghousia Jabeen	School of Business, SR University, Warangal, Telangana, India
Herieta Massango	Faculty of Natural Science and Mathematics, Universidade Pedagógica de Maputo, Maputo, Mozambique
Lata Bajpai Singh	Department of Management Studies, Babasaheb Bhimrao Ambedkar University, Lucknow, India
Malaquias Zildo António Tsambe	Faculty of Natural Science and Mathematics, Universidade Pedagógica de Maputo, Maputo, Mozambique
Monu Bhardwaj	School of Management, Graphic Era Hill University, Dehradun, India
Muddasani Rajya Laxmi	School of Business, SR University, Warangal, Telangana, India
N. Ramu	Department of Management, IFIM College, Bangalore, India
Namrata Prakash	School of Management, Graphic Era Hill University, Dehradun, India
Neha Gautam	Department of Management Studies, Babasaheb Bhimrao Ambedkar University, Lucknow, India
Nilofer Hussaini	Department of Professional Studies, School of Commerce Finance and Accountancy, Christ University, Bangalore, India
Patrício Vitorino Langa	Faculty of Education, Universidade Eduardo Mondlane, Av. Julius Nyerere, Campus Universitário 3453 C, Maputo, Mozambique, and Ali-Mazrui Centre for Higher Education, University of Johannesburg, South Africa
Pradeep Kumar Mishra	Faculty of Management Studies, Sankalchand Patel University, Visnagar, Gujarat, India
Prisca F. Kimaryo	Institute of Social Work, Dar es Salaam, Tanzania
Priya Jindal	Chitkara Business School, Chitkara University, Punjab, India
Rajasshrie Pillai	Pune Institute of Business Management, Pune, India
Ronak R. Modi	Faculty of Management Studies, Sankalchand Patel University, Visnagar, Gujarat, India
Rupa Khanna Malhotra	School of Commerce, Graphic Era Deemed to be University, Dehradun, India
Santosh Kumar	L. N. Mishra Institute of Economic Development & Social Change, Patna, India
Sathya Thangavel	ICFAI Business School, Bangalore, India
Subhankar Ghosh	Department of Education, The University of Burdwan, Purba Bardhaman, West Bengal, India

Sima Mahato	Department of Education, The University of Burdwan, Purba Bardhaman, West Bengal, India
S.R. Sheeja	Department of Economics, University of Kerala, Kerala, India
Tajwar Hussaini	Jumeira University, Dubai, United Arab Emirates
U. Revathi	Department of Economics, University of Kerala, Kerala, India
Vijay Prakash Gupta	Institute of Business Management, GLA University, Mathura, India

CHAPTER 1

Role of Higher Education Institutions in Sustainable Development

B. Usha Shree Rathod^{1,*} and Muddasani Rajya Laxmi¹

¹ *School of Business, SR University, Warangal, Telangana, India*

Abstract: Higher Education Institutions (HEIs) are a powerful force in advancing sustainable development at a time when the survival of our planet demands urgent action. These institutions are evolving into transformation hubs that envision a sustainable future, extending beyond their traditional role of knowledge transfer. The gap between knowledge and action hinders progress in sustainability. Environmental degradation, climate change, and economic inequalities are becoming increasingly apparent, yet effective, long-term solutions remain elusive. HEIs have the potential to bridge this gap by providing the knowledge necessary to drive sustainable change. This chapter highlights how teaching, research, and social impact by HEIs can contribute to global sustainability efforts. HEIs are creating changemakers who prioritize ecological responsibility. With diverse skill sets, these future leaders have the ability to reshape sectors, policies, and lifestyles for sustainability. Beyond the classroom, HEIs foster innovative research, where ecological solutions, climate change mitigation strategies, and social breakthroughs emerge, opening up possibilities for a sustainable future. This chapter explores how HEIs can become leaders in sustainable development, potentially rewriting the future by fostering an ambitious vision and guiding society towards a sustainable lifestyle.

Keywords: Affordable energy, Climate change, Collaboration, Community engagement, Curriculum integration, Ecological innovations, Ecological responsibility, Education for Sustainable Development (ESD), Experiential learning, Globalization, Green start-ups, Higher Education Institutions (HEIs), Institutional commitment, Responsible leadership, Social equality, Sustainability awareness, Sustainability education, Sustainable development, Sustainable Development Goals (SDGs), Sustainable practices.

INTRODUCTION

Higher education serves as the foundation of any nation, shaping both its current landscape and future potential (Rastogi *et al.*, 2024). Effectively promoting sust-

* **Corresponding author B. Usha Shree Rathod:** School of Business, SR University, Warangal, Telangana, India; E-mail: ushashreerathod1234@gmail.com

ainability within educational institutions requires an integrated approach, supported by organizational commitment (Pierson *et al.*, 2017). The concept of sustainable development emerged in response to growing concerns about environmental degradation, poverty, and social injustice, with one of the most pressing global challenges being the depletion of renewable resources (Zheng *et al.*, 2023). Sustainable development is built upon the harmony among economic growth, environmental protection, and social equity, commonly referred to as the three pillars of sustainability. In recent years, long-term sustainability has become a global imperative due to resource depletion, biodiversity loss, and climate change. Governments, businesses, and Non-governmental Organizations (NGOs) increasingly recognize that preserving environmental balance and fostering green practices are essential for future economic prosperity and societal well-being. In 2015, the United Nations took a pivotal step by introducing the Sustainable Development Goals (SDGs), a global framework aimed at achieving long-term environmental preservation by 2030. Universities and colleges play a multidimensional role in the emerging global evolution agenda (Zhou *et al.*, 2020). According to Agenda 2030, all individuals should have access to educational opportunities for lifelong learning (Owens, 2017). Maintaining sustainability is an essential responsibility for academic institutions through their work in research, teaching, outreach, and the propagation of new knowledge (Berchin *et al.*, 2021). Policymakers, government, and non-profit organizations can benefit greatly from a better understanding of the elements that influence the adoption of sustainable practices and their mediating role (Osman *et al.*, 2023). In terms of planning for long-term growth, many universities are active on both a national and international scale, serving a crucial function in the economies of various regions (Leal Filho *et al.*, 2019). Educators have a moral responsibility to teach their students about the SDGs and their importance to humanity (Dhaka, 2024). This chapter aims to explore the multidimensional responsibility of universities in promoting sustainable development. It also discusses how these institutions integrate sustainability into classroom instruction, research, and community engagement to meet sustainability objectives.

Objectives

- Examine how higher education can contribute to addressing critical global challenges such as ecosystem degradation, social inequality, and resource depletion.
- Explore the significance of multidisciplinary approaches in sustainability education, emphasizing cross-disciplinary collaboration.
- Demonstrate effective pedagogical strategies for integrating sustainable development into education.

- Provide insights into research advancements and innovative practices within higher education institutions.
- Highlight the importance of partnerships between educational institutions and external stakeholders in promoting sustainability.

Key Elements

Innovation

Emerging global trends in higher education are driving the need for innovative approaches to learning, visionary teaching methods, and novel organizational structures (Shenkoya & Kim, 2023). Innovation within Higher Education Institutions (HEIs) fosters creative thinking (Fig. 1) and generates groundbreaking solutions to global challenges—both of which are essential for sustainable development. Education serves as a catalyst for advanced research, technological progress, and practical applications that benefit society. As the world moves toward sustainability, HEIs play a pivotal role in nurturing green startups, promoting entrepreneurship, and encouraging interdisciplinary collaborations.

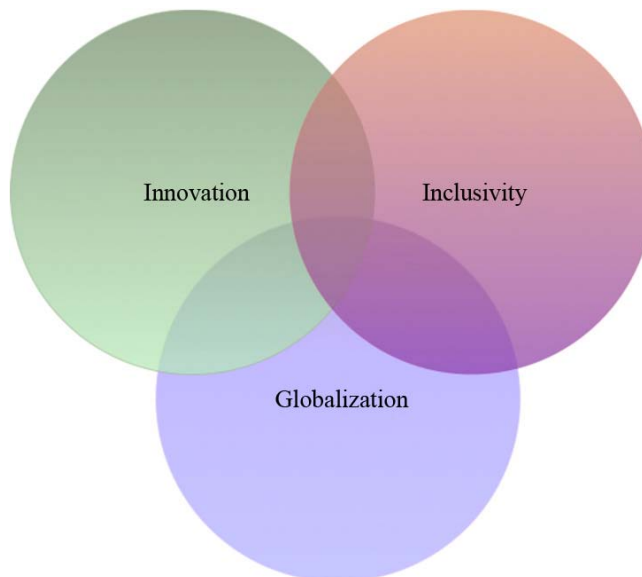


Fig. (1). Key elements of universities and colleges in conserving progression. (Author own creation by using drawio.com).

Inclusivity

Achieving sustainable development requires higher education to be inclusive (Fig. 1), ensuring that individuals from all backgrounds have access to quality

CHAPTER 2

Empowering Sustainability: The Impact of Higher Education on Sustainable Development Goals

Prisca F. Kimaryo^{1,*}

¹ *Institute of Social Work, Dar es Salaam, Tanzania*

Abstract: The successful implementation of the 2030 Agenda for Sustainable Development relies significantly on higher education, which plays a crucial role in achieving the Sustainable Development Goals (SDGs). Higher education fosters investment in future generations, facilitates problem-solving through research, engages with local communities, and develops sustainable campus initiatives. Higher Education Institutions (HEIs) promote critical thinking and operational analysis, providing substantial solutions to challenges outlined in the SDGs. This chapter specifically addresses two SDGs: SDG4 (Quality Education) and SDG5 (Gender Equality). The overarching objective of all 17 SDGs is to tackle the most pressing global challenges by focusing on both developed and developing countries, as all nations are both affected by and responsible for addressing these issues. Quality education, as emphasized in SDG4, is achieved through inclusivity and the provision of high-quality education at all levels, particularly for underprivileged communities. HEIs should implement competency-based education and training to cultivate students' self-direction, foster lifelong learning habits, and equip them with relevant skills, knowledge, and practical applications for real-world scenarios. Transforming the educational system is therefore essential to develop students' competitive mindset, creativity, innovation, self-confidence, and ability to navigate challenges in a globalized world. Additionally, eliminating aggression against women and all forms of abuse within HEIs, particularly sexual harassment and gender inequality, is essential in addressing the challenges outlined in SDG5. Sexual harassment in HEIs remains a global issue that hinders efforts to achieve peace and gender equality while also undermining the core mission of these institutions. Victims experience both intellectual and psychological consequences; thus, implementing effective policies is critical to mitigating these challenges and fostering safe, equitable learning environments.

Keywords: Competency-based education, Gender equality, Higher education institutions, Inclusive education, Quality education, Sexual harassment, SDGs.

* **Corresponding author Prisca F. Kimaryo:** Institute of Social Work, Dar es Salaam, Tanzania;
E-mail: prisalei@yahoo.com

INTRODUCTION

The Sustainable Development Goals (SDGs) cannot be achieved without higher education, which plays a critical role in the 2030 Agenda for Sustainable Development (Althonayan *et al.*, 2021). Higher Education Institutions (HEIs) support and engage with local communities, conduct research to address complex challenges, invest in future generations, and develop initiatives to enhance campus sustainability. Consequently, close international cooperation among universities is essential for the effective implementation of the SDGs. Therefore, Universities play a pivotal role in preparing experts across various sectors to contribute to global development initiatives (Teplov *et al.*, 2017). Moreover, they exert significant influence over policies and strategies aligned with the SDGs and facilitating their effective implementation (Althonayan *et al.*, 2021). Given that all countries are affected by and responsible for addressing global challenges, the 17 SDGs are designed to tackle the most pressing global concerns by focusing on both developed and developing countries.

Sustainable Development Goal 4 (SDG4): Quality Education

SDG4 stresses on learning, with the goal of ensuring universal access to quality and inclusive education that fosters lifelong learning opportunities (United Nations, 2015b). The focus on equity and educational quality directly addresses the shortcomings of the Millennium Development Goals, where education was assessed quantitatively. Education is a cross-cutting domain that influences all 17 SDGs; therefore, when there is less attention given to it, it leads to underscoring its fundamental role in global development. Limited access to education restricts individuals' access to information and negatively impacts their livelihoods. According to reports, 773 million adults lack literacy skills, while 258 million children and youth remain out of school (UIS, 2021). This highlights disparities in knowledge accessibility and their broader implications for life opportunities. This is the reason why HEIs play a pivotal role in addressing these challenges by conducting research on contemporary societal issues, contributing to the achievement of all 17 SDGs. Therefore, high-quality education serves as the foundation of sustainable development and an instrument in achieving these global goals. To address these pressing concerns and influence public policy, HEIs should generate new knowledge and drive innovation through research and training of their faculty members, which seems to be significant in strengthening educational policies and developing critical thinking among citizens (Althonayan *et al.*, 2021). However, significant barriers persist for women and girls, individuals with disabilities, low-income and rural populations, indigenous peoples, and conflict-affected communities, limiting their access to quality higher

education. Addressing these disparities is essential to ensuring equitable and inclusive educational opportunities for all.

Strategies to Achieve Quality Education

Digital Technology

This is information technology, which involves the use of computers to process information, encompasses the resources, software systems, and electronic devices that facilitate the creation, storage, and management of data. Digital technologies enhance the efficiency and competitiveness of HEIs while improving accessibility and the quality of educational services. One significant advantage of digital technology is its role in distance learning, which enables marginalized students to access education without being physically present. This expands opportunities for self-directed and autonomous learning for both individuals and the broader community. Furthermore, students' active participation in the learning process is enhanced through digital platforms. A notable example of this was observed during the COVID-19 pandemic, HEIs leveraged digital tools such as Zoom and Skype to conduct lectures, seminars, forums, and conferences to ensure continuity of education despite lockdown restrictions. Additionally, the use of computer-based presentations, such as PowerPoint, facilitated greater engagement among students, including those from underprivileged backgrounds. Not only that, but also the use of Artificial Intelligence (AI) tools in education is very necessary in helping students in the whole process of learning, particularly in doing assignments, projects, and research. Different tools in grammar check, referencing tools like Mendeley and Zotero are very helpful in assisting students. By reducing time and costs, digital technologies allow educators to streamline the execution of administrative and repetitive tasks through the use of computers and other digital tools, ultimately improving the efficiency of educational delivery.

Additionally, instructors can actively assess their teaching methods, receive regular feedback, and experiment with new instructional strategies. This process is facilitated by providing students with time-limited access to online assessments, allowing educators to evaluate learning outcomes effectively. Digital communication and education technologies have also enabled the development of electronic textbooks and teaching aids for various subjects in higher education curricula. These multimedia educational resources and electronic learning materials, made possible by internet technology, enhance instructional delivery and support more dynamic and interactive learning experiences. For example, most of the HEIs in Tanzania are opting for distance learning and blended methods for their postgraduate students. This gives a chance for many students to acquire higher education while working with zero mobility.

CHAPTER 3

Catalysts for Change: How Higher Education Institutions Contribute to Sustainable Development

Ghousia Jabeen^{1,*} and Muddasani Rajya Laxmi¹

¹ School of Business, SR University, Warangal, Telangana, India

Abstract: Universities and colleges worldwide play a crucial role in promoting sustainable development by incorporating Sustainable Development Goals (SDGs) into their academic systems. Higher Education Institutions (HEIs) serve as centers for knowledge exploration, capacity development, and learning, producing graduates equipped to address complex global challenges. Through teaching, research, and community service, HEIs contribute to sustainable development by fostering awareness and understanding of environmental, economic, and social issues. By integrating SDG-oriented learning outcomes across curricula, HEIs cultivate a culture of critical engagement with sustainability issues and pursue innovative solutions. Research conducted within universities increasingly focuses on developing sustainable technologies, mitigating climate change, and advancing social justice. Furthermore, HEIs implement sustainable practices such as energy efficiency measures within their operations. Collaboration among HEIs, industries, governments, and communities enhances the practical application of sustainability principles, bridging the gap between theoretical knowledge and real-world impact on both local and global scales. Finally, HEIs play a unique and essential role in shaping sustainable development. They cultivate responsible and socially aware individuals, generate academic knowledge, and foster international collaboration. These contributions are vital for advancing the United Nations' 2030 SDGs and promoting education that supports a more sustainable, equitable, and prosperous world.

Keywords: 2030 Agenda transformation, Higher education institutions, Sustainability, Sustainable development goal.

INTRODUCTION

Higher Education Institutions (HEIs) play a critical role in promoting sustainable development by shaping future education leaders. The concept of sustainable development is dynamic and adaptable, influencing shifts in behavior patterns and policy frameworks at both the societal and institutional levels across social, economic, and environmental domains. Since its emergence in the early 1980s,

* Corresponding author Ghousia Jabeen: School of Business, SR University, Warangal, Telangana, India;
E-mail: ghousiajabeen786.gj@gmail.com

sustainable development has evolved significantly, taking on new forms to address contemporary challenges.

Sustainable development gained significant attention in 2015 when the United Nations adopted the 2030 Agenda and the Sustainable Development Goals (SDGs). The United Nations' latest development agenda, the 2030 Agenda for Sustainable Development, was endorsed by the leaders of the 193 member states of the United Nations General Assembly. The framework comprises 17 goals, 169 targets, and 232 indicators designed to address pressing societal challenges, including poverty, inequality, and environmental sustainability. The agenda also seeks to promote peace by fostering collaboration among various sectors and nations. According to the UN guidelines, the successful implementation of the SDGs relies on key stakeholders, including governments, businesses, academic institutions, and civil society organizations. Within this framework, HEIs play a pivotal role in advancing sustainable development through their educational, research, outreach and management activities (Bhowmik *et al.*, 2018). Research indicates that HEIs contribute significantly to achieving SDGs by fostering innovation, generating knowledge, and equipping future professionals with the necessary skills and competencies to address sustainability challenges (Ramos Torres, 2021; Leal Filho *et al.*, 2019; García-Feijoo *et al.*, 2020).

Importance of Higher Education in SDGs

The introduction of the new SDG framework paves the way for a progressive and transformative agenda in global tertiary education, ensuring equal access to quality education for all students. This agenda fosters creativity, curiosity, and analytical skills, which are essential for addressing challenges such as economic instability, social injustice and environmental degradation. Education serves as a crucial avenue through which academic institutions support sustainable development by providing students with practical experience in sustainability initiatives applicable to both individual and corporate settings. Additionally, HEIs act as policymakers and centers for sustainable development solutions (UNESCO, 2017). This underscores their vital responsibility in shaping a sustainable future.

Global Context and Need for Sustainability in Education

Global dynamics have shifted significantly in recent years, emphasizing the need for a systemic approach to address new and complex environmental, social, and economic challenges. In response to concerns such as global warming, resource scarcity, and social injustice, societies worldwide have called for a fundamental transformation in education to prepare future leaders to navigate the complexities of the postmodern world. According to the Brundtland Commission, sustainable development refers to progress that meets the needs of the present generation

without compromising the ability of future generations to meet their needs (Hao *et al.*, 2021). The United Nations has played a crucial role in advancing education for sustainable development, beginning with the Decade of Education for Sustainable Development (2005–2014) and continuing with the Global Action Program on Education for Sustainable Development, which have further driven the global movement toward sustainability in education (Campbell & Speldewinde, 2022). Fig. (1) illustrates the global context and the growing need for sustainable education. Schools and learning programs have increasingly recognized that education plays a central role in shaping a sustainable future. It is a key driver of shifting values, behaviors, and skills necessary for solving complex societal challenges. Sustainable education is the process of fostering an understanding of interconnected social, economic, and environmental systems. It empowers individuals to make informed decisions and take responsible actions that contribute to personal and societal transformation.



Fig. (1). Global context and need for sustainability in education.

CHAPTER 4

Antecedents, Decisions, and Outcomes of Technical Vocational Education and Training in the UAE

Tajwar Hussaini^{1,*} and Nilofer Hussaini²

¹ Jumeira University, Dubai, United Arab Emirates

² Christ University, Department of Professional Studies, School of Commerce Finance and Accountancy, Central Campus, Bangalore, India

Abstract: Vocational and technical education training in higher education is increasingly recognized as a key driver of sustainability. As the world faces pressing challenges and the need for sustainable development, vocational pedagogy is evolving to equip students with practical skills and knowledge that directly support sustainability efforts. Using the Antecedents, Decisions, and Outcomes (ADO) approach, this study aims to identify the antecedents, dimensions, and outcomes of the growing significance of vocational education, particularly in the UAE. It examines the role of vocational education in higher education in advancing sustainability goals and provides a nuanced understanding of how vocational education fosters sustainable practices within organizations. By bridging the gap between theoretical knowledge and real-world application, vocational education enables organizations to integrate sustainable practices effectively. This study also addresses the limitations of traditional systems and responds to the increasing demand for skilled workers capable of contributing to sustainability objectives.

Keywords: Sustainable Development Goals (SDGs), Technical education, Traditional education, Training, Vocational education.

INTRODUCTION

Understanding the Sustainable Development Goals with their Relevance in Higher Education

Access to higher education is a key driver of social justice and progress within the framework of the Sustainable Development Goals (SDGs). As the professional world becomes increasingly volatile, academia must adapt and evolve through disciplines that actively contribute to sustainable development. Recognizing this,

* Corresponding author Tajwar Hussaini: Jumeira University, Dubai, United Arab Emirates; E-mail: rizatajwar@gmail.com

the SDG framework positions education as a fundamental catalyst for transformative change (Walter Leal Filho, 2021). This is reflected in SDG 4, Target 4.3, which has the following aim: “by 2030, ensure equal access for all women and men to affordable and quality technical, vocational, and tertiary education, including university.” Higher education plays a crucial role in advancing the SDGs through multiple approaches, including curriculum development to equip students with skills for sustainable research, innovation that addresses specific SDG challenges, community engagement initiatives, and sustainable institutional practices. Enhancing university programs in sustainability education can significantly contribute to achieving these global objectives.

Meaning of Technical Vocational Education and Training

Vocational education is a broad term referring to the process of training and learning that typically begins at the secondary school level and continues through tertiary education. It equips graduates with essential job-related learning experiences, technical skills, and theoretical knowledge to meet professional requirements effectively. Vocational education prepares students to work in professional environments from post-secondary to advanced levels, transmitting experiential knowledge and equipping them with the necessary skills and competencies for specific occupations (Fig. 1). This form of education catalyzes a country's economic development by fostering a skilled workforce, reducing unemployment, and alleviating poverty (Wilkins, R., 2002).

Features of Technical and Vocational Education and Training

- Vocational education focuses on the acquisition of specialized techniques across various learning contexts, whether formal or informal, school-based or work-based, and at elementary, secondary, tertiary, polytechnic, or university levels. Its primary emphasis is on mastering the practical application of knowledge to achieve specific outcomes rather than merely acquiring theoretical knowledge. While vocational education prioritizes hands-on learning, it also incorporates broader knowledge essential for professional competence.
- **Technical and Vocational Education and Training (TVET)** involves the learning of specialized and in-depth knowledge that focuses on the expertise underlying these techniques. Though certain tasks may appear simple at first, mastering the specialized actions that support them is essential. For example, baking and salon work may seem unspecialized, but they require a high level of knowledge and skill that not everyone possesses. As the underlying knowledge becomes more specialized and complex, the associated techniques become more professional, and fewer individuals attain mastery. At this stage, the distinction between a vocation and a profession becomes evident. Fields such as

engineering and food science are classified as professions, whereas hairdressing and baking are typically regarded as vocations.

- **TVET, as a continuum** within the education system, can be pursued at various levels—from secondary and post-secondary institutions to the highest level, where specialized and esoteric knowledge is acquired at the university level.
- **TVET, as a learning-by-doing method**, emphasizes studying through experience, reflection, and repeated practice until one masters a skill. Mastery can be thought of as dexterity in handling objects, which may not always be automated or automatic. For example, a chemical technician may model chemical processes on a computer. Still, to develop the necessary skills, the TVET approach requires learning by doing, reflecting on the results, and striving for improvement. Throughout the learning process, the learner may encounter difficulties in achieving the desired outcome, thereby developing the abilities needed to solve such challenges. This approach aligns with problem-solving methods in design thinking, whether creating new solutions or redesigning better answers to both old and new problems.

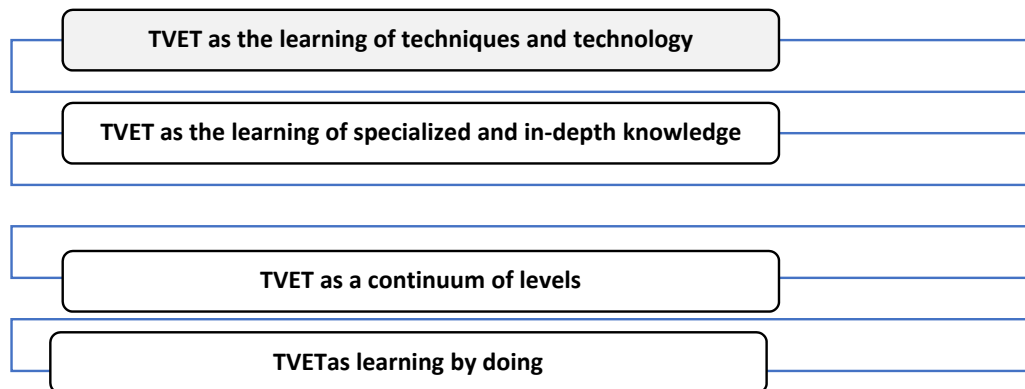


Fig. (1). Main features of TVET.

TVET within Higher Education

With the advent of the SDGs, there has been a profound impact on the higher education industry, as it is seen as a key driver in addressing contemporary social, economic, and ecological challenges within an educational context. Most Higher Education Institutions (HEIs) address this through curriculum design. Educators have incorporated SDG content into their teaching (Cardiff *et al.*, 2024) while also recognizing the need to accommodate greater diversity through pedagogical approaches (Manolis & Manoli, 2021). However, many HEIs lack efficient systems to capture SDG-related evidence at scale and report it (Gutiérrez *et al.*, 2023). Considering these goals, the scope of vocational education and technical

CHAPTER 5

Effective Environmental Education: A Multistakeholder Investigation of Facilitators and Barriers to Swedish Education

Anika Sjöberg^{1,*}

¹ Uppsala University, Uppsala, Sweden

Abstract: Environmental Education (EE) plays a crucial role in catalyzing societal change to address the ecological challenges that the world faces today. However, barriers often hinder its full potential. This mixed-methods study unveils key indicators, facilitators, and obstacles to effective EE, drawing from a case study of a Master's programme in Sustainable Development (MSD) with an ecological focus on a Swedish higher education institution. Three sub-questions guided the research: How do stakeholders define effective EE? What do stakeholders identify as the strengths and challenges of the MSD program? How do the interactions among individual, curricular, and institutional perspectives serve as facilitators or barriers to effective EE? A mixed-methods explanatory approach was employed, combining a bottom-up, multistakeholder analysis with policy analysis to reveal system-level facilitators and barriers to effective EE. The study first surveyed students and then conducted interviews with them and additional stakeholders, utilizing the iterative research process of grounded theory. This study identifies interdisciplinary content, skills in systems thinking and environmental communication, and practical application a key indicators of EE. Student-centered learning, along with the use of practical case studies, emerged as a critical facilitator of effective EE. In contrast, poor communication was the principal barrier, contributing to other obstacles such as lack of direction, repetitive content, and failure to achieve student learning outcomes. These findings underscore the importance of flexibility, clear communication, and student-centered strategies in enhancing the impact of EE, which can empower action and advocacy for sustainable practices, increase knowledge of sustainable affairs, and foster responsible citizenship. This study underscores the value of embedding practical skills, environmental communication, and purpose-driven learning into higher education to strengthen EE outcomes and better equip future environmental leaders.

Keywords: Effective environmental education, Implementation, Indicators, Interdisciplinary teaching, Multistakeholder perspectives, Student-centered learning, Sustainable development, SDGs.

* Corresponding author Anika Sjöberg: Uppsala University, Uppsala, Sweden; E-mail: sjoberg.anika@gmail.com

INTRODUCTION

The spread of knowledge and innovation has led humanity into a detrimental relationship with Earth. However, it can also guide us out of this predicament—this is where environmental education plays a crucial role. The United Nations Educational, Scientific and Cultural Organization (UNESCO) asserts that Environmental Education (EE) is vital for catalyzing societal change and promoting sustainable development due to its capacity to shape individuals' attitudes, values, and behaviors on an exponential scale (UNESCO, 2023). Environmental education is defined as “a process that helps individuals, communities, and organizations learn more about the environment; develop skills to investigate their environment; and make intelligent, informed decisions about how they can help take care of it” (NAAEE, 2022, p. 8). In this chapter, the term EE refers to all forms of education that align with the NAAEE's (2022) definition, with an emphasis on the ecological dimension of the environment.

A unified effort to implement effective EE is crucial for the sustainable development of humanity, as the world operates through holistic processes that are deeply interconnected. Individuals must understand their roles within these processes (Begum *et al.*, 2022; Fredriksson *et al.*, 2020; NAAEE, 2022). Currently, many institutions implementing EE face challenges such as demonstrating its usefulness (Ntona *et al.*, 2023), student disinterest and disengagement with the material being taught (Kopnina, 2012; Monroe *et al.*, 2019), rigid organizational structures, and a lack of institutional support (Aleixo *et al.*, 2018; Lambrechts *et al.*, 2013), as well as insufficient resource allocation to achieve the goals of EE (Naeem & Peach, 2011). While several studies have explored these challenges and their contributing factors, few have investigated successful cases of EE, providing insights into the features that contribute to its success.

This study aimed to identify the facilitators and barriers to effective EE in higher education by using a successful program as a case study. It prompted stakeholders to define what they consider effective EE, as well as to identify the strengths and challenges of the university program in which they participated. Additionally, the study investigated how these constructed meanings interact with institutional frameworks. The research project sought to answer the following research question:

- i. What are the facilitators and barriers to effective EE in the Master's in Sustainable Development (MSD) program at universities in Uppsala, Sweden?

This question was investigated through three sub-questions:

- i. How do stakeholders define effective EE?
- ii. What do stakeholders identify as strengths and challenges of the MSD program?
- iii. How do the interactions of individual, curricular, and institutional perspectives contribute as facilitators or barriers to effective EE?

This research project analyzed the MSD program offered by Uppsala University (UU) in collaboration with the Swedish University of Agricultural Sciences (SLU) in Uppsala, Sweden. The analysis was motivated by the program's ecological focus and Sweden's recognition as a world leader in sustainability (Månsson, 2016; Team Conscious Carma, 2021; Youth Climate Action Team Inc, 2024). The MSD syllabus positioned the ecological environment as the central theme while also addressing economic and social perspectives in relation to their impacts on biological and environmental conditions.

This chapter contributes to promoting ecological sustainable development goals by investigating how to enhance the integration of EE into higher education. The study's findings benefit all stakeholders interested in implementing EE—such as educational institutions, public education systems, and professional workshops—by proposing a guideline for the design and implementation of EE that can be adapted to various contexts.

RESEARCH DESIGN

This study focused on examining the barriers and facilitators of the successful implementation of EE at UU and SLU from various perspectives, including individual (students and teachers), curricular (course coordinators and program directors), and institutional (program board members and document analysis) (Fig. 1). The theoretical framework for this project is rooted in constructivist grounded theory, employing an iterative process during the data collection period to uncover how participants constructed their experiences within the program (Fig. 2).

This study utilized an explanatory mixed-methods design to achieve a holistic understanding of EE. Quantitative data was collected from students through a survey in which the participants evaluated the program they took (see Appendix A for survey questions). Qualitative data was gathered to explain the quantitative results through semi-structured, open-ended interviews with students and faculty at UU and SLU, as well as through university documents (see Appendix B for interview questions).

Fig. (2) illustrates the coding process: data analysis began with open coding, where codes were generated based on initial findings. This was followed by a

CHAPTER 6

Integrating Indian Knowledge Systems for Achieving Sustainable Development Goals in Higher Education: A Policy Perspective

Sima Mahato¹ and Subhankar Ghosh^{1,*}

¹ Department of Education, The University of Burdwan, Golapbag, Purba Bardhaman, West Bengal, India

Abstract: India has long been recognized as a land of diverse knowledge systems globally, dating back to prehistoric times. Many ancient Indian institutions, such as Nalanda, Takshashila, and Vikramashila, served as indigenous learning hubs that aimed for the holistic development of human beings at all levels—physical, mental, emotional, and spiritual. In contemporary society, it is increasingly crucial to seamlessly integrate the rich and valuable knowledge, wisdom, and learning experiences of the ancient education system with mainstream education to address the complex issues of the 21st century. The Sustainable Development Goals (SDGs) reflect a key agenda focused primarily on the Environmental, Economic, and Societal aspects of progress to ensure human well-being. The Indian Knowledge Systems (IKS) significantly impact the Indian education system, instilling students with a deep sense of pride in their own culture. The NEP-2020 advocates for incorporating the principles of IKS into higher education across various disciplines, including humanities, science, medicine, mathematics, arts, and performing arts. Indian higher education institutions are vital centers for promoting, preserving, and disseminating the treasures of traditional knowledge and practices to the youth for the welfare of future generations. They encourage interdisciplinary research and supportive institutional planning that aligns with the goals of sustainable development. The crux of this article is to explore various policies related to Indian higher education institutions aimed at achieving the SDGs and advancing the Indian knowledge society through the revival of IKS.

Keywords: Higher education, Indian Knowledge System (IKS), Policy framework, Sustainable Development Goals (SDGs).

INTRODUCTION

The Indian Knowledge Systems (IKS) is a vast collection of ancient Indian texts from intellectual ancestors reflecting their beliefs, culture, knowledge, practices,

* **Corresponding author Subhankar Ghosh:** Department of Education, The University of Burdwan, Golapbag, Purba Bardhaman, West Bengal, India; E-mail: sghosh@edu.buruniv.ac.in

and wisdom as articulated in the Vedas, Upanishads, Ayurveda, Yoga, Artha Shastra, and Vastu Shastra. These texts have been adapted in various fields such as arts, economics, medicine, science, and spirituality. However, Colonisation and Modernisation have significantly affected indigenous systems over time. A stark contrast is evident between the Indian and Western Knowledge Systems, as the former views knowledge as a tool for exercising power over a self-soothing, materialistic world, while the latter glorifies knowledge as a pathway to individual liberation, embodying the true essence of a spiritual world intrinsically connected to the sustainable well-being of human civilization (Kapoor, 2005). In contemporary educational policy, there is an ongoing trend for reviving indigenous knowledge systems to foster the holistic development of current and future generations through various institutional practices. Higher Education Institutions (HEIs) aim to instill in learners a sense of intellect and morality and enable them to address global issues, emerging as active citizens of the country.

IKS and Learning Domains

The essence of IKS is based on three key components: Knowledge (Jnan), Philosophy (Darshan), and Science (Vignan). These components have developed over time and made a profound impact on various disciplines, including education, commerce, law, health, and justice, as illustrated in Fig. 1 (Forehand, 2005; Khan & Sharma, 2024; Mandavkar, 2023).

- Jnan (Knowledge Domain) – The “jnan” component consists of a systematic organization of ancient sacred texts (*Vedas and Upanishads*), epics (*Ramayana and Mahabharata*), scriptures (*Bible, Geeta, Kuraan, and Guru Granth Sahib*), and mythological Jataka stories. These texts provide spiritual insights, moral guidance, and cultural beliefs from various religious traditions and philosophical schools. This timeless knowledge has been transmitted orally from one generation to the next for ages.
- Darshan (Affective Domain) – This component encompasses the metaphysical insights of all Indian schools of philosophy, including *Samkhya, Yoga, Mimansa, Vedanta, Nyaya*, and the ideology of attaining “Moksha” by spiritual enlightenment. Each branch of philosophy has its own uniqueness in perceiving truths and shaping the way of life.
- Vignan (Behavioral Domain) – The Gupta era is marked by profound creativity. In the Gupta period, enormous advances in arts, poetry, prose, and drama made India a centre of attraction for foreign scholars. Various scientific and mathematical innovations, as well as the medical practices of that time, have continued to influence generations of intellectuals. *Kalidasa, Charak, Sushruta, Aryabhatta, and Panini* were a few among the pioneering contributors during

that period who not only advanced the knowledge systems of ancient India but also had a far-reaching impact on global scientific knowledge and innovation (Math & Math, 2021).

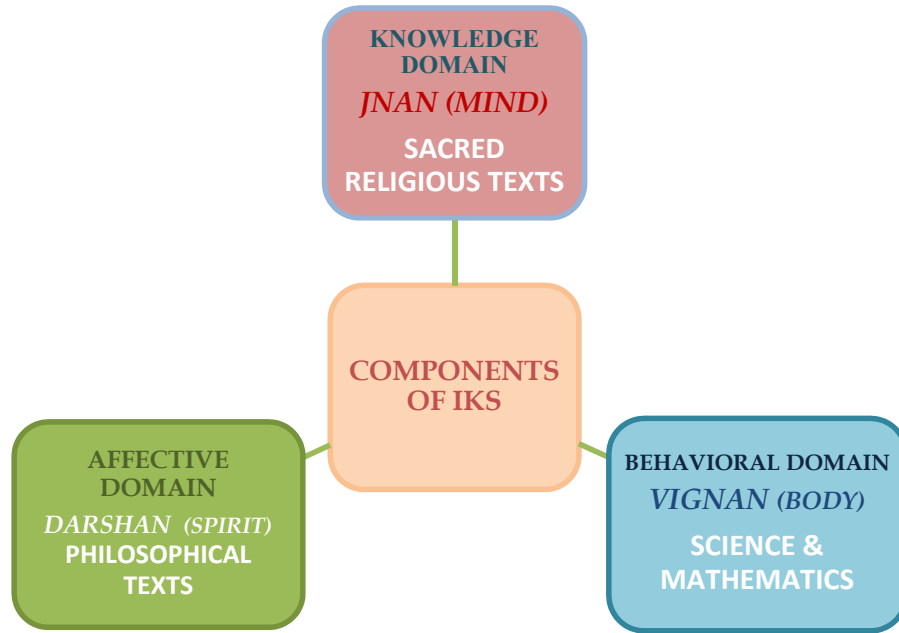


Fig. (1). IKS and learning domains.

The IKS is interconnected with all three learning domains—Jnan (Knowledge), Darshan (Affective), and Vignana (Behavioral). The comprehensive framework of accumulated wisdom reflects the vibrant ancient practices and traditions of India. This framework inspires learners to embrace traditional wisdom and intellectual competency that can effectively address global challenges.

Historical Backdrop of IKS in Education

IKS has a long history, highlighting its significance in understanding contemporary cultural identities and practices. Dating back to 1500 BCE in the early Vedic period, the “Guru-Shishya parampara” formed a lineage to transmit cultural knowledge across generations. Various pieces of archaeological evidence indicate the use of palm leaves and tree bark to preserve oral traditions of knowledge. The Golden Gupta Era in Indian history is marked by innumerable scientific and medical contributions that transformed the Indian knowledge landscape. Gradually, the arrival of Arabian forces led to a loss of continuity in the transmission of indigenous knowledge. The emergence of new empires, the

CHAPTER 7

Emerging Issues in Local and Global Studies: A Comparative Analysis of Sustainable Development Goals

Monu Bhardwaj^{1,*}, Namrata Prakash¹, Priya Jindal² and Rupa Khanna Malhotra³

¹ *School of Management, Graphic Era Hill University, Dehradun, India*

² *Chitkara Business School, Chitkara University, Punjab, India*

³ *School of Commerce, Graphic Era Deemed to be University, Dehradun, India*

Abstract: This chapter emphasizes a comparative analysis of the Sustainable Development Goals (SDGs), exploring emerging issues in both international and domestic research. It examines the diverse socio-economic, cultural, and political contexts in which various regions and communities understand, implement, and prioritize the SDGs. By analyzing case studies from both developed and developing countries, this chapter identifies the factors influencing the achievement of these global objectives at different levels. The findings may enhance policy coherence, collaborative governance, and sustainable development by highlighting critical areas where local actions align with global goals and where discrepancies exist. Additionally, it addresses how grassroots movements, technology, and international organizations have shaped discussions around sustainable and equitable development. This comparative framework unravels the complex interactions between global frameworks and local realities, aiming to facilitate the effective application of global strategies and advance progress toward sustainable futures.

Keywords: Comparative analysis, Equitable growth, Global governance, Grassroots movements, Implementation challenges, Local-global studies, Policy coherence, Sustainable Development Goals (SDGs), Sustainable development, Technology.

* **Corresponding author Monu Bhardwaj:** School of Management, Graphic Era Hill University, Dehradun, India;
E-mails: monubhardwaj@gehu.ac.in; monubhardwaj865@gmail.com

INTRODUCTION

Sustainable Development Goals and Comparative Studies

The United Nations General Assembly adopted the 2030 Agenda for Sustainable Development, which includes a set of 169 targets to be achieved by the year 2030. This agenda establishes a global partnership aimed at creating a world “free of poverty and hunger, with universal access to safe and nutritious food, and with protection of the planet.” It is a universal agenda for all people, regardless of their level of development. At the time of its adoption, more than 836 million people were still living in extreme poverty globally. Although the proportion of people in extreme poverty has been halved since 1990, the decline in absolute numbers has been minor. Most people with low incomes now reside in developing countries with middle-income status, and the number of impoverished individuals has increased in some of these nations, particularly in fragile states (Carpentier & Braun, 2020; Weiland *et al.*, 2021; Yuan, 2021). Since 1990, poorer and vulnerable rural populations have been left behind. Gender inequalities persist in various forms of discrimination and violence against women and girls throughout their life cycles. One in three women aged 15 years or older worldwide has experienced physical and/or sexual violence at some point in their lives; harmful practices such as child marriage and female genital mutilation/cutting still exist in many regions. The analysis of the Sustainable Development Goals (SDGs) is supplemented by comparative studies that focus on national or regional approaches to achieving these goals. Such studies typically analyze patterns of differences and similarities, enhancing our understanding of why countries adopt different governance strategies or why similar strategies yield different outcomes (Health Organization, 2021; Walker-Descartes *et al.*, 2021). Thus, these analyses fit well within local/global studies concerning the governance of common issues in ecologically bounded spaces. The SDGs are the result of a worldwide political process in which proposals and preferences have been negotiated and renegotiated. However, the results are not homogeneous, and “one size does not fit all” solutions apply. As an analytic framework, local/global studies focusing on SDGs also address paradoxes and dilemmas. We must consider the complexities and nuances of each region and country, as these factors contribute to disparities in achieving the SDGs. It is essential to address these disparities by implementing tailored strategies and policies that align with the unique needs and challenges of different communities. Through collaborative efforts and partnerships, we can ensure inclusive and sustainable development for all, leaving no one behind. Additionally, monitoring and evaluating progress toward the SDGs are important to identify gaps and obstacles. This will enable us to make informed decisions and take timely actions to accelerate progress and overcome challenges. By working toward the achievement of the SDGs, we can build a better future where every

individual, regardless of their background or circumstances, has the opportunity to thrive and live a dignified life. Let us join hands and strive for a world that is truly sustainable, equitable, and just (Leal Filho *et al.*, 2018; Abd Aziz & Basir, 2018).

THEORETICAL FRAMEWORKS FOR COMPARATIVE ANALYSIS OF SDGS

To develop a science of sustainability that addresses the challenges of climate change, resource depletion, and pollution accumulation, a multilevel governance perspective and a multiscale approach to both natural and artificial systems are essential. This master's thesis investigates whether and how biophysical indicators of sustainability can provide the necessary worldviews for such a science. Various approaches to sustainability were explored, including sustainability science, ecological economics, industrial ecology, input-output analysis, general systems theory, ecosystem science, and anthropogenics. From these approaches, six classes of indicators were derived. Among them, only the final class—observables related to planetary boundaries—can offer the necessary worldviews (Cochran, 2015) (Fig. 1). However, it is important to recognize a broad range of observables within socio-ecological systems to establish a scientific agenda for sustainable development. Flows of food, energy, materials, and information are particularly significant. The biophysical dimensions of these flows, with an emphasis on mineral nutrients, are described using thermodynamic, structuralist, and network approaches. A systems perspective on production in the Anthropocene is adopted, suggesting that human production creates anthropogenic stocks and residual flows that adhere to fundamental principles.

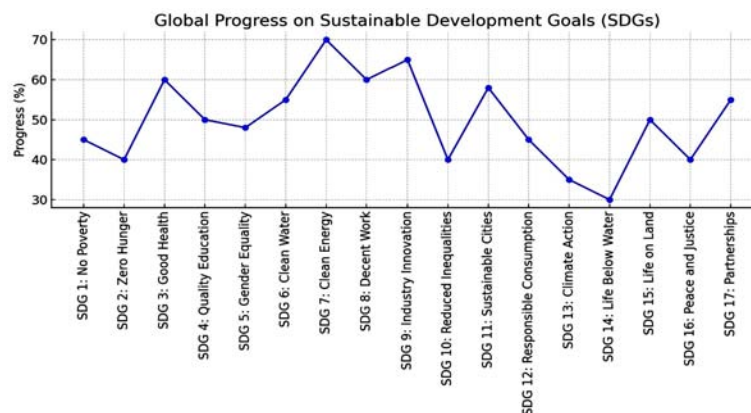


Fig. (1). Global progress of SDGs.

CHAPTER 8

Transforming Higher Education: Opportunities, Challenges, and Success Stories in SDG Integration For A Sustainable Future

Vijay Prakash Gupta^{1,*}, Pradeep Kumar Mishra², Ronak R. Modi² and Santosh Kumar³

¹ *Institute of Business Management, GLA University, Mathura, India*

² *Faculty of Management Studies, Sankalchand Patel University, Visnagar, Gujarat, India*

³ *L. N. Mishra Institute of Economic Development & Social Change, Patna, India*

Abstract: This chapter explores the pivotal role of Higher Education Institutions (HEIs) in integrating the Sustainable Development Goals (SDGs) into their core functions: education, research, and community engagement. As global sustainability gains prominence, HEIs emerge as key drivers of change. The chapter highlights innovative strategies and best practices for SDG incorporation, supported by case studies from diverse institutions. It discusses significant challenges, including resource constraints and institutional resistance, while offering practical solutions for overcoming these barriers. Additionally, it outlines the policy and social implications of SDG integration, emphasizing the need for systemic support and collaboration across sectors. By examining the success stories of HEIs that have effectively adopted the SDGs, the chapter provides valuable insights into future pathways for enhancing higher education's contribution to sustainability. Ultimately, it underscores the significance of empowering students and communities through sustainable development practices, ensuring that universities play a leading role in shaping a more equitable and sustainable future. The goal of this chapter is to explore how HEIs incorporate SDGs into their operations, identify the challenges and opportunities, and elucidate successful methods for achieving SDGs in education. The study uses secondary data from reports, government schemes, and the Ministry of Education. Case studies reveal trends and best practices in SDG integration within HEIs, highlighting innovative practices, challenges, and strategies for advancing global sustainability through education and community engagement.

Keywords: Education, Environment, Higher Education Institutions (HEIs), Innovation, Institutions, SDGs, Sustainability.

* **Corresponding author Vijay Prakash Gupta:** Institute of Business Management, GLA University, Mathura, India; E-mail: vijayguptacmd@gmail.com

INTRODUCTION

Role of Higher Education Institutions in Global Sustainability

Since the United Nations Conference on the Human Environment in 1972, Higher Education Institutions (HEIs) have adopted proactive approaches to support Sustainable Development (SD) (Amaral *et al.*, 2015). These strategies have manifested in the creation of sustainability declarations and charters (Lozano *et al.*, 2013), the redesign of curricula to incorporate sustainability (Du *et al.*, 2013; Qian, 2013), regional and global collaborations (Kawabe *et al.*, 2013), and the development of sustainable campuses (Vaughter *et al.*, 2016). The responsibility for promoting SD within HEIs has significantly increased, especially following the emergence of the Brundtland Commission in 1987 (Lozano *et al.*, 2013). The push for integrating sustainability into higher education gained further momentum during the UN Decade for Education for Sustainable Development from 2005 to 2014, which aimed to mainstream sustainability principles into the core operations of HEIs (UNESCO, 2014).

Numerous empirical studies and literature reviews have provided a detailed outlook on how HEIs engage in SD activities. For example, Wiek *et al.* (2011) discussed competencies for sustainability education, emphasizing how courses in higher learning institutions can be structured to help students acquire the necessary skills to address complex SD challenges. A systematic review by Wu and Shen (2016) indicated that the understanding and framing of SD within the learning environments of HEIs—beyond just environmental or engineering contexts—has only recently started to gain traction. Other research priorities include effective practices in sustainability management (Velazquez *et al.*, 2005), regional cooperation and partnerships for sustainability among HEIs (Karatzoglou, 2013), and the increasing importance of sustainability in reporting and assessment in the context of HEIs (Ceulemans *et al.*, 2015). Among these discussions, the operation of sustainable campuses has been extensively covered by scholars (Lozano *et al.*, 2015), positioning HEIs as champions of SD for individuals and organizations in society.

The global sustainability challenges are best addressed by HEIs. As centers of knowledge generation, training grounds for future leadership, and hubs for knowledge transfer, HEIs play a strategic role in the quest for a sustainable future. Through participation in sustainable community development, policy change, advocacy, and stewardship in campus management, HEIs mitigate negative environmental impacts and contribute significantly to achieving global goals aligned with the Sustainable Development Goals (SDGs). In addition to fostering knowledge and human capital development, HEIs serve as testbeds for

sustainability, where multi-stakeholder and interdisciplinary approaches are employed to positively influence environmental, social, and economic development globally.

Given the increasing importance of sustainability, this chapter discusses the prospects and potential for implementing the SDGs within HEI activities. It features case studies of institutions that have begun their journeys with the SDGs and highlights best practices that can be applied in other contexts.

This chapter aims to provide real-life solutions and a guide for the practical implementation of the SDGs through case studies and discussions of potential barriers to their integration. Ultimately, HEIs are not merely places where knowledge is produced; they are powerful agents capable of creating change for a better future for society and the planet. Fig. (1) shows how SDGs can be integrated into higher education.

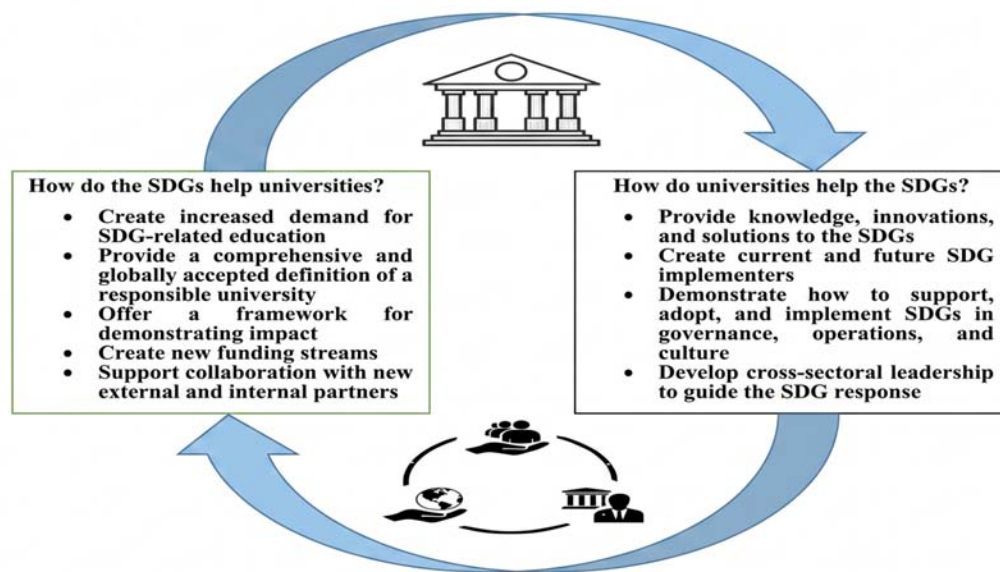


Fig. (1). Integration of the SDGs & higher education. **Source:**SDSN Australia/Pacific (2017): *Getting started with the SDGs in universities: A guide for universities, HEIs, and the academic sector*. Australia, New Zealand, and Pacific Edition. Sustainable Development Solutions Network – Australia/Pacific, Melbourne.

Significance of Integrating the SDGs into Higher Education

Incorporating the SDGs into higher education prepares learners for global challenges and enhances institutions' capacity for transformative leadership and change.

Barriers to Sustainable Development Goals Integration in Higher Education: A Survey-Based Study in South India

N. Ramu¹ and Sathya Thangavel^{2,*}

¹ Department of Management, IFIM College, Bangalore, India

² ICFAI Business School, Bangalore, India

Abstract: Integrating the Sustainable Development Goals (SDGs) into higher education curricula presents significant challenges. Various barriers hinder effective implementation, despite the widespread recognition of the importance of SDG integration. These barriers include a rigid curriculum structure, inadequate teacher awareness, and limited resources in India. The higher education system has struggled to achieve meaningful transformation from traditional curricula due to inappropriate approaches to integrating SDGs and resistance to change. Incorporating SDGs into the curriculum can enhance skills such as critical thinking and problem-solving. This integration will also allow students to engage with real-world processes, enrich their educational experiences, and foster a holistic approach to learning, preparing them to become sustainable professionals and citizens for the future. By understanding global challenges, this review aims to provide sustainable solutions and strategies to overcome barriers to SDG integration and ensure its effective implementation in India.

Keywords: Critical thinking, Curriculum, Education, Holistic approach, SDG integration, Sustainable future, Transformation.

INTRODUCTION

The United Nations launched the 2030 Agenda in 2015, which serves as a pressing call for sustainable development. The 17 Sustainable Development Goals (SDGs) are designed to achieve 169 specific targets, representing a collective response to critical global challenges. In line with this agenda, it is essential to integrate the SDGs into curricula and research to enhance the competencies of future generations (Zguir *et al.*, 2021).

* Corresponding author Sathya Thangavel: ICFAI Business School, Bangalore, India;
E-mail: sathya.thangavel@ifim.edu.in

Though the integration of SDGs into the curriculum is vital, it faces numerous challenges that hinder effective implementation. Higher Education Institutions (HEIs) are committed to equipping students with the skills necessary to become socially responsible and sustainable citizens who can address societal problems and environmental challenges. This integration creates a platform that connects learning with real-world impact for students as learners and citizens (López, 2022). The United Nations 2030 Agenda emphasizes fostering life skills in learners of all ages through cognitive and non-cognitive teaching methods (Rieckmann, 2017). The social-emotional aspects of learning are crucial for extending beyond theoretical knowledge, building students' competencies in partnership, effective communication, and negotiation with stakeholders (UNESCO, 2017). Due to the paradigm shift in economic conditions and the rapid population growth in India, HEIs are facing significant pressures (Altbach, 2009). Unfortunately, the existing education system in India is not effectively holistic and sustainable, as it focuses on exams, rote learning, and outdated pedagogies rather than fostering creativity, critical thinking, experiential learning, and cognitive skill enhancement.

Meanwhile, universities in the UAE have already incorporated the SDGs into their courses, but there is a clear need to empower faculty members to effectively deliver the curricula to address global sustainability issues (Abo-Khalil, 2024). SDG-related training for teachers is scarce, resulting in inadequate resources for preparing them to teach students how to tackle global sustainability challenges (Leal Filho *et al.*, 2023). HEIs face barriers such as a lack of resources, limited awareness of sustainability literacy, and disconnected programs when it comes to incorporating and assessing SDG-related activities (Hansen *et al.*, 2021).

Higher education learning requires a higher order of thinking that is transformative. It challenges old beliefs, encourages readiness for change, and promotes flexibility and new perspectives. This process provides a platform for transcendence and a self-aware approach to life and learning (Sterling, 2021).

Hence, the problem lies not only in the integration of the SDGs into the curriculum but also in teacher training, resources, and a flexible curriculum, all of which face resistance to transformative teaching and learning. The objectives of this research are to identify the barriers to the incorporation of the SDGs into the higher education curriculum through a survey, to create opportunities for integrating the SDGs into the higher education curriculum, and to conduct a comparative analysis between Autonomous Engineering Colleges (AECs) and Autonomous Arts Colleges (AACs) regarding the integration of the SDGs into the higher education curriculum.

SAMPLE AND LIMITATIONS OF THE STUDY

The study included 82 colleges in South India, including both AECs and AACs in Tamil Nadu, Kerala, Karnataka, and Andhra Pradesh. The identities of the sampled colleges are not revealed. The study has limitations, such as the use of only 82 colleges as samples for the survey and the exclusion of deemed universities, IIMs, and IITs due to time constraints.

HYPOTHESES

1. Null Hypothesis H_{01} : There is no significant difference in the percentage level of SDG integration into the curriculum between AECs and AACs.
2. Null Hypothesis H_{02} : There is no significant difference in the barriers faced by AECs and AACs.

METHODOLOGY

A structured questionnaire covering barriers and strategies for integrating SDGs into the curriculum was designed to conduct the survey study. It targeted policymakers, educators, and administrators from various AECs and AACs. A Google Forms questionnaire was used for the survey, and the collected data were analyzed both quantitatively and qualitatively.

BARRIERS TO INTEGRATION OF SDGS INTO CURRICULUM

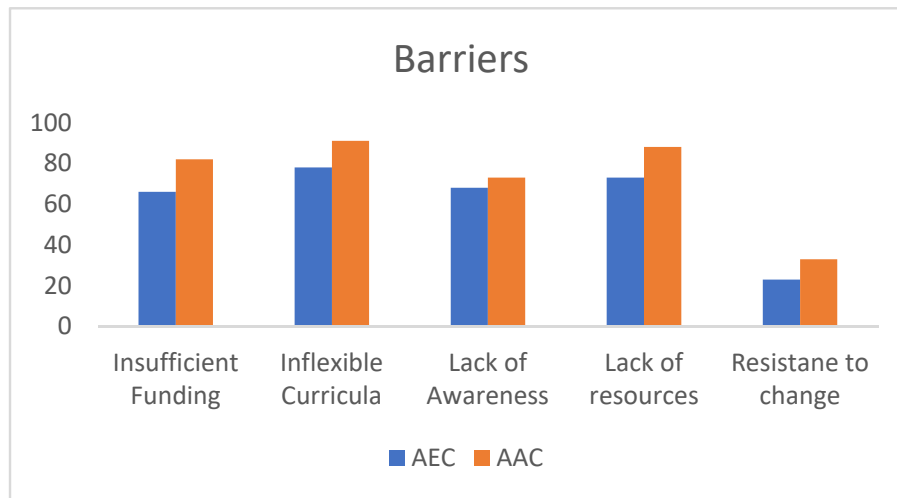


Fig. (1). Barriers. Source: Primary Data

- The highest barrier faced by both AECs and AACs is “inflexible curriculum” (Fig. 1).

CHAPTER 10

Fostering Stakeholder Engagement for Sustainable Higher Education Institutions: Challenges and Pathways

Charu Vaish^{1,*} and Lata Bajpai Singh¹

¹ *Department of Management Studies, Babasaheb Bhimrao Ambedkar University, Lucknow, India*

Abstract: Higher Education Institutions (HEIs) have an inherent obligation to contribute to sustainable societies. Several environmental, economic, and social factors shape this work and make it more complicated. This chapter analyzes how universities engage and collaborate with diverse stakeholders, including local communities, industries, and governmental organizations, to enhance their role in sustainable development. Conceptual in nature, this chapter draws on secondary sources such as books, published reports, articles, and research papers. It explores the role of HEIs in promoting sustainable development, which can be assessed through operational efficiencies on campus, the adoption of green technologies, optimization of buildings, and renewable energy initiatives. The findings highlight the significance of stakeholder engagement in advancing sustainability, particularly for HEIs. Additionally, the study examines barriers to stakeholder engagement and proposes strategies to overcome them.

Keywords: Higher Education Institutions (HEIs), Stakeholder engagement, Sustainability, Sustainable development.

INTRODUCTION

In decision-making, it is often said that too many chefs spoil the broth; however, in some cases, they add a flavor of sustainability, especially when faced with complex issues influenced by environmental, economic, and social challenges. This setting is particularly impactful for educational institutions, which play essential roles in promoting sustainability through diverse initiatives and stakeholder engagement. Sustainable development in higher education can be facilitated by integrating sustainable education, conducting research and

* **Corresponding Charu Vaish:** Department of Management Studies, Babasaheb Bhimrao Ambedkar University, Lucknow, India; E-mail: charucrg1@gmail.com

innovation to develop environmental solutions, and influencing policy development. Engaging with communities on sustainable practices, modeling eco-friendly operations on campuses, and building capacities through training are also crucial. Moreover, promoting ethical leadership, working globally to advance sustainability goals, ensuring social equity and inclusion, and maintaining accountability within institutions contribute to long-term sustainability. For this reason, sustainability is a fundamental responsibility of Higher Education Institutions (HEIs), which formally adopted this mission in conjunction with Agenda 21 during the Rio Summit in year 1992, positioning them at the forefront of sustainability promotion. Since then, the sustainability agenda has been integrated into their institutional missions.

The issue of sustainable engagement became a global concern for HEIs following the 2002 World Summit on Sustainable Development in Johannesburg. From 2005 to 2014, the United Nations established the Decade of Education for Sustainable Development (DESD), recognizing education as a vital resource for sustainable development in a prosperous, culturally diverse, and environmentally sensitive world (see UNESCO, 2007).

By means of the introduction of Agenda 2030 and the Sustainable Development Goals (SDGs), HEIs have increased their engagement in sustainable development. Agenda 2030, ratified by world leaders from 193 countries, provides a universal framework for humanity, guiding efforts toward a sustainable future. The knowledge universities develop through research is essential for implementing all 17 SDGs. Goals 4, 9, 12, 16, and 17 are deemed particularly relevant (Mader & Rammel, 2015), and following the Declaration of the 2030 Agenda, the role of education in fulfilling these goals became increasingly significant. Education is linked to SDG 4 and contributes to the objectives of five other goals mentioned above, and these goals are interconnected with many other SDGs in various ways (UNESCO, 2017). The framework emphasizes multisectoral and multinational partnerships while focusing on people, prosperity, and peace. The successful execution of this agenda relies on the collaborative efforts of governments, businesses, academia, and civil society, with higher education having a critical role.

As highlighted by the World Commission on Environment and Development (WCED, 1987), stakeholder engagement is essential for HEIs in promoting climate resilience and reducing carbon levels. HEIs serve as powerful institutions for dialogue and cross-sector cooperation (Vilalta *et al.*, 2018). Both internal stakeholders (such as leaders, staff, and administrative employees) and external stakeholders (including local, regional, national, and international entities) must

collaborate toward a shared vision, mission, and values that support sustainable development practices within institutions (Mathur *et al.*, 2008).

Effective stakeholder engagement involves openness, dialogue, resource allocation, and cooperative listening. It requires leadership commitment, a thoughtful understanding of stakeholders' needs, and systematic approaches to address environmental and market fluctuations (Rhodes *et al.*, 2014). Universities must actively involve their stakeholders, as their participation is crucial for sustainability efforts. Some researchers argue that stakeholder engagement is the only pathway to achieving sustainability (*e.g.*, Verhulst & Lambrechts, 2015).

Furthermore, four recognized dimensions of sustainability—economic, environmental, social, and institutional—are recommended to shape HEI functions, influencing education, research and innovation, operations, and community engagement (Fischer *et al.*, 2015). A study proposed adding a fifth dimension for HEI sustainability reporting to measure and communicate their sustainability efforts (Lozano, 2006). Additionally, Stephens *et al.* (2008) emphasized that sustainability must be implemented through institutions that include stakeholders. Beierle (2002) explained that stakeholder participation, facilitated by participatory processes, enhances the quality of environmental and societal choices. Thus, stakeholder involvement in decision-making within and outside institutions can be fostered through information sharing, consultation, collaboration, and empowerment.

Unfortunately, the involvement of stakeholders in institutional decision-making is often understated compared to other critical issues, such as policy development, vision setting, strategic formulation, investment planning, budgeting, and funding challenges. There is a noticeable lack of focus on stakeholder engagement, as evidenced by the minimal adoption of the AccountAbility 1000 series by HEIs (Godemann *et al.*, 2013). Many HEI representatives are unaware of the principles and goals of sustainable development (Nicolaidis, 2006). According to Waheed *et al.* (2011), even among those who acknowledge the significance of sustainability, efforts to incorporate it into programs and courses are still insufficient. Interestingly, it is important to note that HEI stakeholders have recognized that temporary or contract work is a significant barrier to making well-informed choices (Godemann *et al.*, 2014).

Evidence collected during the 2005–2014 UN Decade of Education for Sustainable Development (UNDESD) indicates that engaging stakeholders on sustainability issues promotes change through various channels, including curriculum development, campus management, research and development, engagement initiatives, and reporting. While several papers discuss the role of

CHAPTER 11

Green Practices Adopted by Higher Education Institutions for Campus' Environmental Sustainability

Neha Gautam^{1,*} and Lata Bajpai Singh¹

¹ *Department of Management Studies, Babasaheb Bhimrao Ambedkar University, Lucknow, India*

Abstract: As Agenda 2030 comes into action, it influences every sector, including Higher Educational Institutions (HEIs). The Sustainable Development Goals (SDGs) take a multidisciplinary approach with three pillars: (1) environmental, (2) social, and (3) economic. To achieve sustainability, fostering cooperation and partnerships between nations and their citizens is essential. This chapter focuses on the contributions of campus operations to advancing the SDGs, highlighting the environmental sustainability dimension of HEIs. It covers eco-friendly strategies in educational institutions, waste reduction and management, water management and rainwater collection, and electricity use and management. Based on the review of available literature, this chapter provides information on best practices within campus operations and emphasizes sustainable green practices in educational institutions. HEIs' positive approach to adopting green practices reduces their ecological footprint and sets standards for other organizations and communities. Green Campus (GC) practices contribute to global sustainability objectives and serve as examples for other institutions to enhance their environmental sustainability practices. This chapter presents various best practices demonstrating how HEIs can contribute to environmental sustainability and positively impact society. Educational institutions can create a sustainable future by fully integrating sustainability practices into their campus operations.

Keywords: Environmental sustainability, Green practices, Higher Education Institutions (HEIs), Sustainable Development Goals (SDGs).

INTRODUCTION

Agenda 2030 is a 15-year plan established by the Rio+20 Conference in 2012 to promote social progress, environmental preservation, and sustainable economic growth (United Nations, 2015).

* **Corresponding author Neha Gautam:** Department of Management Studies, Babasaheb Bhimrao Ambedkar University, Lucknow, India; E-mail: nehag786.ng@gmail.com

With a 2030 deadline, Agenda 2030 outlines 17 Sustainable Development Goals (SDGs) that serve as an urgent call to action for all nations. The five essential areas these goals cover are the 5 Ps: people, planet, prosperity, peace, and partnership (United Nations, 2015). These goals aim to create a more equitable, healthy, and just world (United Nations, 2019). Higher Education Institutions (HEIs) contribute to sustainable development through various initiatives. HEIs can address sustainability through several key approaches: (1) apply green practices in their institutional offices; (2) prioritize energy-efficient systems, waste reduction, and water management in green campus (GC) operations while offering courses on sustainable development; (3) engage in research projects through the establishment of research centers, publications, and funding for sustainability-related studies; (4) promote outreach and collaboration, including exchange programs focused on sustainability; (5) create sustainability through campus activities; and (6) establish mechanisms for reporting and evaluating sustainability (Lozano *et al.*, 2015).

HEIs must focus on three primary activities to achieve social responsibilities: active community participation, engagement in scientific activity, and promotion of education (Owens, 2017). These institutions can also contribute internally through teaching and research (Bessant *et al.*, 2019). By fostering a culture of innovation and collaboration, HEIs can effectively address societal challenges and enhance their impact on local and global communities (2015). This collaborative approach enriches the learning experience for students and empowers them to become change agents within their communities. As HEIs embrace these responsibilities, they pave the way for sustainable development and social equity. HEIs provide valuable input through sustainability reporting, which helps identify dominant social and environmental issues in any country (Salvia *et al.*, 2019). However, strategies and practices for integrating the SDGs into HEIs are still being developed, and sincere efforts are needed to achieve better results as the SDGs are adopted as their mission (An *et al.*, 2017). These efforts would help create future processes for managing higher education and guidelines for developing the SDGs, aligning them with the institutions' missions and how they will be achieved through Agenda 2030 (Leal Filho *et al.*, 2019). Moreover, the SDGs would also offer significant opportunities for scientific research to discover new solutions for sustainable development (Leal Filho *et al.*, 2019).

Technology and operational initiatives, including “greening” campuses, are central to university sustainability efforts (Leal Filho *et al.*, 2019). This approach is described as a three-stage process that universities can follow to foster sustainability: (1) optimization of institutional operations, which involves improving technical solutions and legal requirements; (2) transformation of organizations, where HEIs prioritize sustainability in both institutional behavior

and the attitudes of students, faculty, and staff; and (3) creating systems that aim to cultivate a broader sustainability culture within the institution (Adams *et al.*, 2018). Additionally, green activities in higher education, such as waste reduction, improved energy efficiency, and healthier working environments, can significantly enhance the quality of life, strengthen economic resilience, and reduce carbon footprint (CF) (Mat *et al.*, 2011). These initiatives have both direct and indirect impacts on the environment, highlighting the necessity for practitioners in HEIs to adopt comprehensive green solutions (Zakaria *et al.*, 2016). The significance of green practices is growing globally (*e.g.*, in Malaysia), where universities increasingly prioritize sustainability (Anthony Jnr *et al.*, 2019). Universities act as engines of societal transformation, nurturing future citizens and guiding them toward sustainability through education. To support these efforts, a Policy framework was developed by Anthony Jnr in 2021 to evaluate the contribution of educational institutions to sustainability by aligning environmental outcomes with the conditions required to achieve the SDGs. This approach allows universities to assess their impact on global objectives and sustainability advancements more effectively.

RESEARCH OBJECTIVES

- To study the role of HEIs in promoting environmental sustainability within the framework of the 2030 Agenda for Sustainable Development.
- To identify and analyze green practices adopted by educational institutions, focusing on energy consumption and management, water management, rainwater harvesting, and waste reduction.
- To offer insights into effective practices and strategies used by educational institutions to promote environmental sustainability.
- To explore the impact of green practices in educational institutions on both environmental sustainability and educational outcomes.

SIGNIFICANCE OF THE STUDY

Though limited studies have addressed all environmental sustainability indicators and aspects, and they are scattered as well, this study is an initiative to review the available literature on environmental sustainability initiatives in HEIs.

METHODOLOGY

Research Design

This study adopts a literature review-based methodology to examine how educational institutions are adopting green practices and their contributions to achieving the SDGs. The literature review provides information on existing research, allowing for an in-depth exploration of the themes and strategies

CHAPTER 12

Higher Education Institution Policies and Climate Change Response in Mozambique: An Alignment with SDGs

Herieta Massango^{1,*}, Malaquias Zildo António Tsambe¹ and Patrício Vitorino Langa²

¹ Faculty of Natural Science and Mathematics, Universidade Pedagógica de Maputo, Campus de Lhanguene, Maputo, Mozambique

² Faculty of Education, Universidade Eduardo Mondlane, Av. Julius Nyerere, Campus Universitário 3453 C, Maputo, Mozambique, and Ali-Mazrui Centre for Higher Education, University of Johannesburg, South Africa

Abstract: This study presents the current state of integration of Sustainable Development Goals (SDGs) in Mozambique's Higher Education (HE) sector. National HE policies and the policies of four universities were selected for analysis. Two public and two private universities encompass approximately 45.8% of the country's total student population. An assessment tool based on the 17 SDGs and Mozambique's commitment to the 2030 Agenda was developed for this analysis. NVivo 12 software was utilized to codify the sustainability indicators within the assessment tool. Following the policy analysis, we examined the alignment of higher education institutions' research and outreach activities with Mozambique's Climate Actions. Six universities—two from each of Mozambique's three regions (southern, central, and northern)—were selected for this purpose. The analysis revealed a weak integration of SDGs from a top-down perspective (from national to university policies). Notably, the universities' policies lack clear proposals for reducing poverty, ensuring access to clean water and sanitation, providing clean energy, and addressing climate change, life underwater, and life on land. When analyzing the research and outreach activities of universities in Mozambique concerning Goal 13: Climate Action, it was found that while these institutions actively engage in various projects related to Climate Action, there is a significant gap in alignment with national and local priorities. Specifically, more than 50% of the projects do not align with Mozambique's Climate Action indicators, targets, or even local Climate Action indicators.

Keywords: Climate action, Climate Change (CC), Higher education, Policies, Sustainable development goals.

* Corresponding Author **Herieta Massango:** Faculty of Natural Science and Mathematics, Universidade Pedagógica de Maputo, Campus de Lhanguene, Maputo, Mozambique; E-mail: herietamassango@gmail.com

INTRODUCTION

The National Strategic Plan for Education in Mozambique 2020–2029 underscores the importance of fostering a strong link between education, research, and practical applications to meet national objectives (MINEDH, 2020). This policy ensures that the Higher Education (HE) sector is vital in advancing the country's human capital, fostering innovation, and stimulating economic growth. By aligning educational outcomes with national development goals, it seeks to create a skilled workforce ready to meet evolving industry needs, drive research that supports innovation, and contribute to sustainable economic progress. Education is essential for a sustainable world. Education for Sustainable Development (ESD) equips learners with the knowledge and skills to make informed decisions and take responsible actions across social, economic, and environmental dimensions.

Besides being one of the 17 Sustainable Development Goals (SDGs), education is a means to achieve all other goals. It is undisputed that education is an essential tool for shaping and reshaping values to address challenges related to human behavior toward sustainability (Massango *et al.*, 2022; TWI2050, 2018). As tertiary education emerges as a vital component of societal development, universities have been called upon to lead society toward a sustainable future (Cheeseman *et al.*, 2019). Universities worldwide are increasingly engaging with global challenges in innovative ways. This widespread and diverse engagement addresses poverty, inequality, and global public health issues. However, while universities have made significant contributions to these global issues, there is less discussion about the role of Higher Education Institutions (HEIs) in addressing Climate Action through their policies (Aarts *et al.*, 2020; Chankseliani & McCowan, 2020).

Education is critical in ensuring that individuals acquire essential knowledge and develop the ability to use logic when making important decisions. Through education, people learn critical thinking skills that help them analyze information, weigh options, and understand potential outcomes. This foundation empowers individuals to make informed decisions in various areas of life, from personal choices to professional and civic responsibilities. How people address social, economic, and environmental issues will determine the success of sustainable development efforts (Kioupi & Voulvoulis, 2019). Mozambique has made significant progress toward sustainable development in recent decades. Despite facing challenges such as poverty, climate vulnerability, and periods of civil conflict, the country has focused on initiatives that promote economic growth, social development, and environmental sustainability. However, challenges remain, particularly in providing basic education and health services, as well as

strengthening resilience to climate change. This research aims to present the current picture of integrating the United Nations' Sustainable Development Goals (SDGs) within HEIs in Mozambique, considering the local context for realizing the global agenda. The study also assesses the level of contribution of Mozambique's HEIs to climate action by examining public perception, values, attitudes, and behaviors related to climate mitigation, adaptation, and resilience. Additionally, it analyzes the alignment of HEIs with the principles of SDGs.

THEORETICAL PERSPECTIVE

HEIs can be recognized as formal organizations with a structured framework arising from rationalized institutional rules, from a neo-institutional perspective, as endorsed by DiMaggio and Powell (1983), Hasse and Krücken (2013), Koenig and Dierkes (2011), Li and Du (2016), and Meyer and Rowan (1977). This study aims to understand HEIs' commitment to sustainability, considering that these institutions are situated within and influenced by other organizations and wider social forces. These organizations operate in environments shaped by broad rules, beliefs, conventions, and agendas that define an acceptable form of integration (DiMaggio & Powell, 1983; Li & Du, 2016). In this sense, organizational structure emerges in a highly contextual manner by creating policies, programs, conventions, and generalized principles that guide the products and services offered (Meyer & Rowan, 1977; Koenig & Dierkes, 2011). HEIs, as organizations, are driven to incorporate global practices and institutionalized procedures prevailing in society, guided by a universal comparative instrument of global integration (Hasse & Krücken, 2013).

The studies suggest an urgent need for HEIs to become isomorphic to achieve legitimacy in a globalized world (Hasse & Krücken, 2013; Koenig & Dierkes, 2011; Li & Du, 2016). Legitimacy presupposes a socially constructed system of norms, values, beliefs, and definitions, which reflects widespread and desirable perceptions of an entity's actions (Ndibuuza & Langa, 2020; Massango *et al.*, 2022). This movement is influenced by political factors, regulatory agencies, and resource providers such as governments and other research funding organizations (DiMaggio & Powell, 1983; Hasse & Krücken, 2013). The challenges faced by HEIs suggest a relational interconnectedness of processes through which development outcomes in one location are shared through linkage in other areas, characterizing the north-south global interconnection (Horner, 2020). The perspective of global development raises questions for approaches that view development solely as a challenge for the Global South (Hasse & Krücken, 2013). Despite these questions, there is a pressing need to address the global challenge outlined in the 2030 Agenda.

CHAPTER 13

Understanding the Sustainable Best Practice Initiatives: A Case Study on the University of Kerala Campus

U. Revathi¹ and S.R. Sheeja^{1,*}

¹ Department of Economics, University of Kerala, India

Abstract: Sustainable Development Goal 4, one of the 17 SDGs, calls for universal access to higher education, including universities, to support lifelong learning opportunities. Education, being a sustainable development goal in itself, also serves as an instrument for social transformation necessary for achieving other sustainable development goals. In this context, the role of Higher Education Institutions (HEIs) as drivers of sustainable development through teaching, operations, research, and knowledge transfer is widely recognised. HEIs in many developed countries have incorporated sustainable practices into their research, operations, academics, and community engagements. Indian campuses are also witnessing a shift toward sustainable practices; however, the pace of this transition is slow. Against this backdrop, the study aims to identify various sustainable best practices initiated by the University of Kerala on its academic campus as a case study. Established in 1937 as one of the first 16 universities in India, the University of Kerala has implemented several best practices in areas such as solid and organic waste management, green spaces and gardening, energy management, and water conservation. Despite certain limitations, its leadership in advancing environmental conservation and sustainable development is demonstrated by successful projects like the Harithalayam project.

Keywords: Agenda 2030, Best practices, Education, Higher education institution, Harithalayam, Kariavattom, Miyawaki, Sustainable development.

INTRODUCTION

The concept of sustainable development emerged in response to growing public awareness of environmental issues and the constraints of conventional development models, gathering attention at international forums in the 1960s and 1970s. Although the Brundtland Report is frequently attributed to popularising

* Corresponding author Sheeja S.R.: Department of Economics, University of Kerala, India;
E-mail: sheejasunil99@gmail.com.

sustainable development, its ideas were present in earlier development discourses, as evidenced by reports like “Limits to Growth” and the Stockholm Declaration (Purvis *et al.*, 2019). The Rio Declaration and Agenda 21, which emanated from the Earth Summit 1992, solidified the concept that environmental considerations must be integrated into development planning. Agenda 21 and, subsequently, Agenda 2030 established interrelated goals that go beyond national and sectoral boundaries. Most of the sustainable development goals incorporate the three dimensions of sustainability—social, economic, and environmental—into specific targets, fostering interactions between the goals. These interactions can be mutually beneficial and, at times, detrimental. Recognising these linkages and responding effectively can mitigate catastrophic shocks and system failures while taking advantage of opportunities from feedback loops to enhance the sustainability and resilience of systems (Barbier, 1987). Greater attention is needed on these linkages across three areas: (a) sectors, such as technology, finance, energy, and agriculture; (b) societal actors, such as local authorities, government, the private sector, and civil society; and (c) income levels—low, middle, and high-income countries (Stafford-Smith *et al.*, 2017).

The importance of education in achieving sustainable development has long been acknowledged (Stafford-Smith *et al.*, 2017). Education, as a sustainable development goal, also serves as a catalyst for the social transformation necessary for attaining other sustainable development goals (Ferrer-Estévez & Chalmeta, 2021). Education supports sustainability in two main ways: it fosters awareness, knowledge, attitudes, values, skills, and action, which ensure environmental protection and conservation, and it generates productive skills that contribute to social, economic, and environmental sustainability.

In this regard, Higher Education Institutions (HEIs) are recognised as playing an important role in building sustainable societies and new paradigms (United Nations, 2021). They are unique communities capable of pursuing and promoting sustainable development goals through teaching, operations, research, and knowledge transfer. Among the 17 sustainable development goals, SDG 4 (Quality Education), SDG 17 (Partnership), and SDG 11 (Sustainable Cities and Communities) underscore this (Dawodu *et al.*, 2022) by announcing and endorsing charters and agreements, as well as successfully implementing sustainable development initiatives, HEIs are demonstrating an increasing commitment to sustainability (Aleixo *et al.*, 2018). While HEIs in many developed countries have adopted sustainable practices across research, operations, academics, and community engagements, Indian campuses are also beginning to embrace these practices, albeit at a slower pace (Parvez & Agrawal, 2019). This study seeks to identify various sustainable best practices initiated by the University of Kerala on its academic campus.

Methodology

This study employs a descriptive research design to identify the best sustainable practices implemented at the University of Kerala campus. To categorise these practices, the broader dimensions of the IGBC Green Campus rating system, excluding sub-indicators, were utilised. This comprehensive rating system focuses on eight core areas: site planning and management, sustainable transportation, water conservation, energy efficiency, health and wellbeing, sustainable maintenance and operations, material resources and management, and innovation in design. Detailed document analysis of reports, publications, and other relevant documents was conducted to identify specific initiatives and their outcomes. Additionally, informal interactions with key informants, students, and on-site observations were undertaken to gather pertinent information.

University of Kerala: A Profile

The Travancore University, now known as the University of Kerala, was established in 1937 as one of the first 16 universities in India and has played a significant role in reshaping higher education in Kerala. With statewide jurisdiction, the University of Kerala was formally established in 1956, becoming the “Mother University” that would give rise to all subsequent universities in the state. The motto of the university, “Karmani Vyajyathe Prajna”, translates to “Wisdom manifests in actions”, emphasising the importance of translating knowledge into tangible action (University of Kerala, n.d., *Annual Report 2022*). Its logo, featuring a lotus with a conch shell and a traditional book alongside a palm-leaf manuscript, symbolises the pursuit of enlightenment.

The University of Kerala, comprising 43 teaching and research departments, has experienced tremendous changes in recent decades, achieving notable academic accomplishments such as the 88th position in QS World Ranking for Asia 2025 (Southern Asia), the 9th rank in the NIRF India State Public University Category, and a NAAC grade of A++ in 2022. The institution’s commitment to academic excellence and innovative research is highlighted by these rankings.

The university aims to cultivate a vibrant intellectual community that fosters original research, creative learning, and an entrepreneurial mindset. By providing comprehensive education, the university aspires to instill in its students a strong sense of social and ethical responsibility, critical thinking, and creative entrepreneurship. Through a carefully curated curriculum and continuously evolving academic and administrative processes, the university seeks to empower students to become enlightened global citizens capable of addressing societal challenges with empathy, conviction, and a global perspective. The university also

CHAPTER 14

Sustainability Leadership in the Context of Education for Sustainable Development in Higher Educational Institutions

Bhumika Chavda^{1,*}, Rajasshrie Pillai¹ and Choden Goperma¹

¹ *Pune Institute of Business Management, Pune, India*

Abstract: With the rapid pace of socio-political and economic evolution, nations worldwide have experienced not only the benefits of such remarkable developments but also the negative consequences associated with them. Unfortunately, these negative effects are linked to unsustainability that has infiltrated almost every sphere of a nation's growth trajectory. Unsustainability, rather than being merely an environmental concern, is now relevant across all domains of production, consumption, and services. Education will be prioritized to understand this concept. This chapter focuses on the concept of Sustainability Leadership in Higher Education Institutions (HEIs), incorporating the values of Education for Sustainable Development (ESD). The goal is to explore the interconnectedness of these three mutually inclusive concepts, suggesting that the implementation of ESD in HEIs can significantly promote the emergence of sustainability leadership.

Keywords: Education, Higher educational institutions, Leadership, Sustainability leadership, Sustainable Development Goals (SDGs), Sustainable development, Youth.

INTRODUCTION

Natural assets and endowments around the globe have suffered tremendously as a consequence of an unprecedented pace of development, especially in the economic domain. Nonetheless, the dearth of requisite social action to address this issue is concerning (Chams & García-Blandón, 2019). The prevailing environmental catastrophe is an aftermath of the abrupt and alarming alteration of nature and its organic processes by humans over the past century. This human interference has also led to a noticeable impact on the socio-ecological

* **Corresponding author Bhumika Chavda:** Pune Institute of Business Management, Pune, India;
E-mail: bhumika.chavda@pibm.in

frameworks. If commitment toward the environment on a global scale continues to take a backseat, a ‘point of no return’ may be reached in a few years (Ruiz-Mallén & Heras, 2020). Organizations have begun placing greater emphasis on sustainability and social responsibility rather than merely yielding profits, with objectives encompassing environmental accountability and social results (Elkington, 1997).

The Brundtland Report portrays sustainability as an advancement that adheres to contemporary demands by not jeopardizing the capacity of future generations to satiate their subjective requirements (Ozbekler & Ozturkoglu, 2020). Evolving studies demonstrate that the current social emergencies are, at their essence, interpersonal crises, stemming from a loss of awareness about who we are, what we share, and our relationships with others (Wamsler *et al.*, 2024). In this context, focusing on the facets to address these concerns is the need of the hour, not only in the core sectors that usually receive attention but across all relevant sectors of the socio-politico-economical setting. The 2030 Agenda for Sustainable Development, adopted by the UN General Assembly in 2015, encompasses 17 Sustainable Development Goals (SDGs) and 169 targets. The goals cohesively integrate the three aspects of sustainable development—economic, social, and environmental. They are rooted in the concept of the Five Ps: People, Planet, Prosperity, Peace, and Partnership (UN General Assembly, 2015).

Standpoint of Higher Educational Institutions

Growing enthusiasm for sustainability education has emerged alongside the academic domain of sustainability, focusing on comprehending and addressing the complex challenge of ensuring well-being for both present and future generations. Education has also aligned with the increasing proportion of people, governments, businesses, and NGOs in pursuing corporate targets pertaining to Environmental, Social, and Governance (ESG) concerns, as well as those linked to the SDGs. A growing number of graduates—and individuals in general—acknowledge the urgency of a deliberate, all-encompassing sustainability curriculum that emphasizes inclusive well-being.

Universities and other Higher Educational Institutions (HEIs) can engage in cultivating capacities to address sustainability issues with a prudent and innovative approach in addition to raising awareness about the origins and repercussions of the persisting environmental emergency (Ruiz-Mallén & Heras, 2020). Traditionally, universities have served as educational and learning hubs for the next generation of intellectuals, scholars, and thinkers, while presenting abundant opportunities for personal development and well-being. The implications and portrayal of this viewpoint have progressively shifted to include

ecological leadership and management, public engagement, community revitalization, and social accountability (Chakraborty *et al.*, 2021).

The contribution of HEIs in fostering the advancement of sustainable communities is garnering substantial acknowledgment. By tapping into a special mix of competencies, they shape the outlooks and principles of potential leaders in academia, industry, and politics, thus acting as dynamic catalysts for revolution. The 1972 Stockholm Declaration on the Human Environment was the inaugural document that definitively addressed the importance of achieving the SDGs. The UN Higher Education and Research for Sustainable Development (HESD) platform and the UN Higher Education Sustainability Initiative (UN HESI) provide two recent examples of the commitment being made in this regard (Findler *et al.*, 2019).

India's educational system has undergone substantial advancements in recent years. It is widely contended that education has infiltrated the business sphere due to the expansion of private educational institutions and the rising costs of education. With increasing tuition fees and the growth of private schools, education has become a profitable industry in India. While recognizing the importance of a sustainable budget is crucial, action must also be taken to ensure that education is inclusive and accessible to all (mbagdttopics, 2023). As education establishes its presence in the business domain, the sustainability aspect becomes increasingly prominent.

The World Education Forum, held in Incheon, Republic of Korea, in 2015, aimed to ensure accessible, high-quality education for every individual while simultaneously providing opportunities for lifelong learning. However, achieving these objectives heavily depends on strong educational leadership that promotes improved learning outcomes (Ramakrishnan, 2024). The Sustainable Development Goal (SDG) 4 was endorsed by global leaders with the mission of guaranteeing inclusive and equitable quality education and encouraging opportunities for continuous learning for individuals. To accomplish this, leadership education is crucial. This is evident in the UNESCO Global Education Monitoring Report, which views educational leadership as essential for achieving this objective. It ensures high-quality instruction by establishing clear standards and promoting student development.

TRAVERSING THE PATH OF SUSTAINABILITY LEADERSHIP

The essence of sustainability and the risk of unsustainability require a complete overhaul of epistemology and, consequently, education. Changes in educational programs, instructional design, policy, and institutional frameworks must take place (Antink-Meyer, 2023).

Appendices

APPENDIX A

What is your name? (open)

Where have you obtained your previous higher education from? (open)

What degree(s) did you obtain? (open)

Are you a fee-paying student? (y/n)

*[The remainder of the questions in the survey ask students to respond using the Likert scale
1=strongly disagree, 5=strongly agree]*

General Assessment

I am happy with my learning experience during the MSD program.

I would not make any changes to the MSD program.

I have greatly increased my environmental literacy because of the MSD program.

The MSD program is a great example of successful environmental education.

I enjoyed the courses at Uppsala University.

I enjoyed the courses at the Swedish University of Agricultural Sciences.

Content-based

Knowledge (environmental literacy)

This program has equipped me with a substantial understanding of the following:

Sustainable development.

Sustainability challenges.

Environmental crises.

Environmental, economic, and social interrelations.

Mitigation/adaptation strategies various countries have set in place.

How to develop mitigation/adaptation strategies in my field.

Skill building

I feel well equipped to:

Take climate action.

Lead climate-related projects.

Critically approach environmental issues.

Apply systems thinking to environmental issues.

Approach environmental issues from an interdisciplinary perspective.

Identify the effect of social and cultural factors on environmental issues.

Organization-Based

The MSD program was well organized in terms of:

Overall organization.

Having courses that relate to each other.

Ensuring students reach the course objectives/goals.

Implementing the program at two universities.

Offering an inclusive learning environment.

Offering a culturally responsive environment.

Instructional Effectiveness

Courses in the MSD program had:

Knowledgeable teachers.

Well-taught lectures.

Cohesive lectures.

Assignments that developed my understanding of the subject.

Engaging assignments.

Engaging topics.

Usefulness

The knowledge, skills, and tools obtained from the MSD are useful in:

My everyday life.

Contributing to Sustainable development.

Building my career.

Building my professional skills.

Increasing my employability.

Attitudes/Behaviours/Lifestyle Impacts

Taking the MSD program has increased my:

Environmentally-friendly behaviours.

Sense of personal and civic responsibility.

Individual commitment to actively engage with environmental issues.

Desire to teach others what I have learned.

Sense of agency.

Sense of empowerment.

Ethical/moral/value changes

The MSD program has impacted my:

Ethics

Lifestyle

Morality

Values

Carbon footprint

Personal connection

I can relate what I have learned in the MSD program to:

My own passions and interests

My previous education

Real-world problems

Appendix B

Interview Base Questions

STUDENTS

- What motivated you to take the master's in sustainable development?
- Now that we're coming to the end of the master's program, how do you feel about your expectations in comparison to the outcome? ¹
- What are your general thoughts about the MSD program?
- Tell me about a time when you faced some challenges or felt frustrated during the program.
- Take me through some of the highlights of your experience taking the program.
- What do you think are the three most important things that should be a part of effective environmental education?
- I'm going to be talking to teachers, course directors, program directors, and educational admin. Is there anything that you think is important that I pass on to them or address in the interviews?

TEACHERS

Each teacher had a unique role in relation to the course they represented, so the structured questions were used as vague guidelines for the interview, but most questions asked were contextual.

- What was your vision for the lecture?
- What are the three most important takeaways students should have from the course?
- How does this relate to environmental sustainability?
- What challenges did you face when you were planning or facilitating the lecture/educational activities?
- What do you think are the most important things to include in effective environmental education?
- What are some of the strengths of the course?
- Is there anything that you think that you'd like to add or comments, or something you think I missed those important to say?

COURSE COORDINATORS

In addition to the structured questions, the course coordinators were asked questions adapted from the responses of the students to target specific topics that were addressed regarding the course they were responsible for.

- Tell me about your vision for the course.
- What are the three takeaways students should have from the course?
- What kind of challenges did you face when you were facilitating or planning the course?
- What are the strengths of the course?
- What do you think are three important aspects of effective environmental education?

PROGRAM DIRECTOR

- What was your vision and in organizing and creating this program?
- What kind of things did you do in the program to help accomplish this vision?
- What are the most important things to include in environmental education?
- What do you think are some weaknesses of the program?
- What are the strengths of the MSD program?
- Is there anything else you think it's important to express?

PROGRAM BOARD MEMBER

- What checklist runs through your mind when determining if a change is beneficial to the program?
- What do you think is the best version of the program?
- What are the most important things you think should be included in environmental education?
- What are the weaknesses of the MSD?
- What kinds of challenges or frustrations do you encounter in relation to the program?

SUBJECT INDEX

A

Academia 9, 38, 53, 116, 155, 227
 Academic curricula 13, 104
 Accountability 8, 135, 146, 156, 159, 165, 234
 Adaptability 24
 Adaptation 24, 66, 82, 194, 198, 199, 204, 205, 229
 Advocacy 69, 128, 159, 177
 Aesthetics 92, 122
 Afforestation 119, 212, 213, 214
 Agent-based models (ABMs) 115
 Agroecology 11, 218
 Air quality 11, 181, 188
 Anthropocene 114, 115
 Anthropogenic stocks 114, 115
 Application of science and technology in rural areas (ASTRA) 101
 Architecture 11, 106, 122
 Arts 86, 87, 91, 92, 93, 94, 97, 101, 103, 104, 105
 Assessment 47, 118, 119, 128, 146
 Astronomy 104, 106
 Atmosphere 10, 157, 159
 Attributes 96, 121, 233
 Autonomy 31, 44
 Awareness 14, 62, 75, 78, 140, 152, 184, 209, 220, 226
 Ayurveda 87, 104, 105, 212

B

Behavioral changes 166, 168
 Beliefs 9, 86, 149, 194, 228
 Best practices 13, 14, 127, 129, 137, 145, 174, 208
 Biochemistry 214
 Biodiversity 97, 119, 132, 212, 213, 214
 Biodiversity conservation 214, 218, 220
 Biogas 219, 220
 Biological treatment 219
 Biotechnology 120, 214, 217

Botany 215

C

Capacity building 23, 132, 133, 141, 145, 167
 Carbon emissions 42, 123, 186, 220
 Carbon footprints 10, 176, 220
 Circular economy 188
 Clean energy 10, 132, 141, 143, 201, 220
 Climate action 131, 132, 136, 143, 192, 194, 196, 198, 199, 200, 201, 202, 205
 Climate change mitigation 198, 205
 Cognitive skill enhancement 149
 Collaboration 6, 8, 12, 13, 14, 41, 124, 127, 131, 137, 140, 164, 167, 175
 Commitment 44, 142, 144, 186, 204, 205, 211, 216, 218, 220, 221, 226, 227
 Competencies 21, 22, 24, 35, 54, 80, 128, 148, 149, 227
 Competitiveness 20, 21, 23, 122
 Complexities 10, 35, 75, 76, 81, 95, 113, 116, 158, 234
 Conservation 97, 119, 209, 213, 214, 220
 Constraints 120, 167, 208
 Creativity 18, 21, 23, 35, 64, 65, 87, 94, 181, 234
 Critical thinking 6, 18, 78, 100, 130, 132, 148, 149, 210, 229
 Cultural diversity 118, 199, 233
 Curriculum development 54, 95, 103, 156, 195, 236

D

Data analysis 71, 151
 Decarbonization 181
 Demographics 230
 Design thinking 55
 Digital learning 14
 Digital tools 14, 20, 136
 Digitization 4
 Disaster management 218

Subject Index

Disparities 20, 29, 113, 117, 187, 204
Diversity 24, 25, 26, 47, 55, 89, 94, 166, 232, 234

E

Eco-conscious behaviors 6
Ecological footprint 143, 144, 174
Economic development 42, 54, 65, 117, 129, 233
Ecosystems 10, 201
Education for sustainable development (ESD) 1, 6, 7, 36, 155, 156, 193, 195, 225, 228, 229, 233, 234, 235, 236
Efficiency 130, 161, 181, 210, 216
Empathy 231
Empowerment 8, 120, 156, 167, 232, 237
Energy audits 144, 218
Energy management 179, 183, 185, 208, 212
Engagement 20, 25, 40, 42, 155, 160, 162, 165, 166, 167, 186, 193
Entrepreneurship 163
Environmental consciousness 233
Environmental sustainability 35, 119, 120, 174, 176, 185, 188, 193, 209, 218, 220
Epistemology 227
Equity 19, 25, 28, 146, 186
Ethics 107
Evaluation 9, 23, 49, 74
Experiential learning 1, 7, 39, 64, 136, 142, 149
Expertise 5, 54, 159, 230

F

Faculty members 19, 24, 26, 39, 40, 46, 75, 78, 80, 149
Fairness 23, 119, 133
Feedback 77, 82, 166, 231
Financial resources 27, 134, 137
Floriculture 214
Food security 10, 213

G

Gender equality 11, 18, 28, 29, 30, 31, 58, 119, 120, 124, 145
Gender equality plans (GEPs) 29
Global citizenship 132, 136, 140, 142, 199
Global governance 112

Integrating SDGs and Educational Outcomes 247

Globalization 1, 4, 5, 37, 64, 116, 117
Governance 12, 40, 42, 45, 113, 119, 120, 121, 144, 159
Green campus (GC) 143, 174, 175, 210, 212
Green practices 174, 175, 176, 177, 178, 180, 181, 182, 185, 186, 187
Greenhouse gas 10, 12
Groundwater 180, 215

H

Hazardous waste management 219
Health 12, 87, 91, 100, 106, 177, 178, 210, 216, 220
Healthcare systems 106
Heritage 92, 93, 95, 97, 101, 102
Higher education sustainability initiative (HESI) 143, 227
Holistic development 86, 87, 92
Horticulture 105
Human capital development 128
Human development index (HDI) 100
Humanities 2, 12, 39, 70, 86, 92, 101, 105, 115, 155

I

Inclusivity 3, 4, 18, 120
Indian knowledge systems (IKS) 86, 88, 89, 90, 91, 92, 93, 94, 95, 97, 101, 104, 105, 106, 107
Indigenous knowledge 88
Industrial ecology 114
Information and communication technology (ICT) 23
Infrastructure 10, 11, 24, 43, 123, 132, 134, 144, 199, 204, 219
Innovation 10, 11, 19, 35, 87, 106, 119, 120, 123, 161, 163, 193
Institutional commitment 1, 9, 138
Integrity 37, 121
Interconnectedness 4, 39, 97, 225
Interdisciplinary approaches 129, 131, 152
Internationalization 4

K

Knowledge creation 5, 9
Knowledge transfer 1, 4, 128, 208, 209

L

Labor market 57, 60, 64, 65, 66
 Leadership 25, 29, 138, 142, 143, 220, 225,
 229, 230, 232, 234
 Lifelong learning 2, 64, 66, 133, 159, 227
 Literacy 90, 142

M

Management 2, 6, 7, 11, 26, 35, 39, 94, 107,
 130, 135, 164, 165, 180, 181, 195, 211,
 218
 Marketplace experience lab (MPEL) 163
 Master's programme in sustainable
 development (MSD) 69, 70, 71, 74
 Materialization 204
 Mathematics 104
 Mental health 217
 Methodologies 27, 47, 115, 164
 Mitigation 12, 178, 194, 198, 199, 204
 Modernisation 87, 97, 101
 Multidisciplinary approaches 2, 12, 135, 145,
 174

N

Nanotechnology 103, 120
 National education policy 86, 93, 94, 95, 197
 Natural language processing 105
 Natural resources 6, 10, 12, 37, 80, 81, 97,
 107, 115, 177

O

Objectives 2, 4, 5, 12, 41, 54, 107, 112, 115,
 149, 155, 161, 166, 167, 176, 177, 193,
 199, 212, 214, 226, 227
 Online learning 136
 Operations 6, 42, 46, 47, 127, 128, 133, 134,
 135, 141, 144, 145, 155, 156, 157, 159,
 162, 165, 184, 185, 188, 208, 209, 210
 Organizational structures 3, 46, 64, 70, 135,
 194

P

Partnerships 12, 13, 14, 40, 41, 42, 45, 49,
 107, 132, 136, 137, 138, 139, 145, 155,
 159, 174, 175, 177, 178, 200
 Pedagogy 60, 64, 65, 100, 141, 231, 234, 236
 Perceptions 78, 161, 165, 194
 Philosophy 87, 96, 97, 102, 214, 217
 Policy analysis 69, 192, 196
 Poverty reduction 4, 123, 177
 Professional development 26, 40, 93, 140, 152
 Prosperity 5, 93, 97, 101, 155, 175, 177, 226,
 230
 Psychology 106
 Public health 12, 13, 94, 218

Q

Quality education 5, 6, 18, 19, 27, 28, 30, 31,
 35, 37, 199, 200, 227

R

Rainwater harvesting 176, 180, 215, 220
 Recycling 11, 140, 144, 162, 180, 182, 184,
 186, 188, 219
 Renewable energy 10, 12, 132, 134, 136, 137,
 138, 139, 142, 143, 145, 154, 168, 184,
 216, 218, 220
 Research and innovation for sustainable
 development 134
 Resilience 8, 176, 194, 198, 199, 201, 204,
 205, 209
 Resource optimization 138
 Responsibility 1, 2, 21, 39, 65, 66, 97, 133,
 134, 138, 155, 160, 175, 210, 226, 231,
 233, 235

S

Scientific research 8, 101, 157, 159, 175
 Self-reliance 92
 Sexual harassment 18, 29, 30, 31
 Social equity 2, 39, 119, 132, 155, 175, 233
 Social justice 13, 25, 34, 53, 141, 232
 Socio-ecological systems (SESs) 115
 Stakeholder engagement 145, 154, 155, 156,
 157, 158, 161, 163, 164, 165, 166, 167,
 168

Subject Index

Strategic planning 45, 139, 143, 183, 197,
199, 200
Sustainability education 1, 5, 6, 9, 13, 14, 54,
128, 226, 235
Sustainable development goals (SDGs) 5, 34,
38, 39, 42, 49, 101, 107, 116, 117, 118,
120, 121, 122, 123, 131, 136, 137, 143,
144, 145, 146, 158, 177, 187, 194, 195,
199, 204, 221
Sustainable development solutions network
(SDSN) 12, 14, 38, 129, 132
Systems thinking 69, 76, 77, 82

T

Technical and vocational education and
training (TVET) 54, 55, 57, 58, 61, 62,
63, 64, 65, 195
Technological advancements 10, 13, 120
Technology transfer 119
Transdisciplinary education 141
Triple bottom line (TBL) 39

U

Universal design 211, 219
Urban planning 11, 12, 104, 135, 209, 221
V
Value education 103
Vision 1, 4, 21, 57, 97, 107, 115, 121, 122,
139, 142, 143, 199, 211

W

Waste management 11, 42, 66, 144, 180, 187,
188, 208, 218, 220
Water conservation 144, 181, 185, 208, 210,
215
Wellbeing 106, 210

Y

Yoga 87, 106, 217, 220

Integrating SDGs and Educational Outcomes 249



Rimple Manchanda

Dr. Rimple Manchanda is an academician, researcher, and academic leader with over 19 years of experience in higher education, research, and institutional development. She is currently Professor at Manav Rachna University and has served at reputed institutions including Sharda University, GD Goenka University, Galgotias University, and Amity University. She holds a Ph.D. in Management and qualifications in Economics, Finance, and Psychology, along with UGC-NET certification.

Her interdisciplinary research focuses on behavioural economics, consumer behaviour, sustainability, climate change awareness, financial inclusion, vulnerability studies, and change communication. Dr. Manchanda has published extensively in Scopus and Web of Science indexed journals and collaborated with scholars from the United States, Poland, and the United Arab Emirates. She has led funded research and consultancy projects supported by ICSSR, NGOs, and universities on climate change, sustainable development, child rights, and socio-economic resilience.

She has also contributed to doctoral supervision, faculty development programmes, and research training. In addition, her corporate experience with HDFC Bank, Citi Financial, and RBL Bank strengthens her academic and industry perspective.



Priya Jindal

Dr. Priya Jindal is currently working as a Professor and Assistant Dean of Commerce at Chitkara Business School, Chitkara University, Punjab, India. She holds Master's degrees in Commerce and Economics. Her areas of interest include Banking, Finance, Insurance, and General Management. She had achieved distinction in her M.Phil. in 2009. She earned her Doctorate in Management in 2014 from Maharishi Markandeshwar University, Mullana, Haryana, India. She has contributed approximately 17 years to teaching. She has supervised seven Ph.D. scholars and two M.Phil. candidates. Numerous research papers, book chapters, and conference papers (including IEEE) have been indexed in Scopus. She has presented her work at various national and international conferences. She has filed over 14 design patents and 12 utility patents. Two copyrights have been granted in her name. Dr. Jindal has an editor of five edited books under IGI Global, Nova Science, and CRC publications, all of which have been indexed in Scopus. She has also chaired many national and international conferences.



Naseem Abidi

Dr. Naseem Abidi is an academician and researcher with qualifications in Statistics, Operations Research, Future Studies and Planning, including a Ph.D. and M.Tech. from institutions in India. He has an outstanding academic record with merit scholarship, university rank, and gold medal recognition. Dr. Abidi began his professional career with the National Informatics Centre under the Government of India before transitioning to academia. He has taught and managed academic operations at reputed universities and business schools in India, the United Kingdom, and the United Arab Emirates. His expertise includes academic administration, accreditation, rankings, sustainability, supply chain management, strategic management, research methods, and innovation. He has supervised doctoral research and published extensively in international journals and conference proceedings.