01 Introduction

Designing policies to achieve green growth requires effective measurement frameworks and indicators to track progress against key development challenges (Narloch, Kozluk, & Lloyd, 2016). Having the ability to measure performance allows policymakers to identify the problems or gaps and design and plan policies as well as sustainably use resources that will lead to better green growth outcomes. The measurement of green growth performance can also enhance the understanding of how the policy changes at the sectoral level can affect overall growth. Green growth policies require evidence-based frameworks, one that can assess and communicate whether these policies have achieved goals and targets and allows countries to monitor development and progress (GGKP, 2013).

Through its Green Growth Performance Measurement (GGPM) Program, the Global Green Growth Institute (GGGI) has developed a composite index that will provide policymakers with a metric on which to base their decisions. The 2019 Green Growth Index covers 115 countries and builds on 36 indicators for four green growth dimensions, including efficient and sustainable resource use, natural capital protection, green economic opportunities, and social inclusion. The indicators are benchmarked against sustainability targets including SDGs, Aichi Targets and Paris Agreement. The Index and its underlying indicators can contribute significantly to the quantitative dimension of the green growth concept, fostering a scientific, rigorous, and data-driven approach to policy and project implementation. It is meant to demonstrate GGGI's thought leadership in the area of green growth and showcase its capacity to design and execute a major analytic undertaking while making a valuable addition to the global stock of green growth knowledge.

Composite indices, also called composite indicators, are increasingly used to compare performance and display ranks of countries (Freudenberg, 2003; Saisana, Saltelli, & Tarantola, 2005; OECD, 2008; Nardo & Saisana, 2008; Greco, Ishizaka, Tasiou, & Torrisi, 2018). Their popularity can be attributed, among other things, to their ability to summarize multidimensional issues and combine information on a set of indicators into a single score (OECD, 2008; Nardo & Saisana, 2008). At the same time, indices can convey misleading policy messages if the process to develop the Index lacks transparency and the indicators chosen to be combined in the index lack sound conceptual foundation (ibid.). GGGI adopted the steps suggested in OECD's Handbook on Constructing Composite Indicators (OECD, 2008), which guides users on practical approaches to make index development more transparent. Moreover, the handbook emphasizes the significance of involving experts and stakeholders in selecting and combining indicators based on a sound conceptual framework.

To date, there have been no uniform or harmonized approaches to measure green growth, largely as a result of varying definitions and understanding of the concept in recent years. This is evident in different dimensions, or sub-components, and indicators used in other related green growth indices, including the African Development Bank's African Green Growth Index (AfDB, 2014, 2015), United Nations Environment Programme's Green Economy Progress Index (PAGE, 2017a, 2017b), the Asian Development Bank's Inclusive Green Growth (Jha, Sandhu, & Wachirapunyanont, 2018), and the Dual Citizen LLC's Global Green Economy Index (Tamanini & Valenciano, 2016).

GGGI has initiated important steps toward developing a common understanding of green growth and indicators that can operationalize its concept. Beginning in 2017, GGGI has collaborated with over 300 experts from various fields, including social development, climate change, biodiversity and ecosystems, renewable energy and efficient resource use, water, and land use, and different types of organizations, including international organizations, non-government organizations, development banks, government agencies, and academic institutions, to support the development of GGGI's Green Growth Index. The process in developing the index follows a systematic approach involving expert consultations, feedback assessments, and revisions to the framework to ensure an inclusive and collaborative process, create a platform for transparent development, and enhance policy relevance of the Index.

This technical report discusses the conceptual and methodological frameworks of the Green Growth Index, the process for developing these frameworks, and the rationale for pursuing an inclusive and collaborative process. It also presents key results highlighting differences in green growth performance across dimensions and top-ranking countries in different regions. The structure of the report is as follows:

Chapter 2 briefly presents the key findings of the Green Growth Index at the global level based on the set of indicators used to operationalize the conceptual framework.

Chapter 3 discusses the inclusive and collaborative process for designing the conceptual framework and identifying indicators that are most policy-relevant. The chapter also explains how the framework evolved through a series of consultations with different groups of experts.

Chapter 4 describes the conceptual framework for developing the Green Growth Index, including the different concepts that underlie green growth and the relevance of the green growth dimensions to these concepts.

Chapter 5 explains the stepwise methods for developing the Green Growth Index, including data selection, preparation, and validity check, which cover scaling, imputation, and outliers, as well as normalization, weighting, and aggregation of indicators. The chapter also discusses the steps and targets used for benchmarking the index.

Chapter 6 illustrates selected results on the application of the concepts and methods at the regional and country levels.

Chapter 7 highlights current concerns surrounding the index in terms of indicators, data availability, and sustainability targets. It also discusses aspects that need attention in updating and improving the index.

Chapter 8 compares the Green Growth Index with related indices with the aim of finding synergies and potential opportunities for collaboration.

Chapter 9 presents expected applications of the Green Growth Index at GGGI and with other partners.