Praise for *Information for Sustainable Development*

'*Information for Sustainable Development* addresses timely topics associated with achieving the targets of the Sustainable Development Goals (SDGs) in a global information society. The authors are knowledgeable in the SDGs as well as the data generated and collected by information systems, information-seeking behaviour, digital information literacy, and education for information professionals. They provide an overview of how the SDGs can be integrated into an information society and identify the opportunities and challenges related to this. Centering the discussion of the SDGs on people and highlighting the importance of measuring the success of the integration of the SDGs into the global information society differentiates this book from others.'
Lynn Silipigni Connaway, Executive Director, Research, OCLC

'In *Information for Sustainable Development* Gobinda and Sudatta Chowdhury build on their extensive careers and expertise to support librarians, information scientists and many others who confront sustainable development goals (SDGs). They cover the full spectrum of what should be considered, ranging from core concepts such as information and data to information activities such as information seeking, information literacy, metadata, digital skills, the digital divide and the link between information and the SDGs. *Information for Sustainable Development* succeeds in widening the perspectives of how we address sustainable development and search for solutions. The content touches every facet of life: everyday, education, research and professional development. This is certainly an exciting, well-structured and thought-provoking book that would stimulate the training of librarians and information scientists, and that can guide policymakers to recognise the importance of information and its intersection with people and technology in addressing sustainable development.'
Professor Ina Fourie, Department of Information Science (iSchool), University of Pretoria, South Africa

'*Information for Sustainable Development* is a comprehensive volume which addresses the key challenges of achieving the UN's Sustainable Development Goals (SDGs) through the lens of information science, demonstrating the importance of information, people and society in achieving the SDGs. It underscores the significance of data, metadata, and information in evaluating achievements, tackling problems, and enabling collaboration. Written in an accessible and engaging style, this book will support students, academics and professionals in the field of information, as well as those working with SDGs

in other fields, fostering cross-disciplinary synergies in addressing the complex societal challenges.'
Professor Koraljka Golub, Head of iInstitute, Linnaeus University, Sweden

'This book is highly recommended to scholars and students who wish to gain a solid understanding of the relationship between sustainable development and information science. The book offers a lucid and in-depth analysis of the information dimensions that directly impact the United Nations' Sustainable Development Goals associated with poverty, hunger, health, education, climate, and justice. Clear descriptions of the foundational principles of information science provided in the initial chapters are particularly helpful, making the monograph accessible to a wider audience. The coverage of critical data standards, robust information management systems, and information literacy skills and how they help in addressing public sector organizational capacity and competency demands is timely and deserves our attention.'
Professor Javed Mostafa, Dean, Faculty of Information (iSchool), University of Toronto, Canada

'Gobinda and Sudatta Chowdhury bring their wealth of knowledge and expertise to *Information for Sustainable Development.* With the Sustainable Development Goals of the United Nations becoming ever more important, this volume presents a timely and valuable exploration of information science's role in the measurement of those objectives. In our increasingly data-driven world, an evaluation of the part played by data, metadata, and information is crucial for developing an understanding of the extent to which these global challenges are being addressed. This book provides an excellent exploration of the subject and makes a strong contribution to wider discourse on global sustainability.'
Professor Peter Reid, School of Creative and Cultural Business, Robert Gordon University, Scotland

'Gobinda and Sudatta Chowdhury's book *Information for Sustainable Development* addresses a critical contemporary issue that has implications for the planet. The authors discuss both the kind of information needed to make sustainable development possible, and how to determine the degree of progress using both direct and indirect measures. Data collection is a key issue, and another is the use of metadata to match the indicator data to criteria for success. The authors look internationally at both the European Union and the G20 countries, including the UK, when talking about the digital divide and the factors that cause it. They emphasize the importance of both digital

and information literacy for employment, health, education, and environmental literacy and the role of these factors in understanding and combating climate change. This is a book that everyone who cares about the state of the planet should read.'

Professor Michael Seadle, Humboldt-Universität zu Berlin (iSchool), Germany and Executive Director, iSchools.org

'If you are an information professional and wonder how today's craze of data analytics and artificial intelligence can support the development of a sustainable world, this is a book that you absolutely cannot miss. The book serves not only a critical teaching need, because it provides clear definitions, ideas and knowledge for information students, but it will also become an essential reference for future academic studies, because it constantly challenges existing knowledge and presumptions about how information leverages social development.'

Professor Lihong Zhou, School of Information Management (iSchool), Wuhan University, China

Information for Sustainable Development

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Information for Sustainable Development

Technology, People and Society

G. G. Chowdhury and
Sudatta Chowdhury

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To Avirup, Caitlin and Anubhav,
who continue to inspire us. . .

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Sudatta Chowdhury, BSc, MSc, MPhil, PhD, is a Research Associate in the Department of Computer & Information Sciences at the University of Strathclyde in Glasgow, UK. Previously, she had held several academic and research positions at universities in the UK, Singapore and Australia. Her research focuses on information-seeking behaviour and human-centred challenges for access to information, including digital divide and digital and information skills. She has co-authored five books and several journal and conference papers and book chapters.

Both authors are currently involved in externally funded research projects on libraries for a sustainable future. They are regularly invited to deliver talks on libraries, SDGs and climate change on national and international platforms.

Introduction

The Sustainable Development Goals (SDGs) that were proposed by the United Nations (UN) and adopted as UN Resolution A/RES/66/288 in 2015 are a set of 17 universal Goals and 169 associated Targets that have implications for everyone in every country and society, at present and in the future. Consequently, countries around the world signed up to the UN Resolution, accepting and agreeing to work towards achieving the Targets of the SDGs by 2030. Numerous reports, research papers, books and web resources have since appeared, discussing the benefits, progress, challenges and needs for co-operation and collaboration for achieving the SDGs that touch upon almost everything in each country, each society and each individual in the world.

This book offers an information science perspective on measuring the performance and assessing progress in achieving the SDGs. The primary focus is on the role and use of data, metadata and information in measuring the achievements and progress in different SDGs, and the standards and tools developed by international and national agencies to support this work. The book introduces the concepts and principles of information science and data management to people without a specialist background in those areas and similarly promises an introduction to the concepts and principles of sustainable development and sustainable information, before moving on to consider the current state of collection, management and use of different kinds of data for the SDGs at global and national levels, followed by chapters dealing with particular issues and specific Goals and Targets.

Overall, the book discusses the role and importance of data, information, people and society in achieving the Targets of the SDGs. It discusses the different types of metadata required for capturing data and information related to the Targets of different SDGs and various associated challenges, such as data availability and completeness, and even challenges associated with metadata and data collection, such as qualitative versus quantitative data for some Targets and Indicators. Appropriate data, charts and tables have been used from different reports and statistics from the various UN agencies,

OECD and EU, as well as national agencies such as the ONS (Office for National Statistics) in the UK.

The book argues that in addition to data and technology, different human and social issues, and their associated challenges, are also very important for achieving success in different SDGs and the associated Targets. For example, it critically analyses some datasets around SDG16.10, focusing on the access-to-information legislations and the digital and information skills that are required to access the relevant data and information – arguing and demonstrating that unless people's skills are improved and the digital divide in society and communities is reduced, legislation alone cannot guarantee the intended goal of access to information for all in every country and society.

The book is composed of four distinct but related sections that aim to discuss the background, the metadata, the Targets and Indicators of the 17 SDGs and progress in the SDGs at international and various country levels; then it moves on to discuss some specific data and information-related challenges that need to be addressed in order to achieve the intended Goals and Targets of the SDGs.

In the first section, Chapters 1 and 2 provide the basics of data, information, metadata and the SDGs to set the background. In the second section of the book, Chapters 3, 4 and 5 discuss the SDGs, specific Targets, Indicators and metadata required for measuring achievements and success. Specific examples and challenges associated with some metadata, and complexities associated with the methods of calculation/interpretation of data, are also discussed. Some data related challenges, such as, data completion, disaggregation of data, currency of data, missing data, and data gaps are discussed. The discussions are supported with data, tables, charts and critical comments around metadata and data related challenges for measuring the progress and achievements in various SDGs.

The book provides comparisons amongst different countries and regions, e.g. global achievements in SDGs in different regions and countries in Europe, Africa, the OECD countries, to demonstrate the current levels of progress and various challenges associated with the data and progress in achieving the Targets of different Goals. These are made in several chapters using tables, charts, and notes/comments around specific Goals, as well as some specific Targets and Indicators, especially those that are related to data and information, e.g. SDG16.10, SDG17, and data-related challenges, such as lack of disaggregated data on gender divide, and the overall availability, currency and completeness of data. Needs for, and the current levels of, national and international co-operation and collaboration for resources and data sharing for the SDGs are also discussed, with specific examples.

In the third section, Chapters 6, 7 and 8 discuss specific human and social challenges associated with the SDGs in general. Chapter 6 focuses on the digital divide in different regions and countries and their implications for the SDGs, especially in the context of access to information, SDG16.10, and access to technology: Target 9.c and Indicators 17.6.1 and 17.8.1 (all related to access to the internet). The discussions show how the existing digital divide in different regions, countries and communities hinders progress in the SDGs.

In Chapter 7 the digital skills of people in different countries and regions are compared and discussed in the context of the SDGs, supported by the latest data tables, charts and critical comments. Chapter 8 discusses information skills and how these are critical for everyone in achieving success in the SDGs; for instance, we look at the latest UK and international datasets on information skills at workplaces, in everyday life and at the foundation level and the related strategies/policies, arguing that these are the prerequisites for achieving the intended Targets of several SDGs. Relevant information literacy policies and frameworks, e.g. Unesco's MIL framework and the information literacy framework of CILIP, the Library and Information Association, have been discussed in the context of the SDGs, especially SDG16.10 (public access to information), SDG9c, 17.6.1 and 17.8.1 (access to the internet and digital divide), SDG3 (health and health information literacy), and SDG4 (education and information literacy), SDG8 (work and employment) and SDG13 (environmental literacy). Some works and initiatives of the LIS (library and information science) sector around green libraries, resources/activities to support health literacy, environmental literacy/awareness, and so on, are also mentioned in Chapter 8.

The fourth section of the book consists of three chapters, 9, 10 and 11. Chapter 9 focuses on education and the SDGs, highlighting how education for sustainable development and information and environmental literacy play an important part in achieving the SDGs. Examples of various activities and initiatives around education for sustainable development in different countries are also provided in Chapter 9. Chapter 10 discusses the trends of research on different aspects of the SDGs. Adopting the approach of a metareview, this chapter shows the levels of discussions and progress in research on the SDGs, especially around data and information, and highlights some challenges. Chapter 11 discusses the research and development activities undertaken by library and information science researchers, and library and information services professionals and the sector in general, around sustainability, green libraries and climate change agenda, and the SDGs in general. This chapter also proposes a research and training framework for the current and future generations of information professionals and researchers, pointing out how the SDGs and sustainability

issues should be embedded in the information science education curricula and research agenda for the future generations of information professionals, researchers and scholars.

The intended target audience of the book comprises the students, academics, researchers and professionals in the information sciences discipline, and especially library and information science and information and knowledge management, and in the cognate disciplines such as computer science, data science and environmental science. The book will be useful for practising professionals, researchers and senior management in the broader library and information services sector to help them understand how the LIS sector can contribute to the SDGs and thus engage in various activities and discussions that may result in developing policies and action plans for the sector. The book will also be useful for students, academics and researchers in other disciplines – education, social and political sciences, business and management science programmes, and so on – who are working with SDGs. It is hoped that the book will create new research and discussions in the study of data, information, people and the SDGs, generating discussion and debate on how the data, information, human and social elements of SDGs should be considered holistically, and how these elements should be embedded in the formal and informal information education and training, and research and professional activities, of the library and information science, knowledge and information management, records management, cultural heritage information management, and the allied disciplines.