GGGI Technical Guideline No. 1

Global Green Growth Institute

Green Growth Planning Guidelines

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Acknowledgment

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List of Abbreviations[1]

CGE	Computable general equilibrium
COP	Conference of Parties
CRGE	Climate-resilient green economy
DSCE	Dubai Supreme Council of Energy
EAD	Environmental Agency of Abu Dhabi
EDRI	Ethiopian Development Research Institute
EPA	Environmental Protection Authority (Ethiopia)
EPAU	Prime Minister's Economic Policy Analysis Unit (Ethiopia)
FTI	Fast-track investment
GDP	Gross domestic product
GE	Green economy
GG	Green growth
GGGI	Global Green Growth Institute
GHG	Greenhouse gas
GTP	Growth and Transformation Plan (Ethiopia)
INDC	Intended Nationally Determined Contribution
KPI	Key performance indicators
LDC	Lesser developed country
LoI	Letter of intent
MEF	Ministry of Environment and Forestry (Ethiopia)
MIC	Middle-income Country
MoA	Ministry of Agriculture (Ethiopia)
MoEW	Ministry of Energy and Water (UAE)
MoFA	Ministry of Foreign Affairs (UAE)
MoFED	Ministry of Finance and Economic Development (Ethiopia)
MoWIE	Ministry of Water, Irrigation and Energy (Ethiopia)
MoU	Memorandum of understanding
M&E	Monitoring and evaluation
NCDP	National Capacity Development Program (Ethiopia)
NGGS	National Green Growth Strategy (UAE)
R&D	Research and development
SAPCC	State's Action Plan on Climate Change (India's Karnataka state)
UNDP	United Nations Development Programme
UNFCCC	United Nations Framework Convention on Climate Change

1 Note that ministries are labeled as either UAE or Ethiopia if institution name did not make country or origin clear. Additionally, ministry names listed here represent naming standards from 2010 to 2015 and may not reflect current institutional names.

Executive Summary

The Global Green Growth Institute (GGGI) developed these guidelines in order to define a green growth planning process. Based on empirical evidence from GGGI's country program experience, the guidelines present an 18-step green growth planning process (see Table 1) and reference specific tools, management models, and analyses that new country programs may use.

Local contexts and existing knowledge bases will determine the actions that country programs will pursue, so the steps need not be mandatory or sequential. But all information discussed in the steps must be considered.

Table 1: Steps in Green Growth Planning

Diagnosis GGGI program setup	**Assessment** Analysis and intervention identification	**Action Planning** Project, policy, and institutional Planning	**Implementation** Implementation of policy and programs
Step 1.1: Situation analysis	Step 2.1: Stakeholder input	Step 3.1: Local ownership and validation	Step 4.1: Establishment of governance units
Step 1.2: Stakeholder mapping and political alignment	Step 2.2: Data collection and analysis	Step 3.2: Development of financial mechanisms or budgets	Step 4.2: Capacity and advisory support
Step 1.3: Green growth opportunity assessment	Step 2.3: Identification of effective interventions	Step 3.3: Definition of actionable projects or subactivities	Step 4.3: Monitoring and reporting
Step 1.4: GGGI program plan	Step 2.4: Green growth pathway analysis	Step 3.4: Target setting and results framework	Step 4.4: Evaluation and learning
	Step 2.5: Prioritization and costing of interventions	Step 3.5: Political and financial approval	

In addition to outlining these steps, the guidelines introduce GGGI's approach to green growth and green growth planning and present case studies on GGGI's program experience Ethiopia, India, Indonesia, and the United Arab Emirates (see annexes). This approach includes seven planning principles and a high-level definition of GGGI's core functions that are important to program inception.

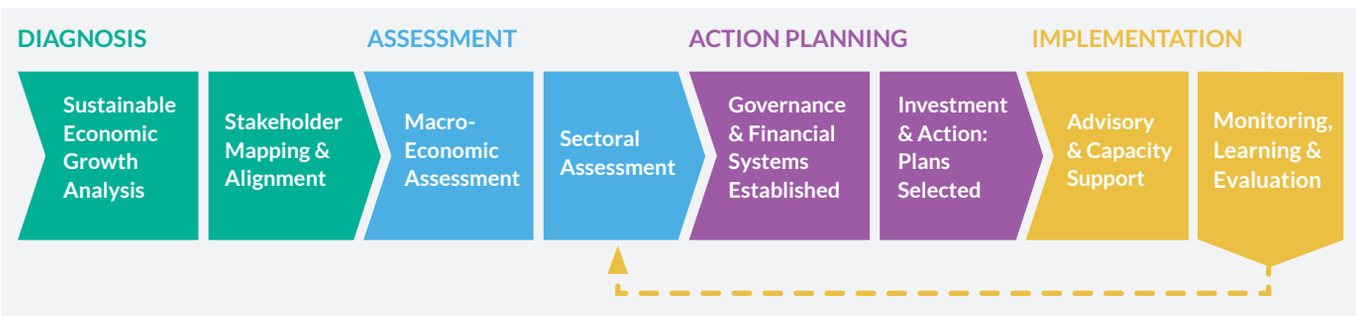
The guidelines offer a flexible reference tool that GGGI country planners can use when starting operations in a new place. They also serve as reference for government officials, GGGI staff and consultants, and other stakeholders who are developing, improving, and implementing green growth plans. They are in essence a living document, as they are expected to expand to include new analyses and models that GGGI develops.

Guidelines Background and Methodology

GGGI developed these guidelines to help new country programs have a road map for green growth planning, using lessons from country studies distilled along the GGGI Value Chain through process evaluation. It recommends that country programs follow GGGI's operating principles in providing host governments with value propositions for strategic analysis, capacity support, and stakeholder coordination.

The green growth planning process employs a problem-solving approach to public policy development, which can be used anywhere regardless of distinct differences among countries, whether that be income levels or development histories. Aligning with the GGGI Value Chain, this high-level process starts with a diagnosis of developmental issues for green growth, followed by a comprehensive assessment of green growth opportunities at macro and sectoral levels, prioritization and sequencing of a series of implementation actions, building of institutional and human capacity for implementation, and, finally, progress monitoring, learning, and evaluation.

Figure 1: GGGI High-Level Planning Process



Objectives and Rationale

Green growth planning encompasses not only environmental modelling, which narrowly focuses on land use planning, ecosystem service valuation, life cycle analysis, and climate change impact assessment, but also long-term socioeconomic development planning. This kind of holistic planning helps governments make the case for coordinated, strategic interventions that optimize environmental, social, and economic outcomes, as opposed to "laissez-faire" approaches that look at environmental externalities[2] in an ad hoc manner without considering new production pathways. Green growth planning is meant to be evidence-driven, as opposed to interest group-motivated, with clear mandates for administrative and organizational actions that explore new green public investment and build consensus around green technologies and industries.

With this model in mind, the role of GGGI as a neutral, evidence-driven third party with the technical expertise to support government planning becomes very important. Moving away from politically sensitive environment advocacy and shifting toward a sustainable, economic transition need a measured approach with careful stakeholder engagement and a clear narrative of the business case for green growth. Showing how green growth can reduce risk and create economic, environmental, and social benefits across a large range of scenarios and pathways take time, coordination, technical knowledge, and careful planning, which GGGI is positioned to provide. These planning guidelines will draw on examples from country experiences in order to outline a step-by-step process of how GGGI can perform this function in different countries and contexts.

The guidelines aim to:

- Provide a resource for new GGGI programs to understand and leverage past green growth planning experiences;
- Define an empirically driven GGGI planning framework of how a country program may move from assessment and strategy development to operationalization and implementation;

2 A. Myrick Freeman III, Joseph A. Herriges, and Catherine L. Kling, *The Measurement of Environmental and Resource Values* (Oxon: RFF Press, 2014).

- Identify where the process might have special considerations for varying country contexts; and
- Identify GGGI resources and tools for undertaking analyses and other methodologies for green growth planning.

These guidelines provide an overview of the steps that a green growth planner needs to consider when introducing a GGGI program into a country, from inception to implementation. They can direct the user to proper references and resources to successfully establish an operational mandate, complete analysis, coordinate stakeholders, set up project management systems, and evaluate progress. The steps and sequencing around diagnosis, strategy development, action planning, and implementation should apply to all countries. These 18 steps may take a different order, happen simultaneously, or potentially be skipped depending on existing policies and institutions, country contexts, and needs. In addition, it should be noted that these guidelines in no way dictate the only way in which green growth should be approached, but rather, they offer a set of options GGGI has documented and utilized in its work.

Introduction to Green Growth and Green Growth Planning

Green growth is a development model that sustains strong economic growth, while ensuring climatic and environmental sustainability, poverty reduction, and social inclusion. It focuses on addressing the root causes of socioeconomic and environmental challenges and creates the necessary channels for resource distribution and access to basic commodities and energy for the impoverished. It reduces the risks that come from degradation of natural resources and the threat of global climate change, and generates innovative opportunities around sustainable technologies and industries. It transforms the way economic values have been created, natural capital has been priced, and resources have been distributed, with smarter, greener, and more inclusive approaches and technologies.

Green growth can improve livelihoods by simultaneously addressing one of the most enduring challenges of our time—poverty reduction and climate resilience. Impoverished communities can increase their economic viability through harnessing and improving the value of their natural capital. At the same time, these communities can be resilient to external shocks by adopting practices that inherently improve climate outcomes.

GGGI's interventions are premised on the promise of green growth—a simultaneous advancement of economic growth, environmental sustainability, poverty reduction, and social inclusiveness.[3] This vision should always guide GGGI's support for green growth planning and the selection of specific tools best suited to achieve the identified objectives.

Green growth planning is the process of (1) envisioning and attending to possible climate scenarios and other foreseen developmental challenges; (2) identifying a collectively desirable pathway; (3) and building consensus around choices that would put a country on that path. It involves allocating resources to green sectors, and, in some cases, reallocating resources away from traditional sectors, which may require some initial investment but which pays for itself in the long term.

Green growth planning has historically been rooted in macroeconomic planning, which in the past has aimed to modernize older industries, create new ones, retrain workers, foster investment and research and development (R&D), and develop stable markets.[4] Both industrialized and industrializing countries, including the United States, Japan, European Union nations, Korea, and China have used macroeconomic policy tools such as public financing and lending, reduction of or exemption from taxes and fees, R&D funding, public procurement, and preferred purchase system (labelling and certifications) to achieve growth. But a careful green growth planning process will allow even the lesser developed and hydrocarbon-based economies to identify the paths, programs, and policies that may be most relevant to their national contexts to achieve macroeconomic goals. These guidelines and their annexes will help identify specific tools these countries may use.

3 GGGI, *Strategic Plan 2015–2020, Accelerating the Transition to a New Model of Growth*, 11.
4 Richard P. Nielsen, "Industrial Policy: The Case for National Strategies for World Markets." *Long Range Planning* 17, no. 5 (October 1984): 50-59.

Principles of Green Growth Planning and GGGI Value Proposition

Discussions about new country programs should always consider GGGI's seven principles of green growth planning, which were derived from country experiences:

- Alignment with existing and ongoing national development plan
- Government-led process at both local and federal levels
- Broad-based engagement and coordination with stakeholders including donors, the private sector, and civil society
- Space for innovation and testing
- Political neutrality with an agenda based solely on empirical evidence and validated analysis
- Cross-sectoral integration with institutional coordination that cuts across sectors and levels
- Flexibility depending on the needs of a country

These principles can help country programs find the best solutions when they need to make tough design decisions around balancing the best environmental scenarios with national priorities or considering parameters for economic and social analyses. A green growth plan should use these principles to filter out the riskiest pathways but remain flexible with robust options for a country to achieve its goals. When considering the continuing task of stakeholder engagement and coordination, the principles should help country programs find the best way forward for integration, even if the process requires long negotiations.

Figure 2: Functions Forming GGGI's Value Proposition

GGGI can serve as a neutral advisor to partner country governments, by offering evidence-based solutions for bringing together partners around green growth programming. It has proven its capacity to undertake the following functions, which form the basis of GGGI's value proposition when moving into a new country and feed into each other throughout a programing cycle:

- **Green growth analysis.** With technical experts across the globe and in partner countries, GGGI has the experience and expertise to leverage international best practices to build the local knowledge base needed to make the case for green growth.
- **Stakeholder coordination.** As a nonpolitical, advisory third party, GGGI can bring various actors together without agenda to find solutions that are politically acceptable, socially and economically viable, and environmentally sustainable.

- **Technical capacity building.** In pursuit of green growth, developing country partners consistently seek capacity-building support. Country ownership of green growth programs requires technical expertise and cross-cutting management skills that usually need to be acquired from the outset. GGGI works with local partners to develop training and knowledge transfer programs as needed to build strong local green growth leadership.
- **Green growth strategy and program design.** Many countries want to adopt holistic sustainable development and green growth programs, but they do not know where to begin. GGGI's methodology and value chain have broad focus areas that can be applied to a variety of local contexts to find workable strategic and policy frameworks as well as a set of kick-start programs for partner governments.
- **Monitoring and evaluation (M&E).** GGGI is uniquely positioned to support evaluation and learning analysis, which aims to understand if countries are meeting their green growth targets. Emerging lessons can feed back into the planning cycle, to inform future analysis and programming.

These cross-cutting, intertwining functions may also define the type of GGGI support a partner country may want to focus on. In some cases, a partner may only be interested in strategy design or monitoring of existing programs to show progress. These functions could be broken down with GGGI service offerings to provide different models of support to partner countries.

GGGI Planning Process

Inception and Setup

A green growth planning process must build on existing initiatives and needs political will. As such, starting GGGI operations requires a broad mandate from the partner country government. This mandate does not necessarily have to be specific to GGGI, but it does need to indicate a high-level commitment to economic transition and pro-poor sustainable development. Beyond a general mandate, a champion from an appropriate government ministry—ideally one tasked with environmental protection or development planning—is needed to drive day-to-day operations forward. This person must see the inherent value in partnering with GGGI, be committed to getting the necessary approvals and facilitating processes to establish a country program, and guide initial GGGI staff through administrative logistics that may be necessary for official operating recognition.

The process of getting an operational mandate will differ by country, depending on the context through which GGGI started discussions as well as the administrative considerations. Even if the mandate to establish operations comes from the head of state, there will still need to be a process of becoming licensed and registered to operate in that country in order to hire local staff, set up an office and financial systems, and begin building relationships with stakeholders.

The staffing model becomes a concern especially in cases where immediate hiring of local staff is not possible. Previous GGGI country programs generally began with a "fly in-fly out" consultant-heavy model. Although this model worked to set up initial structures and perform analyses, it ultimately did not allow GGGI to gain the trust and relationships needed to build long-lasting programs and structures. In all cases, programs moved to a permanent, in-country staffing model. It is important to find the right balance between using external and remote personnel and consultants with high technical capabilities and establishing a more lasting country workforce, recognizing that even with the hiring of local staff, there will still be a period of building internal capacity and systems, which will require outside support.

Box 1: GGGI Program Establishment

Establish a broad mandate for green growth in the partner country

Find a local government "champion" to drive GGGI program establishment forward

Work on registration for local administrative setup, including financial systems and bank accounts, procurement and staffing processes, and office space

Develop an initial staffing model with understanding of how local office capacity will grow

Green Growth Planning

GGGI's green growth planning process includes phases that can apply to all countries regardless of their differences in terms of development status, environmental threats, political governance, and stakeholder landscape. These phases come with 18 steps, all or some of which countries may choose to take depending on their needs. Annexes in these guidelines define further the procedures involved in these steps.

Table 2: GGGI Green Growth Planning Process

Diagnosis Country needs assessment and GGGI program setup		**Assessment** Analysis and intervention identification		**Action Planning** Project, policy, and institutional planning		**Implementation** Program operations and policy adoption	
Economic and green growth analysis	Stakeholder mapping and alignment	Macroeconomic assessment	Sectoral assessment	Governance and financial systems	Investment and action plans	Advisory and capacity support	Monitoring and evaluation
Step 1.1: Situation analysis Step 1.2: Stakeholder mapping and political alignment Step 1.3: Green growth opportunity assessment Step 1.4: GGGI program plan		Step 2.1: Stakeholder input Step 2.2: Data collection and analysis Step 2.3: Identification of effective interventions Step 2.4: Green growth pathway analysis Step 2.5: Prioritization and costing of interventions		Step 3.1: Local ownership and validation Step 3.2: Development of financial mechanisms or budgets Step 3.3: Definition of actionable projects or subactivities Step 3.4: Target setting and results framework Step 3.5: Political and financial approval		Step 4.1: Establishment of governance units Step 4.2: Capacity and advisory support Step 4.3: Monitoring and reporting Step 4.4: Evaluation and learning	

Step 1: Diagnosis

The diagnosis phase of the planning process is all about establishing a country presence, making the case for green growth, including a program plan, and bringing on board key stakeholders. Depending on the country entry point and work that has already been done, this phase of the process may focus on different steps. For example, initial contextual analysis around green growth planning or GGGI program setup may have already been done in the inception phase. Generally, the diagnosis phase should focus on assessing economic needs and gaps in the context of green growth planning, including selecting sectors, identifying risks and opportunities, and understanding available data, national priorities, and local governance. It should also identify key stakeholders, to include representatives from the private sector and civil society, and develop a strategy for general stakeholder engagement.

Table 3: Diagnosis Phase of the Green Growth Planning Process

Diagnosis	**1.1 Situation Analysis**	**1.2 Stakeholder Mapping and Alignment**	**1.3 Green Growth Opportunity Assessment**	**1.4 Green Growth Program Setup**
Analysis/ Management and Policy Tools	Situation analysis Needs assessment	Stakeholder mapping Needs assessment	Global benchmarking Data availability assessment Economic trend analysis	Program management tools (Gantt timelines, goal setting)
GGGI Management Model	Consultants or internal staff Headquarters staff	Knowledge-sharing workshops Consultation meetings	Consultants or internal staff (HQ or local)	Cross-sectoral team with high-level engagement

Step 1.1 Situation Analysis

A situation analysis sheds light on the current state of a country's economy. It identifies all sectors, environmental and regulatory policies, and major institutions involved in economic governance. It broadly looks across sectors that may not contribute to green growth but still need to be contextualized for the green economy. It could include a SWOT analysis to assess a partner country's strengths, weaknesses, opportunities, and threats that could affect green growth planning. It ultimately will form a baseline to show all factors were considered, justify selection of key sectors and interventions, and develop an understanding of the political landscape. The output may be as simple as a country briefing document or a basic introduction to a more in-depth green growth assessment discussed in step 1.3.

Step 1.2 Stakeholder Mapping and Political Alignment

Green growth planning builds on and aligns with existing and emerging initiatives by ensuring stakeholder involvement across sectors, government levels or geographies, and institutions types. This approach empowers stakeholders to develop ownership over the planning process, boosts stakeholder networks and cross-sectoral cooperation, and facilitates knowledge sharing. Although stakeholder consultation continues throughout the planning process, a thorough stakeholder mapping carried out at the beginning of the program can expedite the exercise. Stakeholder mapping may be especially important in young countries or lesser developed countries, where coordination structures may need to be developed. Table 4 is an example of what a stakeholder mapping output may look like.

Table 4: Sample Stakeholder Database Output Table

	Type of Institution	Potential Role and Engagement Phase	Geographic Reach	Sector
Stakeholder	Government authority	Process owner	Federal	Water
	Private sector service provider	Implementation	Region 1	Energy
	Academic or research institute	Green growth analysis	Region 2	Agriculture
	Industry association	Strategy input and validation	National	Urban affairs
	International organization	Implementation and finance		Environment
	Bilateral donor	Financing and coordination		Forestry

A thorough stakeholder mapping will go beyond identification and build additional understanding of a stakeholder's operations, investments, incentives, and needs. Additional columns can be added to indicate data availability, types of programming, financing availability, priorities, and specific opportunities. An analysis of stakeholder programming can help identify gaps, investment patterns, opportunities, and policy changes needed to build green growth incentives. Additionally, it can identify partners with the technical skills and experience that may contribute to strategy design, analysis, and implementation. While alignment with all stakeholders is not possible, the activity will determine the best engagement model going forward, opportunities that exist, and the types of partnerships that can be formed as "green growth coalitions."

Through the stakeholder mapping process, GGGI can identify champions across government sectors and levels, and understand which institutions would help manage green growth planning and which sectors would need to provide technical expertise and program management. A proposed governance structure for strategy design, i.e., project team composition across sectors and ministries, can be another output of the stakeholder mapping exercise and may require additional consultation meetings.

Step 1.3 Green Growth Opportunity Assessment

A green growth assessment may build on and could potentially be an output of Situation analysis (step 1.1). It however goes deeper than Situation analysis, which just explores current conditions, by looking at key sectors, national needs, and relevant best practices that will drive green growth forward. This step involves several analyses, some of which may not be necessary if a good knowledge base around these analyses already exists:

- **Global best practice and benchmarking.** This focuses on in-depth case studies about countries that have developed green growth strategies to understand best practices relevant to policy and programming. A comparative study would be an option for countries with similar resource endowments, governance structures, economic status, or climate goals. Benchmarking should identify specific strategies, levers, and policies that could be replicated.

- **National baselines.** Assessing national economic, social, environmental, political, and legal conditions using green growth indicators enables understanding of the baseline situation for green growth planning and the identification of priority sectors.
- **Economic trends study.** Analyzing a country's macroeconomic conditions, including current development trajectory, regulatory frameworks, and enabling environment for economic development will develop an understanding of possible economic transition scenarios and alternative development pathways.
- **Environmental and climate risk and vulnerability assessment.** This delves into potential environmental and climate hazards and their impacts.
- **Social development study.** This examines development challenges to poverty reduction, gender equality, and social inclusion of the poor and vulnerable. Situation analysis prescribed by *GGGI's Pro-Poor, Inclusive Green Growth—An Operational Guide* can serve as reference for designing this study.[5]
- **Data gap assessment.** The availability of data may greatly affect the quality of analysis in the strategy design phase. Stakeholder mapping and initial consultations may include an assessment on the accessibility of data from partners and in the country. If data are not handy, country program planners should consider programming around data collection. If data are obtainable but not clean, they should include data management and database development in their programming.

The goal of any selected green growth opportunity assessment for a GGGI country program is to lay the foundation for an in-depth green growth analysis that will help formulate strategy design.

Box 2: Steps in the Diagnosis Phase

Perform a situation analysis to develop understanding of national economy and governance structures

Carry out stakeholder mapping to identify partners across sectors, geographies, and institution types

Ensure stakeholder alignment to determine an engagement strategy with partners, identify sector "champions," and design program governance structures

Conduct a green growth assessment to identify sectors, program models, policies, opportunities, and gaps that could be adopted or need to be addressed in the strategy design phase

Work on program establishment to set up governance structures and management plans outlining goals, timelines, sectors, and stakeholders to consult

Step 1.4 Green Growth Planning Project Establishment

Program establishment can take on different forms. The final output may just be a governance structure and an informal understanding of how the strategy design process will be managed. A more formal approach may include the formulation of a business or project plan that outlines sectors, priority areas, program goals, and timelines for developing a strategy. Depending on the GGGI staffing model, this step may also involve contracting outside consultants to support the strategy process. The program plan or consultants' scope of work should reflect the results of stakeholder mapping and initial assessments.

For the governance structure, an interministerial group presents an effective mechanism and should represent all key sectors, including a representative from a ministry involved in general development and policy planning (the prime minister's office, finance ministry, economic planning authority, etc.). GGGI would also be part of this team, helping to deliver content and providing management support. This team would serve as the program owner to coordinate stakeholder consultations, including technical input from local experts, and drive the overall strategy process. If representatives to the team are at the subministry level, then the process of getting high-level approval would also be part of the mandate. If such a body does not exist or cannot be formed, then bilateral consultation meetings and identification of key decision makers to give input would be very important.

Step 2: Assessment

Assessment is one of the key value additions that GGGI can bring to a partner country; its goal is to develop a green growth strategy. This generally requires analysis of the macroeconomic, social, and sector-level impacts of potential green growth programs. Initial analysis in the diagnosis phase will help determine which stakeholders, sectors, and analysis are necessary for developing a strategy assessment. The assessment and strategy design phase aim to make the case for green growth by identifying the best pathways toward real economic, social, and environmental benefits. It will consider alignment of these pathways with ongoing national and sector initiatives.

5 GGGI, *Pro-Poor, Inclusive Green Growth—An Operational Guide* (2016), 4-5, 13-15.

In cases where countries have existing development plans and are committed to its targets, the assessment could find out how green growth can be applied as a practical approach that builds upon existing government strategies and plans and demonstrates pathways to achieving them in a truly sustainable way. The added value will be supporting the government in implementing existing strategies, plans, and proposals, defining not "what should be done" but rather "how it could be done better."

Table 5: Assessment Phase of the Green Growth Planning Process

Assessment	Step 2.1 Stakeholder Input	Step 2.2 Data Collection or Management	Step 2.3 Identification of Interventions	Step 2.4 GG Pathway Analysis	2.5 Prioritization and Costing of Interventions
Analysis/ Management and Policy Tools	Stakeholder engagement models	Data gap analysis Data repository	Abatement cost analysis Program, technology, and policy inventory and filtering	Computable general equilibrium (GCE) models Sensitivity analysis Distributional modelling	Multiattribute analysis Iterative risk management Cost analysis Qualitative filters
GGGI Management Models	Technical workshops Bilateral meetings Embedded staff	Stakeholder consultation if there are data-related questions Outside consultants	Outside technical consultants if cost-effective Internal GGGI technical expertise	Outside technical consultants if cost-effective Internal GGGI technical expertise	Stakeholder consultation Alignment with national priorities

Step 2.1 Stakeholder Input

Beyond organizing stakeholders, the strategy development process needs the input of local experts and partners. A stakeholder mapping should identify and classify all stakeholders who may be involved in green growth planning, and thus can determine the models for stakeholder engagement. Interaction with stakeholders helps establish a common understanding of a green growth case for the country, including the role of green growth analysis and GGGI, and provide social, economic, and environmental context, data, and ongoing program information.

Models for stakeholder engagement include the following:

- Consultation meetings. These gatherings may take place on a one-off basis or at bilateral or multilateral levels. They prove useful when specific input is necessary or for more general partners who need to be lightly consulted.
- Technical workshops. Workshops tend to bring together a wide array of stakeholders usually from a single sector, but from different institution types, including the private sector and civil society. A technical workshop might occur over a few days, kick off ongoing feed-ins on the planning process, and provide opportunities for different voices to contribute to the discussion, with the goal of developing, aligning, and accelerating progress on a strategy piece.
- Staff embedment. An embedded staff model could apply to situations where government counterparts need more support to drive the green growth strategy forward. In this case, GGGI may place a staff member in a specific ministry and work with stakeholders on a day-to-day basis to make progress on strategy pieces.

Step 2.2 Data Collection and Analysis

Lack of valid data can be a limiting factor for conducting accurate green growth analysis and eventual environmental monitoring around greenhouse gas (GHG) emissions, climate risks, and natural resource degradation. The process of understanding what data are available can begin during stakeholder mapping and initial assessment phases, but should come together with a full analysis for strategy design. It should include a review of existing local and international sources of data, data collection methods, assumptions in the collection methodology, and overall reliability. This step seeks to understand what data may need to be collected and at what frequency, and to design a data management system that the government can use for ongoing monitoring.

Step 2.3 Identification of Effective Interventions

This step looks at the environmental, economic and social costs and benefits of all potential interventions. It employs abatement cost analysis, which allows countries to identify the integrated costs of programs, policies, and technologies that could be adopted as "levers" of green growth. Local programming, previously conducted analyses, and international best practices compiled during the diagnosis phase could identify these levers. The interventions can feed into building scenarios that are tested for environmental, social, and economic impact.

Generally, an abatement cost analysis should choose an immediately applicable time frame, which can show short- and medium-term returns and consider levers from all key sectors. Results can vary widely depending on the assumptions in the analysis, including technology and resource pricing as well as environmental effects, hence it is important to have proper data and consider the local context.

The below outlines questions to be considered when identifying final policy, programs, and technologies:

- How do costs compare across all potential technologies and policies?
- Are there "no regrets" options?
- What behavioral change programs might be effective?
- How do you balance projected impact on emissions versus waste management as well as energy, water, and land use?
- What are some promising cross-sectoral options that can provide "multiple wins"?
- Which sectors offer the largest opportunities?
- What is the sensitivity of promising options to various economic shocks that could occur?
- Which interventions promise best poverty reduction and social inclusion outcomes?[6]

Making a final selection of policy, program, and technology options can be somewhat subjective and ultimately needs to look at the sum of costs, benefits, priorities, and potential spillover effects. Green growth pathways must be developed over the variety of levers that have strategic effects across green growth-related areas such as energy, water, social development, biodiversity, and climate change resilience.

Step 2.4 Green Growth Pathway Analysis

After identifying efficient and effective interventions and understanding their costs, country program planners can move to developing pathways or scenarios with the most promising intervention packages. These pathways show how economic development can happen in a way that minimizes negative environmental and social impact, thus making the business case for green growth, resilience programming, and economic transition.

CGE models are commonly used to understand how the local economy will react to different policy interventions, technologies, and adoption scenarios in the medium and long term. It can use outputs from the abatement cost curve analysis as inputs, linking sector-level analysis to a macroeconomic picture. This macro analysis will shed light on medium- and long-term impacts on GDP growth, GHG emissions, trade balance, and energy mix.

Macro models test various assumptions and can help planners understand implications for sectoral trade-offs and demographic distributional effects, the sensitivity of options on energy and carbon prices, and the ways in which the local context can provide both synergies and bottlenecks to green growth. Testing assumptions around these factors can help to highlight solutions that may improve resilience, by identifying interventions that may not be as responsive to or can withstand shocks. Distributional analysis helps planners choose interventions based on intended beneficiaries as it enables understanding of how interventions may affect vulnerable populations.

GGGI's green growth potential assessment[7] examines a country's key green growth areas by showing the causal relations and interplay between economic, environmental, and social activities. These key areas can be grouped into four green growth dimensions or pathways, which comprehensively cover and disaggregate the concept of green growth in a structured way:

6 Refer to GGGI's *Pro-poor Inclusive Green Growth–An Operational Guide* for more information.
7 Refer to GGGI's *Green Growth Potential Assessment: User Guide* for more information.

- Resource-efficient growth, which increases the efficiency or production and consumption activities
- Eco-friendly growth, which preserves and enhances the quality and quantity of natural assets
- Climate-resilient growth, which mitigates the impacts from and adapts to climate change
- Socially inclusive growth, which ensures that green growth maximizes benefits for and minimizes costs to the poor and the most vulnerable

Macroeconomic models ultimately make the case for green growth pathways and bring together a full narrative of economic benefits and underlying trade-offs. Good analysis does the following:

- Establish how green technologies may boost or slow down economic growth and contribute to poverty reduction and social inclusion
- Quantify the difference between business-as-usual and green growth
- Show which market policies can work to promote economic and environmental outcomes
- Identify new sectors and technologies that can drive general economic growth
- Set feasible targets for green growth
- Identify time sensitivity and general timelines for implementing various options
- Develop understanding of how to build resilience of vulnerable populations

Step 2.5 Prioritization and Costing of Interventions by Sector

Moving from macro to specific sector analysis that considers political, financial, and specific agro-ecological realities is necessary to determine a final set of interventions that can be implemented and financed. This step involves further analyses and continuing stakeholder consultations.

Multiattribute and iterative risk management analyses can help filter priority actions and levers to determine where and when interventions can be most useful in order to achieve desired goals. Multiattribute analysis goes beyond cost-benefit analysis and considers qualitative scales around institutional feasibility, climate risks and opportunities, synergies, financial cost, and urgency in specific agro-ecological and livelihood zones. It can be useful in further narrowing down interventions identified by the abatement cost analysis and macroeconomic assessment, as well as in countries where land use and agriculture play a large role.

Stakeholder consultation at the national, federal, and/or regional levels are very important for this stage as feasibility and power alignment come into the picture. Filters may include those identified for multiattribute analysis as well as other factors as noted below:

- **Technological feasibility.** Some interventions may propose technologies that are unproven on a large scale. Although these can have first-mover benefits, they also pose risks of complications and uneven performance, especially if local management capacity for those technologies is underdeveloped.
- **Finance.** Capital-intensive interventions may not have adequate financing if government planning and budget do not include them.
- **Institutional capacity.** Institutions may not have the capacity for priority interventions or the will to manage new programs or policies.
- **Local capacity.** If local capacity to manage a new policy, program or technology does not exist, then projected benefits may not come to fruition.
- **Urgency.** Some interventions may be considered urgent if they provide vital social services (electricity, livelihood support, or clean water) and should receive extra weight even if they would command a higher cost or have lower impact.
- **Alignment with government planning.** Government planning cycles may not always align with green growth planning. If an intervention does not fall under current plans it may be difficult to build momentum.

While many of these filters may take input from previous analyses and from stakeholder consultation, finance is a factor that may require additional analysis such as a costing exercise to show the real institutional costs (not just high-level capital investment or general estimates based on other programs). A costing analysis should consider if an intervention package can fit into current government budgets and create financial proposals that could be fulfilled by donor, private sector, or implementing agencies. Such analysis should consider available financial mechanisms and the need to set up any structures in order to receive further funding or create fully bankable programs. Specific costing can further filter out interventions that do not have financing or are not bankable, and may also help identify priority interventions that may need to include fundraising in their plans.

Box 3: Steps in the Assessment Phase

Create stakeholder input models to assure local technical knowledge is incorporated

Carry out data assessment to identify data gaps and create a data management system

Perform an abatement cost analysis to identify programs, policies, and technologies that can have the greatest benefit and lowest costs

Conduct macroeconomic assessment to make the business case for green growth, showing full economic impact of identified scenarios

Do prioritization and costing of interventions to further filter selected interventions based on implementation feasibility

Step 3: Action Planning

Green growth interventions may take time and an extensive negotiation to operationalize. In some cases, this may involve establishing a funding mechanism or a new ministry; in others, it could be as simple as working with a policy and planning unit on annual programs and budgets.

Table 6: Action Planning Phase of the Green Growth Planning Process

Action Planning	Step 3.1 Local Ownership	Step 3.2 Financial Mechanisms Established	Step 3.3 Projects Developed or Selected	Step 3.4 Target Setting and Results Framework	Step 3.5 Political and Financial Approval
Management/ Policy Tools	Stakeholder negotiation Institutional mandates	Financial safeguards Policies to promote enabling environment Government budgeting	Project planning (timeline, milestones, KPIs) Project log frame	Results framework (or log frame) Process, outcome and impact indicators	MoU, LoI, contract agreements High-level formal endorsement
GGGI Management Model	Validation workshops Meetings Institutional development	Stakeholder coordination through meetings Staff embedment	Sector-level planning with GGGI support, including validation workshops and bilateral meetings	Ministerial-level decision on commitments	Ministerial committees Formal institutional process

Step 3.1 Local Ownership and Validation

While consultants, GGGI staff and/or a high-level committee may drive strategy development, actual implementation needs to happen through line ministries, regional authorities, and staff that have proper operational mandates. These are not necessarily the same stakeholders who were fully engaged in the analysis process. If this is the case, then a validation process needs to move forward in order to ensure full local ownership and justification of selected green growth interventions. In case implementing agencies do not actually exist or have the proper mandates, then an institutional development process may need to be undertaken.

Validation and institutional development may require lengthy negotiations to determine roles and responsibilities of various stakeholders. Consideration needs to be taken around establishing the following:

- **Institutional mandates.** In many cases there may be low capacity for cross-sectoral coordination that is required for implementing green growth interventions. If this is the case, then an environmental or planning authority needs to have the mandate to take on this role.
- **Process owners**. Implementing identified interventions require proper ministries, local authorities, and directors to take full ownership of the task. All interventions must establish process owners who will see implementation through.
- **Coordination units.** The lack of a natural institution or owner for a given intervention may require the establishment and staffing of a coordination unit. Such a unit may manage new interventions or work with process owners to ensure the availability of implementation capacity.

The engagement model for creating buy-in and ownership may look similar to step 2.1. GGGI offices may promote local ownership and buy-in through meetings, workshops, or an embedded advisor model.

Step 3.2 Development of Financial Mechanism or Budgets

Financial mechanisms may differ widely depending on a country's budgetary needs, donor landscape, and private sector development. In some cases, green growth plans may already align with existing budgets, and additional financing needs would be minimal; in others, there would still be a need for additional alignment with existing funding vehicles in developing final projects and plans. Certain cases will require development of new mechanisms to pool donor funding or that work for implementing partners. Depending on the types of funders, the process required for this step will vary. To a great degree, a financing element can be integrated into the proposed policy programs that aim to provide a level playing field for greener products and services and clean energy, and deploy smart regulations and support schemes that induce private investment to be profitable.

Factors that affect funding for green growth projects include the following:

- **Government budget (along with market-oriented financial incentive policies)**. Government budgeting cycles signal green public spending and possible green programs. A series of well-thought-out green market policies can supplement such publicly led action. These polices include tax or fee exemptions or reductions for certified green products and services, purchase guarantees for clean energy, differentiated licensing and fees for clean vehicles and fuels, energy-saving company services, and green public procurement, in order to provide appropriate incentives to private sector players. Critical success factors will be a strong, long-term government commitment and necessary infrastructure investment signaling a clear green direction to the market.
- **Donor funding.** Putting safeguards in place may require creating additional financial mechanisms. Donors often put money through other international and multinational organizations if they consider direct budgetary support to governments to be risky. GGGI can play an important role in helping to build government capacity for financial systems that donors can trust. A government-owned, cross-sectoral, and environmental programming-focused financial mechanism can pool donor funding toward green growth initiatives and coordinate climate finance well into the future.
- **Private sector.** The private sector can be a source of funding for green growth interventions. Promoting bankable projects that have clear returns on investments and having good policy incentives such as subsidies, tax breaks, and overall risk reductions measures, including public-private partnership models and streamlined regulation processes, can help spur private sector investment in green growth projects.

Step 3.3 Project Design and Selection

This step may not always be necessary if selected interventions align with ongoing initiatives. New programs, though, will need detailed design. Depending on the funding source, outputs from this step could be a project proposal meant for a donor or a government planning unit; a business plan meant for the private sector; or a detailed implementation plan that falls in line with regular government planning processes and templates. A clear project plan outlines the following details:

- **Goals statement and objectives** These describe the high-level impact and intermediate outcomes that an intervention is expected to achieve, as defined in the strategy design phase, particularly during the analysis of an intervention's environmental, social, and economic impacts. They also indicate the project's full geographic scope and coverage.

- **Activity plan.** This specifies what will be done to achieve the goals, including major milestones and an expected timeline.
- **Roles and responsibilities.** A project plan has to detail who will manage what activities, how partnerships will be structured, what is expected from beneficiaries, and generally who is responsible for different program aspects.
- **ME plan.** This offers an understanding of how to make progress toward meeting milestones, objectives, and goals, and to attribute high-level impact. Good indicators need to be measurable and time-bound. In many cases, high-level impact may not be seen from short-term projects; as such, process or output indicators should be used to show implementation progress.
- **Detailed budget**. The costing exercise in the strategy design phase should be a good starting point for this section, but as more of the program is defined, a better understanding of budget costs should emerge. In the case of a business plan, the budget might also contain revenue projections and overall accounting structures.

This step should also include an **environmental and social safeguards assessment**.[8] This assessment acts as a tool for identifying potential environmental and social risks (negative impacts) and opportunities (positive impacts in the form of poverty reduction, social inclusion, gender equality, and environmental sustainability) from the project either directly or indirectly. Direct impact may stem from undertaking the programmed activities, and indirect impacts may emerge from subsequent actions that may be carried out as a result of project activities. This initial safeguards review must be completed as part of the full project proposal stage.

For example, from its value chain perspective, GGGI will give policy advice and technical assistance to its partner countries, and in such a circumstance, direct environmental, gender equality, and social impacts can be considered minimal. However, it may be able to extrapolate the indirect impacts of its interventions during the implementation phase; in which case, there may be potential environmental, gender, and social impacts that GGGI needs to be aware of and be prepared to manage.

Safeguards
Avoid or minimize negative impacts on:
- Environment: natural resources (soil, air, water, biodiversity, etc.) and climatic system (climate change, exposure to natural disasters)
- People: men and women, vulnerable groups, indigenous peoples, the poor

Poverty reduction and social inclusion
Maximize benefits to people and society at large:
- Reduce inequality and poverty
- Improve access to basic social services
- Include all stakeholders

In many cases, this level of detailed program planning may fall outside the scope of GGGI's work. But institutions with low capacity or in situations where there are funding requirements, this presents an important area of support by GGGI staff.

Step 3.4 Target Setting and Results Framework

This step involves the creation of a comprehensive logical framework (log frame) or results framework that lists all intended interventions, key performance indicators (KPIs), measurement methodology, and targets.

These targets can be used beyond overall M&E planning to form the basis of national commitments. Countries can prepare national plans to achieve the Sustainable Development Goals or their Intended Nationally Determined Contributions (INDCs) to the Paris Agreement, setting goals for emissions and considering other high-level environmental impact goals around forest cover, land use, energy mix, water consumption, and diversification toward sustainable technologies. Additional goals around resilience, economic development, poverty reduction, and social inclusion should align with national development plans. The results framework must outline green growth pathways and how they will achieve these goals. In many ways, previous steps have already tackled this information, but the results framework can help connect high-level analysis to the proposed programs, policies, and technologies, and spell out the logic of how to reach goals.

8 GGGI, *Pro-Poor, Inclusive Green Growth–An Operational Guide*, 18, annex 3.

Step 3.5 Political and Financial Approval

Final strategy and program approval may look different in each country and even vary slightly between sectors and program types. Broad-based political buy-in should have already been achieved at this point; general strategy approval may come immediately after the design process. More specific approval could be in the form of a signed contract, memorandum of understanding (MOU), or letter of intent (LOI), which allows financing to begin. It could be an endorsement by parliament, the head of state, or a top governance committee, which allows government entities to begin programming. Understanding how high-level approval may translate into actual programming and policy shifts is important to knowing how implementation will move forward.

Box 4: Steps in the Action Planning Phase

- Do stakeholder validation of strategy design
- Achieve government ownership at institutional and cross-sectoral levels
- Design financial mechanisms
- Perform detailed project planning, including activity plans, milestones, timelines, and KPIs
- Conduct target setting and develop a results framework
- Secure political and financial approval through policy mandates and financing flows

In some cases, green growth plans have been completely mainstreamed into normal government planning processes, and as such, additional approval may not be needed. In many cases, however, the scope and timeline of green growth planning do not align with those of national development planning. Development plans could be on five- or 10-year cycles, and annual planning may already be complete when a green growth plan is ready to be approved. Certain interventions may fall outside the scope of government, such as private sector or donor-funded projects. In these cases, a separate approval process may become necessary.

Step 4: Implementation

The role of GGGI in project implementation should always include some level of strategic support for capacity development and overall M&E of programming. Some countries may require more extensive engagement, while others may just look toward a light support model. The implementation role must consider GGGI's specific value proposition in each country.

Table 7: Implementation Phase of the Green Growth Planning Process

Implementation	Step 4.1 Governance Structure Established	Step 4.2 Capacity and Advisory Support	Step 4.3 Monitoring and Reporting	Step 4.4 Evaluation and Learning
Analysis and Management/ Policy Tools	Reporting templates	Capacity gap assessment	Data reporting (including GHG inventory) Environmental monitoring system Results framework	Lessons learned analysis Evaluation reports Recommendations and future guidance
GGGI Management Model	Quarterly or biannual meetings Quarterly and annual reporting	Embedded advisors Support meetings Technical support desk Training workshops	Reporting structures from the ground, through coordination units and process owners, to top governance	Learning workshops (inter or intracountry) Consultant support Internal knowledge management

Step 4.1 Establishment of Governance Structure

Decision makers need to be coordinated across sectors in order to ensure holistic implementation and monitoring of green growth plans. A governance structure should include high-level officials who can ensure accountability and monitor progress. In many cases, the governance structure could mimic the high-level, cross-sectoral management structure put in place to drive strategy design forward. A governance structure could also emulate coordination units that may have been set up in step 3.1, but at the decision-maker level.

In addition to ensuring accountability, top governance should be able to help intervene with challenges that arise during implementation and push through agreed policy changes. It should be able to approve any changes in strategic direction and ensure that green growth remains streamlined into ongoing government planning. Regular meetings and reporting on quarterly, biannual, and annual bases should be planned.

Step 4.2 Capacity and Advisory Support

Capacity and advisory support is a process that continues throughout the planning cycle. During diagnosis, strategy design, and operationalization, capacity support may focus on analytical skills around technical knowledge for green growth planning. As the process moves toward implementation, capacity building may become more broad-based, supporting a wider range of implementing officials at regional and federal levels, and expanding to all targeted sectors.

An analysis of existing gaps can determine capacity needs. Such an analysis can consider organizational and human capacities to manage systems around green growth mainstreaming, resource allocation, program delivery, coordination, knowledge management, communications, and operational planning. Based on the results of such an analysis, fulfilling identified needs around office systems (IT systems or reporting processes) can bolster organizational capacity, and human capacity support can take on a few models:

- **Embedded advisory support.** Where capacity is low, GGGI can consider sending an advisor to work side by side with government counterparts to ensure mainstreaming of strategic objectives and provide day-to-day troubleshooting.
- **Ad hoc consultation meetings.** GGGI staff members are available to meet with their government counterparts as the need to provide support arises. This would be most effective where good working relationships already exist, and there is a clear understanding of the support that GGGI can be called on for.
- **Training workshops.** To address specific capacity gaps, GGGI can organize training courses to, for example, introduce new management systems or teach a needed skill.
- **Support desk.** GGGI can set up a help desk that can refer issues to proper technical experts and provide basic information as needed. Widely publicized to all relevant stakeholders, the support desk could be a more effective way to demonstrate availability than ad hoc meetings.

Step 4.3 Monitoring and Reporting

Monitoring and reporting should happen on two levels once implementation begins. The first is at the process level, which would track implementation progress, including whether the program has hit major operational or policy milestones. This is relatively straightforward if a robust results framework was developed in step 3.4 with clear KPIs and reporting lines. Process indicators may include trainings delivered, solar panels installed, policies that have been adopted, and the amount of money invested in transitioning a sector. Reporting mechanisms should go up the governance structure so that progress is known and decision makers can intervene if a program is not on track to meet its goals.

Impact-level monitoring, meanwhile, must be coordinated across sectors and levels. GGGI may play an important role here, in setting up monitoring systems to track the targets set in step 3.4 which build on international best practices and internal technical knowledge. Service providers to build data management systems or run independent surveys may need to be hired. Because impact-level indicators are more complicated to measure and may require significant investment to ensure consistent monitoring, this activity has to be done in partnership with government data agencies and local research institutions. Assessments and ongoing monitoring could include GHG inventories, biannual biodiversity, green jobs created, surveys, or land use assessments.

Data collection and analysis in the strategy design phase as well as target setting in step 3.4, should have laid the groundwork for these M&E needs, with this step actually building on the system and running surveys if needed. It should be known if government surveys and data systems, with the addition of a few survey modules, can measure green growth indicators or if a system will need to be built from scratch. The system should be able to provide a basic understanding of how different interventions and programs contribute to overall impact and validate if programs are achieving the abatement levels predicted during strategy design.

Step 4.4 Evaluation and Learning to Inform Next Planning Cycle and Analysis Needs

Monitoring and reporting are not the end goal but a means to build knowledge and learning. Long-term planning is an iterative cycle that needs to learn from ongoing initiatives and evolve in order to respond to new challenges and discoveries. Green growth planning has to be responsive so that programs and strategies can adapt as new technologies are developed, cost assumptions are tested, or environmental hazards emerge. Targets may need to be adjusted, or a strategy may need to be reanalyzed with new assumptions if outcomes are not being achieved as planned. Countries can move forward with various evaluation methodologies:

- **Process evaluation.** This can help identify challenges and successes in achieving targets. Process evaluations are usually qualitative and can provide input into lessons learned documentation.
- **Lessons learned documentation.** This summarizes the knowledge gained from program planning and implementation in order to provide concrete recommendations for future guidance.
- **Outcome analysis.** This can use programmatic and qualitative data to understand if interventions are generating the required outcomes and in which scenarios they work best.
- **Environmental outcome analysis.** This reviews data from environmental monitoring systems. A GHG inventory system would help in monitoring emissions, but methodologies for other environmental impact would also need to be drawn in.
- **Social outcome analysis.** This tackles data from systems that are monitoring progress in meeting social indicators such as poverty reduction and social inclusion. Employment data could be helpful in determining the number of green jobs being generated as result of a green growth project or program.
- **Impact evaluation.** This may be more complex to implement than other evaluation methods. If the right baseline data or test groups are available, impact evaluations become the gold standard for understanding whether programs are achieving their high-level targets. They can help show causation between certain outcomes and specific interventions.

Box 5: Steps in the Implementation Phase

Establish a governance team
Provide formal training through a capacity development program
Offer continuing advisory support through selected models
Undertake monitoring and reporting on agreed timelines
Conduct evaluation and feed back learning into the planning process

Annex A: Analysis and Tools Guide

Tool or Analysis	**Phase and Step** Which step does the tool align with?	**What It Is** Description of the analysis or tool	**When to and Why Use It** Whether it's most appropriate for LICs, MICs, resilience strategy, sector strategy, etc.
Situation analysis	Diagnosis 1.1	Broad overview of national economic and environmental governance	To develop a deep understanding of country situation
Stakeholder mapping	Diagnosis 1.2	Identification and classification of all stakeholders that may be involved in green growth planning	At the beginning of program to determine models for stakeholder engagement
Global benchmarking	Diagnosis 1.3	Identification of relevant global best practices that could be replicated in country	If countries with similar natural or governance features have successfully done green growth planning
Data cataloguing	Diagnosis 1.3	Initial catalogue of available data resources	To begin understanding of data that are available for analysis and can be used in preliminary analysis
Economic trend analysis	Diagnosis 1.3	Analysis of baseline economic trends and pathway	To develop an initial understanding of how the economy is expected to grow in the short and medium term
Analysis of climate risks and vulnerability	Diagnosis 1.3	Analysis of baseline climate conditions, emphasizing where risks and vulnerabilities may lie	To develop an initial understanding of climate priorities in terms of potential quick wins and likely hazards
GGGI business plan	Diagnosis 1.4	Management plan for strategy development, including goals, focus areas, and expected timelines	If program plan needs to be approved by government partners and to get buy-in for GGGI operations
Data inventory and gap assessment	Assessment 2.2	Analysis of available data in terms of reliability and methodology, as well as assessment of data needs	If analysis and future environmental monitoring require additional data
Abatement cost analysis	Assessment 2.3	Analysis of costs and benefits of intervention options over the short and medium term	To identify interventions with the highest potential positive impacts and lowest costs
CGE scenario analysis	Assessment 2.4	Analysis of different interventions and their projected economic effects	To develop the business case for green growth pathways, showing how alternative pathways can be successful
Sensitivity analysis	Assessment 2.4	Analysis of how scenarios might respond to different core assumptions	If it seems likely that assumptions will not hold or cannot be predicted with certainty
Distributional modelling	Assessment 2.4	Analysis of how interventions and scenarios might reach different population groups	If it seems that only some groups would benefit from interventions and there is a need to ensure equitable distribution

Tool or Analysis	**Phase and Step** Which step does the tool align with?	**What It Is** Description of the analysis or tool	**When to and Why Use It** Whether it's most appropriate for LICs, MICs, resilience strategy, sector strategy, etc.
Green growth prioritization	Assessment 2.5	Filtering of interventions to account for qualitative measures such as stakeholder alignment and specific geographic needs	To account for factors that may not be captured in a quantitative exercise
Multiattribute analysis	Assessment 2.5	Mixed methodology analysis to scale, rate, and filter interventions for where they will be most feasible	When land use and specific geographic or regional concerns may need to be considered
Iterative risk management	Assessment 2.5	Time frame analysis to determine when an intervention will be most effective	If climate forecasts may make an intervention more or less effective
Costing and financial analysis	Assessment 2.5	Costing of interventions and analysis of possible funding sources and mechanisms that could cover the costs	If government cannot fully fund selected intervention packages and additional financing or financial proposals need to be developed
Project log frame or results framework	Action Planning 3.3	Identifying the logical framework to connect program activities and policy changes to desired outcomes and high-level goals	To develop indicators and understand how to measure impact pathways
Target setting	Action Planning 3.4	Setting out goals for environmental and economic indicators	To align and state intended goals; this can be more important for participation in international climate negotiations
Capacity gap analysis	Implementation 4.2	Assessment of the types of capacity needs at different institutions	If capacity needs are a pressing concern for the country; may be more relevant in low-income countries
GHG inventory	Implementation 4.3	Ongoing monitoring of national emissions	To track progress toward mitigation goals

Annex B: Guide to Procedures under Various Phases of Green Growth Planning

Inception. In this pre-planning phase, country program teams seek to understand the local context and regulations for establishing presence in a particular country.

Procedure	Description	Guides/Examples
Establishing an operational mandate	This varies significantly by country, depending on how initial engagement occurred. Generally, all country programs will need to figure out local registration rules and processes so they can operate legally, even if they have secured high-level invitation.	MoU or official agreements with partner countries
Setting up following GGGI administrative processes	Administrative processes (banking and financial, procurement, and human resource systems) should follow GGGI policy and guidelines as well as a local labor and financial regulations.	GGGI policy guidelines for finance, procurement, and HR systems; terms of reference for advisors, managers; organogram, i.e., diagram of office structure

Diagnosis. This is all about establishing a country presence, making the case for green growth, including a program plan, and bringing key stakeholders on board.

Procedure	Description	Guides/Examples
Conducting situation analysis	Situation analysis provides a broad overview of the country's context, regulatory policy, and economic and environmental governance. The goal should be to develop a deep understanding of a country's systems.	Situation analysis; Country planning framework (CPF) situation analyses
Conducting stakeholder mapping	A stakeholder mapping should identify and classify all stakeholders who may be involved in green growth planning at the beginning of the program to determine models for stakeholder engagement.	National level stakeholder mapping; CPF stakeholder mapping and assessment
Conducting green growth opportunity analysis:	This covers any preliminary studies needed to develop a green growth planning program. It could go hand in hand with a situation analysis and end up being an introductory analysis to a future, more in-depth study.	UAE's global benchmarking study; Ethiopia-LTS International case study
Global benchmarking and case studies	This identifies relevant global best practices, which could be replicated in a country with natural or governance features that are similar to those that have successfully done green growth planning.	
Initial data collection	This results in a catalogue of openly available data resources for use in preliminary analysis.	
Economic trend analysis:	This tackles baseline economic trends and pathway to develop an initial understanding of how the economy is expected to grow in the short and medium term.	Ethiopia's economic transition study
Analysis of climate risks and vulnerability	This identifies baseline climate conditions, emphasizing where risks and vulnerabilities may lie in order to develop an initial understanding of potential quick wins and likely hazards.	
Developing green growth planning program	Management plans outline the goals, focus areas, expected timelines, and governance structures.	UAE's business plan

Assessment. This is usually done with the goal of developing a green growth strategy. It generally requires analyzing macroeconomic and sector-level impacts of potential green growth programs.

Procedure	Description	Guides/Examples
Carrying out stakeholder consultations	Tools to collect stakeholder input include technical workshops, one-on-one meetings, and staff embedment in government agencies.	Consultation meetings; Technical workshops; Embedded staff model
Data inventory and gap assessment	This seeks to identify data gaps and develop a data management system, focusing on data reliability, collection methodology, and future data needs.	
Conducting abatement cost analysis	This delves into the costs and benefits of possible interventions in the short and medium term, with the goal of identifying actions with the highest potential positive impacts and lowest costs.	Ethiopia's green economy strategy; UAE's abatement cost analysis toolkit
Conducting computable general equilibrium (CGE) scenario analysis	This explores different interventions and their projected economic effects in order to develop the business case for how green growth pathways can be successful.	UAE's macroeconomic model and analysis
Conducting sensitivity analysis	This looks at how scenarios might respond to different core assumptions, especially if it seems likely that assumptions will not hold or cannot be predicted with certainty.	UAE's macroeconomic model and analysis
Distributional modelling	This examines how interventions and scenarios might reach different population groups to ensure equitable distribution of benefits.	UAE's macroeconomic model and analysis
Prioritizing green growth interventions	This aims to filter interventions based on their feasibility. It accounts for qualitative measures such as stakeholder alignment and specific geographic needs to identify factors that may not be captured in a quantitative exercise.	Ethiopia's resilience strategies relating to forestry, agriculture, water, irrigation, and energy
Conducting multiattribute analysis	This mixed methodology weighs, rates, and filters interventions depending on their feasibility. It is most useful when considering land use and specific geographic or regional concerns.	Ethiopia's resilience strategies for forestry and agriculture
Performing iterative risk management	This aims to determine when an intervention will be most effective based on climate forecasts.	Ethiopia's resilience strategies for forestry and agriculture
Costing and conducting financial analysis	Costing and financial analysis determines the costs of interventions and explores possible funding sources and mechanisms that could cover such costs. It may need to adhere to different donor or private sector requirements if government cannot fully fund the selected intervention packages and additional financing or financial proposals need to be developed.	Ethiopia's resilience strategies relating to forestry, agriculture, water, irrigation, and energy; UAE's analysis of public investment levels

Action planning. Establishing and operationalizing governance structures and administrative processes for country programs may take time and extensive negotiation. In some cases, this may involve setting up a funding mechanism or a new ministry, and in others, it could be as simple as working with a policy and planning unit on annual programs and budgets.

Procedure	Description	Guides/Examples
Performing stakeholder validation	While consultants, GGGI staff, and a high-level committee may drive strategy development, programming, and policy, change needs to happen through line ministries, regional authorities, and staff, which need to agree with the plan and take responsibility for different aspects of it. This can happen through meetings and workshops.	UAE's stakeholder validation process
Developing institutional mandates	Actual implementation needs to happen through line ministries, regional authorities, and staff that have proper operational mandates to manage programs. Institutional development processes should drive forward the process of ensuring that proper authorities have the mandate to coordinate and implement green growth programs.	Ethiopia's Ministry of Environment and Forest (MEF) and Climate Resilient Green Economy (CRGE) Facility
Working with the government on budgeting	When government budgeting needs to commit to green growth financing, then GGGI may need to work with government partners to ensure that the right line items are included, that public investment is optimal, and that program development is in line with government funding cycles.	Ethiopia's Fast-track Initiative (FTI) proposals and Growth and Transformation Plan (GTP) process; UAE's 2.4 percent of GDP policy
Developing donor funding mechanisms	If donor funding is needed, then systems may need to be created to pool funding and ensure that proper financial safeguards are in place.	Ethiopia's CRGE Facility operations manual
Developing green growth projects	Depending on the funding source, outputs could include a project proposal meant for a donor or a policy program in a government planning unit, a business plan meant for the private sector, or a detailed implementation plan that falls in line with regular government planning processes and templates. A clear project plan should outline the details of how a project should be implemented.	Ethiopia's FTI project proposals; UAE's 12 policy program packages that form the UAE National Green Growth Strategy (NGGS)
Developing bankable projects	Bankable projects refer to interventions that are ready to be financed and have robust business cases and returns. Favorable enabling environment policies need to be developed to attract private sector partners.	GGGI's sustainable financing program
Developing project results framework	Identifying a logical framework that can connect program activities and policy changes to desired outcomes and high-level goals facilitates formulation of indicators and an understanding of how to measure impact pathways.	Ethiopia's log frame; UAE's NGGS road map
Setting national targets	After analyzing interventions and green growth pathways, there should be an understanding of the kind of environmental commitments that can be made and what targets are realistic.	Ethiopia's INDC
Evaluating or selecting projects	Once green growth project plans are developed, GGGI may be involved in helping government partners select the best ones. Criteria should weigh the projects around priorities that could include scalability, geographic reach, intended impact, and financial resources.	Ethiopia's FTI selection criteria

Implementation. GGGI's role in implementation should always include some level of strategic support for capacity development and overall M&E of programming. For some countries, this may involve more extensive engagement, while others may just look toward a light support model depending on their needs.

Procedure	Description	Guides/Examples
Setting up governance body and processes	A government body set up during the action planning phase should begin meeting and set out process norms for monitoring programming and making any high-level operational decisions. Committee or institutional bylaws, policies, and procedures need to be established.	UAE's top governance (Emirates Green Development Council); Ethiopia's MEF and CRGE Facility
Assessing needs and conducting capacity-building activities	An assessment of capacity needs at different institutions can be completed if such needs are a pressing concern for the country, which may be more generally true in LICs. Capacity building can happen through workshops, training, help desks, embedded staff models, and meetings, depending on the needs of a country.	Ethiopia's capacity assessment and National Capacity Development Program (NCDP) implementation plan; and UAE's knowledge-sharing and training workshops
Establishing a project monitoring system	Project monitoring systems can vary, but, at the very least, they should include some kind of reporting to decision makers and governance structures. More advanced systems may have online templates, while more basic systems may just be a weekly check-in call and an Excel tracker.	Ethiopia's FTI monitoring tracker
Climate monitoring	Needed in most countries, ongoing monitoring of national emissions to track progress toward mitigation goals requires financing and data.	UAE's GHG inventory system
Undertaking evaluation studies	Evaluation studies should be planned from the beginning of a project cycle when KPIs are developed and a measurement methodology is determined. For more qualitative assessments, progress evaluations and learning documentation can be implemented.	Ethiopia's learning history; UAE's status of green economy progress reports
Incorporating lessons learned	Lessons should be incorporated into updated programs and policies through continued stakeholder engagement.	Ethiopia's CPF 2016-2021

Annex C: Mainstreaming and Implementation of Green Growth Strategies at the State Level (India)

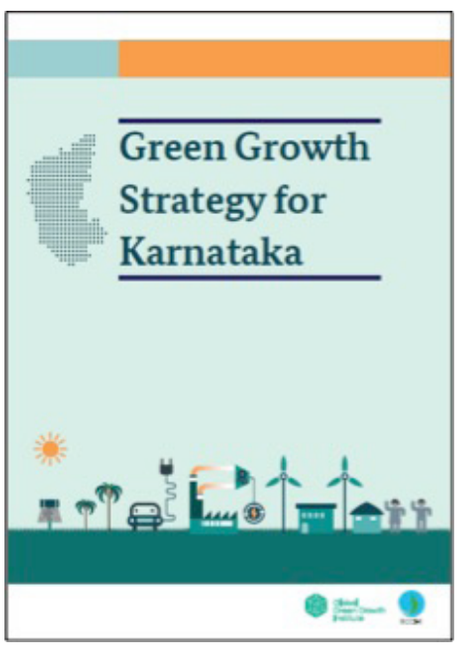
The state of Karnataka is one of India's industrial powerhouses and a leader in the service and information technology industries. It faces considerable sustainability challenges and seeks to become climate-resilient through green growth actions, with a particular emphasis on the energy, agriculture, forestry, and water sectors.

GGGI, in conjunction with a consortium of partners, including the Bangalore Climate Change Initiative-Karnataka, supported the state in transitioning toward sustainable growth through the project, "Mainstreaming and Implementation of Green Growth Strategies."

The initiative entailed developing a green growth strategy for Karnataka which built upon existing policies and programs, and provided a decision-making framework to policy makers. Development of the strategy included using sophisticated analytical tools and models as well as sectoral analysis focused on energy, agriculture, forestry, and water. The strategy arrived at identifying a prioritized set of green growth interventions that included electric transportation, energy efficiency, water-energy nexus in the context of the agricultural sector, and renewable energy.

As a follow-up to the strategy, GGGI also assisted the government in implementing some of the high-priority green growth opportunities, through preparing sectoral policy implementation road maps, investment projects, and capacity-building activities.

The intervention contributed to strengthening the State's Action Plan on Climate Change (SAPCC), ensuring coherence with the overarching federal National Action Plan on Climate Change, and also mainstreaming SAPCC strategies into sectoral policies and investment plans at the subnational level.



Source: GGGI, *Green Growth Strategy for Karnataka* (2014), http://gggi.org/wp-content/uploads/2014/12/Karnataka-GG-Report_FINAL_Web-Version.pdf.

Annex D: Mainstreaming Green Growth Principles into District Development Planning – Indonesia

The province of Central Kalimantan faces considerable challenges related to the expansion of oil palm and rubber plantations. These problems include extensive illegal deforestation, abuse of licenses, destruction of carbon-rich peatlands, encroachment into protected areas, and exacerbation of social conflicts. The incomplete spatial plan of the province complicates many of these problems, as jurisdictional boundaries and licensing authority are often unclear.

Since 2013, the Indonesia-GGGI Green Growth Program has supported the Central Kalimantan provincial government and more specifically the districts of Pulang Pisau and Murung Raya in designing and implementing green growth strategies, including mainstreaming green growth principles into their development plans. The process is illustrated in the timetable below. The first step was to assist the district governments in assessing current plans and planning procedures and identifying entry points for green growth to support their development aims. The rubber and oil palm sectors are the biggest drivers of deforestation, but critically they are also the most important source of income for local people and the province as a whole. Therefore, green growth strategies, which identify how continuing economic growth can deliver benefits to local people while reducing environmental destruction and harmful social impacts, have targeted these sectors.

As a result of this collaboration, Murung Raya and Pulang Pisau have embraced green growth principles and practices in their development planning, and both districts have allocated funds for green growth activities. Murung Raya has earmarked IDR 52.9 billion (nearly USD 4 million) for green growth implementation in 2016, particularly the integration of green growth criteria into village development plans. The district leader has also established a green growth working group, of which GGGI is a member. Similarly, Pulang Pisau has dedicated IDR 15 billion (about USD 1 million) to mainstreaming green growth in district economic development in 2016. These public investments demonstrate a real commitment by local governments to move away from destructive practices and toward a greener model of economic growth.

Diagnosis Program setup	**Strategy Design** Analysis and intervention identification	**Action Planning:** Project, policy, and institutional planning	**Implementation** Implementation of policies and programs
2014	2014–2015	2015–2017	2017–2020
Stakeholder engagement and mapping	Evaluation of biophysical assets and vulnerability	Government budget planning and allocation	M&E of policies
Review of development plans and objectives	Socioeconomic profiling and analysis	Donor engagement and investment	Project monitoring
Assessment of risks and opportunities	Identification and characterization of green growth sectors	Designing of bankable projects	Evaluation studies
Formulation of a green growth vision	Identification of green growth options by sector	Private sector engagement and investment	Iterative planning
	Prioritization of actions by sector	Establishment of safeguards and measurement, reporting, and verification	

Annex E: Ethiopia and UAE Country Study and Analysis Reports

Executive Summary

GGGI developed this report in order to create green growth planning guidelines based on empirical evidence from case studies of its program experience in Ethiopia and the United Arab Emirates (UAE). It uses a process evaluation methodology to review how these country offices engaged stakeholders, conducted analysis, and supported implementation from 2010 through 2015, and aligns the steps they took with the GGGI Value Chain. Through this process, a series of lessons learned and success factors emerged, as well as an understanding of how the green growth planning models may differ in different country contexts, including income levels and socioeconomic structures. These findings were then used as the primary inputs for the planning guidelines.

Results of the country studies and comparative analysis included a green growth planning process that is similar to the GGGI Value Chain but which further defines steps for general planning and implementation phases. They reconcile the different processes and approaches taken by UAE and Ethiopia to highlight common challenges and lessons. The comparative analysis concluded that this process would not be inherently different based on income levels, i.e. lesser developed countries (LDCs) versus middle-income countries (MICs) or high-income countries, but that specific approaches may need to account for differences in institutional capacity, financial models, stakeholder landscapes, capacity-building needs, and level of engagement. Major lessons were broken down by country and value chain phase, and could be summarized through the following success factors that cut across programming and local context:

- Alignment with existing and ongoing national development plans
- Government-led process at both local and federal levels
- Broad-based stakeholder engagement and coordination inclusive of donors, the private sector, and civil society
- A space for innovation and testing
- Political neutrality with an agenda based solely on empirical evidence and validated analysis
- Cross-sectoral integration with institutional coordination that cuts across sectors and levels
- Flexibility depending on the needs of a country

Common challenges included (1) translating a high-level mandate for green growth into a broad program with buy-in; (2) finding the right models to establish a country presence; (3) balancing outside technical support with local ownership; (4) finding government partners with a mandate for cross-sectoral coordination; (5) working with the institutional capacity of stakeholders and defining capacity support models; (6) selecting programs in alignment with ongoing work; and (7) monitoring program implementation in a meaningful way that can be incorporated back into government planning cycles.

These factors and findings were used as the primary input for developing the Green Growth Planning Guidelines, which further define the process model to be applicable across country contexts and reference the resources, options, and approaches that country programs could take to develop green growth plans.

Introduction to GGGI, Country Studies, and Value Chain

When the idea of GGGI emerged in 2009, global climate negotiations had only reached limited agreements on environmental commitments and emissions targets. Nations around the world were trying to figure out how to effectively plan for climate change and navigate climate priorities. Republic of Korea had launched a green growth strategy to outline how it would meet climate targets and plan for sustainable economic growth. Its plan included the aim to set up an intergovernmental organization that would bring like-minded countries together to support each other's transition to green economy.

The United Nations Framework Convention on Climate Change's (UNFCCC) 16th Conference of Parties (COP 16) took place in Mexico that year and ended with an agreement to establish a climate fund to help developing countries deal with the effects of climate change. The agreement itself was a mark of success, but there was no road map on how to raise money, nor a plan on how to provide assistance to countries in need.

Against this backdrop, GGGI, which formally launched earlier that year as a Korean nonprofit, started to take shape as an international asset that could provide practical solutions to the persistent deadlock in global climate action by helping developing countries shift their economic paradigms to sustainable development; it saw its roster of contributing members grow to include Denmark and UAE. GGGI would improve understanding of how to sustain growth without increasing emissions and enhance resilience before environmental hazards overwhelm economies and societies. Green growth, for GGGI, is about finding opportunities presented by changing climate conditions, utilizing natural resource bases smartly, and harnessing economic development around those opportunities.

By 2012, GGGI had emerged as a full international organization with donors and partners around the world. It supports member countries in pursuing green growth that aligns with national economic development. Green growth plans are government-led and aim to trigger economic transition by putting together public policy interventions and investments that support achieving green growth across a country's economic, social, and environmental goals. They are not the only way to achieve green growth but are one of the most comprehensive approaches that a number of countries have utilized.

GGGI's approach spans regional and federal levels to coordinate stakeholders across sectors in the public and private spheres in order to advance research, policy, and practice. GGGI helps members accomplish green growth analysis, strategy development, capacity building, stakeholder coordination, and implementation monitoring by integrating these activities into national planning processes to provide government counterparts the support they need.

Ethiopia and UAE were among the first countries to join GGGI in 2010–2011. Both were early leaders in their respective regions in seeking to catalyze green growth. They had similar starting conditions with high-level political buy-in for green growth, rapidly growing economies, and developmental concerns that could be resolved with green growth, including needs for accelerating economic diversification to move away from hydrocarbon dependence (UAE), and to build sustainable production (Ethiopia).

For those reasons, GGGI chose to focus on UAE and Ethiopia for its initial case studies. The following report will look at the process that each country has gone through. It will make reference to the GGGI Value Chain, which the institute created in 2014 to lay out its service offerings along a general process outline to help highlight how it provides support to emerging and developing countries. By following each country's experience and mapping it along the value chain, a definitive green growth planning process should emerge, which combines the value chain and service offerings with the realities of country experiences. This process evaluation helped identify additional green growth planning steps and define how the process can adapt to different local contexts, as well as drew lessons learned from country experience.

GGGI's five-year strategy outlines seven organizational principles, which align with success factors identified through the Ethiopia and UAE country experiences:

- Alignment with existing and ongoing national development plans
- Government-led process at both local and federal levels
- Broad-based stakeholder engagement and coordination inclusive of donors, the private sector, and civil society
- A space for innovation and testing

- Political neutrality with an agenda based solely on empirical evidence and validated analysis
- Cross-sectoral integration with institutional coordination that cuts across sectors and levels
- Flexibility depending on the needs of a country

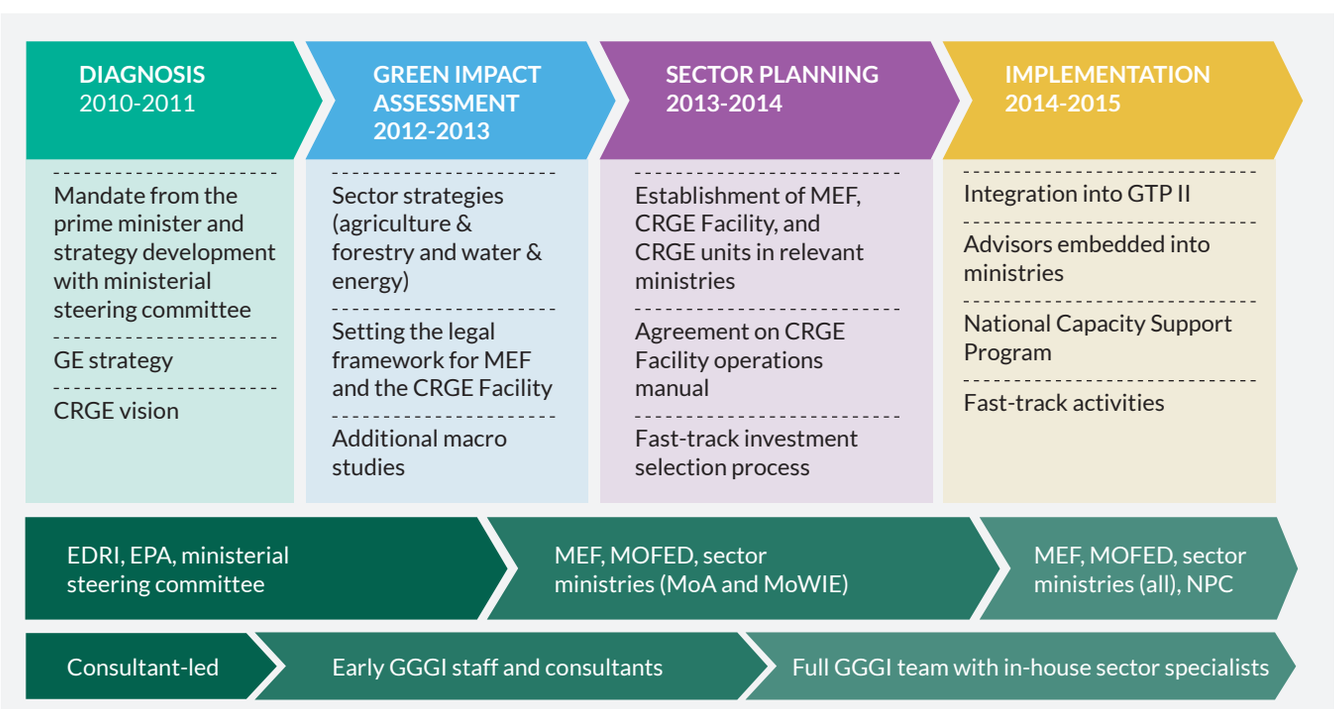
When working in a partner country, GGGI has a flexible operating structure that generally follows these principles to find the best solutions and processes. The GGGI Value Chain represents an indicative process that moves from analytical and program planning through implementation. In the diagnosis stage, countries establish a baseline of economic growth and sustainability, generally making the case for green growth. In the impact assessment stage, macroeconomic and sectoral assessment and prioritization happens, exploring how to achieve development targets. The strategy and planning stage involves the assessment of various policies, institutions, costs, and investment requirements to develop comprehensive actions, programs, and concrete implementation plans. Finally, the design, financing, and implementation stages tackle institutional setup, specific policy legislation and enactment, bankable project development, financial mechanism design, and establishment.

Each value chain step comes with its own tools and methodologies, and different countries may move through the value chain in different ways. This report will analyze the experiences in Ethiopia and UAE along the value chain process and propose more specific Green Growth Planning Guidelines from them.

Figure 3: GGGI Value Chain[9]

Country Profiles

Ethiopia



9 GGGI, http://gggi.org/wp-content/uploads/2012/10/value-chain-2-A4.pdf.

Pre-GGGI Country Context and Diagnosis: Development, Economic Growth, and Sustainability Diagnosis

The late Prime Minister Meles Zenawi drove forward early progress toward developing a national green growth strategy in Ethiopia. The eventual strategy drew on early country work through the Environmental Protection Authority (EPA), including the 1997 National Environmental Policy and the 2007 Program of Adaptation on Climate Change.

Zenawi was an early advocate of the green growth movement, both internationally and domestically. In 2009, he, together with other international climate leaders, started mobilizing support for a global commitment to green growth at UNFCCC's COP 15 in Copenhagen. This laid the foundations for establishing a high-level United Nations Working Group on Climate Change Finance at COP 16 in 2010. While the prime minister worked on the international side, he also mandated the EPA and the Ethiopian Development Research Institute (EDRI) to work on the National Green Economy (GE) Strategy and Vision for a Climate-Resilient Green Economy (CRGE).

In addition to the top-down support provided by Zenawi, there were also strong social, economic, and environmental rationales for green growth in Ethiopia. The country is at high risk of climate change impact as it is dependent on rain-fed agriculture to support livelihoods (about 45 percent of GDP and 90 percent of exports, according to the World Bank) and uses foreign currency to import and subsidize fossil fuels (between 2 percent and 4 percent of GDP, as per CRGE). With high rates of extreme poverty, the population is also among the most vulnerable to weather events and hazards and suffers significantly from economic losses associated with drought and flooding. Early country-level analysis has shown evidence of climate change in Ethiopia over the last 50 years, with temperatures rising and rainfall patterns becoming more unpredictable each year. Agriculture and forestry sectors are particularly at risk when looking at all future climate scenarios. Additionally, plans for up to 90 percent of Ethiopia's electricity to be from renewable sources were already in place. Most stakeholders and individual actors realized that climate change would need to be addressed in order for Ethiopia to reach its goal of becoming an MIC by 2025.

Drafting of the GE strategy started in 2010 through a GGGI-funded consultancy, which worked through EPA and EDRI and received support from development partners, early GGGI staff based in Seoul, and government directors. Zenawi's chief economic advisor, Newai Gebre-Ab, took the lead in developing both the strategy and planning process that would eventually give GGGI a mandate to operate in Ethiopia. Gebre-ab chaired a CRGE ministerial steering committee with relevant sector ministers who gave input to the strategy and pushed forward policies for achieving green growth. The initial operation model for strategy development had senior consultants and GGGI staff flying in to meet with the committee and attend workshops, while some junior consultants and staff stayed in country for short-term periods. Neither were permanently based in Ethiopia, though short-term staff did provide some continuity and ongoing engagement. Direct engagement of the prime minister's office, quick progress by international consultants, commitment from local counterparts to finding "green" solutions, and a clear deadline to unveil the strategy at COP 17 created a great deal of momentum for the process, enabling the Ethiopian government to present the CRGE vision and green economy strategy in the 2011 climate summit in Durban.

The momentum also allowed GGGI to quickly establish a country presence. In 2012, for the first time, GGGI hired staff who would be located full-time in Ethiopia, moving away from the "fly in-fly out" consultant-led model. The work to cascade the initial vision through sector strategies, planning, and implementation would require day-to-day engagement with partners throughout the government. New staff were able to build off of the high-level buy-in, quality analysis, particularly around the GTP, and cross-ministerial engagement and coordination developed from 2010 to 2011. Efforts to pass on understanding of initial analysis and relationships forged, though, lost some momentum as focus and management shifted more to EPA, which had played a smaller role in strategy development. But overall, the move to have a permanent, in-country, and EPA-managed staff allowed GGGI to support government counterparts in a more meaningful way.

Zenawi's leadership was a major driving force toward the development of an Ethiopian green growth strategy and establishment of GGGI's mandate to operate in the country. His death in 2012 affected the energy that had been built around CRGE, as the whole nation adjusted to new government leadership. But work continued as his successor, current Prime Minister Hailemariam Desalegn, had expressed commitment to continuing plans that had already been set in motion.

Lessons Learned

- High-level support is needed to initially move into a country.

- Building the support structures with other leaders and line ministries will ensure sustainability (i.e., both bottom-up and top-down approaches are necessary).
- Engaging leadership across all sectors will garner broad-based support; in Ethiopia, often day-to-day contacts were at the minister or senior director level.
- Trade-offs exist with the use of outside consultants to develop strategies, but engaging consultants may be necessary in the process of establishing a GGGI office.
- Initial work must build on existing work and programs so as to not "reinvent the wheel."

Assessment and Strategy Development: Macroeconomic Impact Assessment, Sectoral Green Impact Assessment, and Analysis of Costs and Investment Requirements

Early programs and strategies to address climate change in Ethiopia were not integrated into the bigger national development plans,[10] including the 2010-2015 GTP. The GE strategy and its targets focused on how to achieve GTP in a low-carbon way. GGGI had to wait until GTP II to fully mainstream green growth into government planning, both economy-wide and at sectoral levels. The first few years of GGGI operation were very much about figuring out how to align the vision with existing programs that could be coordinated and implemented by EPA, setting up the GGGI office, establishing a funding facility, and defining resilience strategies at the sectoral level.

Early ministerial steering committee meetings signaled the need for a line ministry to take charge of coordinating CRGE across sectors. EPA had this mandate initially and made some progress where it could, but it did not actually have the authority to coordinate other ministry programs. In 2012, the government proposed establishing a Ministry of Environment and Forestry (MEF) to supplant the EPA, with an expanded scope around forestry and climate change and the responsibility of coordinating CRGE. In addition, the Ministry of Finance and Economic Development (MoFED) would establish a CRGE facility to focus on financing. Discussions on the need for sector-specific resilience strategies (initially for agriculture) started as early as 2011. Through 2014, GGGI and development partners received requests from the Ministry of Agriculture (MoA), the Ministry of Water, Irrigation and Energy (MoWIE), the prime minister's Economic Policy Analysis Unit (EPAU) and EDRI to create more detailed CRGE sector strategies.

These structures specifically focused on developing government capacity. Several discussions with the World Bank, the United Nations Development Programme (UNDP), and other development partners explored coordination and funding approaches. UNDP proposed a multipartner trust fund that it would administer, while the World Bank moved forward with coordinating programs around productive safety nets and household asset building, each of which had many climate components. The World Bank also established the Climate Innovation Center, which would focus on private sector investments. Prior to the establishment of MEF and the CRGE Facility, climate resilience funding from development partners went through the ministries.

In order to address the lack of specifics about how to select and implement activities to reduce emissions as well as a sector-based climate resilience framework for choosing interventions, MoA created a CRGE unit in 2012, and GGGI commissioned the Global Climate Adaptation Partnership to write the Agriculture and Forestry Climate Resilience Strategy. In 2013, GGGI hired an advisor to work with MoWIE counterparts to develop a strategy. A GGGI advisor embedded within EPAU led additional macroeconomic studies, including case studies focused on green growth lessons from other countries, a macroeconomic analysis, and a study on the Ethiopian economic transition. These studies aim to incorporate green growth analysis into GTP II, which would cover government development planning from 2016 to 2021.

The climate resilience strategy for agriculture and forestry analyzed historic climate trends and future risk scenarios in order to develop response options and a high-level road map for how to begin implementation. It filtered potential climate actions down to 41 priority options from more than 300 identified in the GE strategy. A multiattribute analysis determined where an option might be most effective, an iterative risk management methodology established how to employ an option given different climate scenarios, and a financial analysis identified and estimated costs and funding needs based on past, present, and projected future investment flows.

The water and energy strategy went through a similar process, with a future climate modelling analysis based on temperature and rainfall, which feeds into a risk analysis looking specifically at projected impact to economic growth and poverty alleviation. Risk analysis focused on power generation, energy access, irrigation, and access to water, sanitation, and hygiene. Based on the risks, strategic priorities were identified for each sector with high-level costing done.

10 Also referring to the Plan for Accelerated and Sustained Development to End Poverty (PASDEP), which ran from 2006 to 2010.

These sector strategies were a major step forward in the planning process with relevant ministries. The climate resilience sector strategies allowed GGGI to have a solid base to provide capacity support and implement programs. In addition to providing the foundation for the sector strategies, the GE strategy also was the starting point for the creation and submission of Ethiopia's Intended Nationally Determined Contribution in 2015. Ethiopia was the first LDC to submit an INDC, and its targets are among the most ambitious of any country, indicating its continued commitment to green growth. Achieving the targets requires financing and executing the sector strategies to their full extent.

Lessons Learned

- Immediate integration may not be possible, as alignment with national development planning needs to follow existing timelines and frameworks.
- New institutions may need to be created or expanded when existing agencies do not have a mandate to coordinate across sectors.
- Sector strategies should prioritize actionable programs and are needed to translate macroeconomic assessments into activities that can be implemented.
- When other large, multinational stakeholder are present, there should be a process to coordinate mandates and programs.
- Although strategies may include high-level costing for general prioritization and cost-benefit analysis, financial planning needs more detailed investment planning.
- It takes time to build country staff and capacity, so the use of consultancies should be considered until local hires can fully manage the process.

Subsector Strategy, Planning, and Finance: Policy and Institutions Analysis, and Development of Sectoral Investment Plans and Selection

As the CRGE vision, GE strategy, and sector strategies were being developed, efforts to engage stakeholders and coordinate with development partners beyond establishing mandates were taking place. From as early as 2010, the U.K. Department for International Development (DfID) initiated a process of convening partners, including the World Bank, UNDP and CSOs like Oxfam, around the issue of climate change. These partners in conjunction with the relevant ministries contributed to the early development of the CRGE vision and ensured funding and coordination of early programming. As it developed its mandate and presence throughout 2012 and 2013, GGGI made sure they also closely aligned with the efforts of these partners.

Early on, donors and implementing NGOs recognized the need to establish a mechanism to receive climate finance. Although UNDP had already set up a fund, development partners agreed that channeling funding directly through the government and MoFED would be ideal, so long as proper safeguards were in place. Prior to the creation of MoFED's CRGE Facility, two funds[11] were already pooling donor funding toward climate initiatives. At this time, development partners worked out the legal framework and financial safeguards for the facility. Much of the early stakeholder programs, coordination, and implementation progress happened through the initial funds. By mid-2013, GGGI had embedded an advisor into MoFED, and by late 2013, the MOU to establish the CRGE Facility had been signed. Much of the work throughout 2013 was around drafting and agreeing on the facility's operations manual, which outlined the organizational design, management, and funding program cycles.

The operations manual served as the key policy planning document, laying out the foundation for fiduciary safeguards of the facility. Earlier iterations of planning documents and implementation mechanisms took many forms, including the Methods to Motivate and Support Results, iPlan, and Strategic Reduction Mechanisms. None of these took hold as they did not have proper government owners or integrate with existing programs. The facility and its operations manual finally brought together the right ministries, development partners, and processes with full government buy-in and ownership. It proved successful despite challenges in engaging with proper counterparts. The facility first solicited project proposals from regional and federal government bureaus that directly implemented CRGE programs. These programs would become "fast-track investments," with an initial funding of about USD 20 million from Austria and the United Kingdom and additional money from Denmark and Norway.

11 Strategic Climate Investment Program, created through KPMG and DfID, as well as the Climate High-Level Investment Program, also supported initially by DfID.

GGGI and development partners had been generally monitoring earlier funding pools. By 2014, GGGI organized a systemic stakeholder mapping exercise of development partner support around the CRGE. The final report found that some USD 443,627,083 worth of active initiatives from over 50 development partners were related to CRGE activities. The bulk of support focused on delivery-related activities, directed through government institutions. Planning, resource management, and institutional development received much less finance. The report helped to highlight GGGI's value in providing strategic support for capacity development, where many other actors focused on program implementation.

By the end of 2013, GGGI has several key advisors in place, and in-country staff played an important role in passing down institutional memory to new government entities and providing coordination support. Development partners worked right beside GGGI advisors and government officials in order to create the CRGE Facility and get MEF up and running. At the time the facility was approved in 2013, MEF was officially operationalized to replace EPA, and entering 2014, a government-owned platform hosted all institutional arrangements for planning CRGE activities.

Lessons Learned

- Even when everyone agrees about what has to be done, it will take time to adapt processes and policies in order to address all stakeholder concerns.
- Green growth programs need to be mainstreamed into more general development planning processes; if timing does not allow immediate integration of green growth, temporary plans that can be integrated into the next planning cycle could be considered.
- Development partners are important in LDCs, as both major implementing partners and funders.
- Earlier, formal stakeholder mapping could help speed up the process of coordination.
- Policy change can be tricky to negotiate and requires protracted engagement with in-country staff.
- GGGI is positioned to provide strategic support to government planning, resource management, and institutional development which other development partners who fund direct project implementation often overlook.

Design and Implementation Planning: Policy and Program Preparation and Financial Structures

In early 2014, GGGI focused on supporting CRGE Facility's fast-track investment (FTI) program, which the government created to infuse funding into "early win" projects across the ministries. The government decided to split an allocation of USD 20.8 million among six sectors—water and energy, forestry, agriculture, industry, transportation, and urban development—and decided the amount each would get.[12] Line ministries, MoFED, MEF, and partners collaborated to select projects, with GGGI advisors supporting all actors during the process.

The ministries from each sector had the task of developing FTI proposals; MEF, MoFED, and CRGE technical staff evaluated the bids based on relevance, impact, and the perceived ability to deliver. The process included an additional filter to trigger safeguards for risk management. GGGI advisors embedded in MoFED and MEF provided support to the evaluation process, and those placed in MoA and MoWIE helped develop high-quality proposals. Questions about conflict of interest arose, but these did not apply to GGGI, as it was a neutral, technical party, it was not funding or receiving funding, and the government determined the allocations. Overall, 22 projects across sectors had signed MOUs by mid-2014, with full financing from MoFED and the CRGE Facility.

Apart from providing day-to-day and strategic support to ministries, GGGI extended assistance to MoFED and MEF in formulating the National Capacity Development Program, whose baseline and framework laid out the needs and plans for regional capacity support training modules. It also developed further analytical pieces that were key to integrating CRGE into GTP II planning for the 2016-2021 period. Early macroeconomic analysis and continuing work with the prime minister's EPAU transitioned into work with the National Planning Committee, which developed GTP II's targets, programs, and budgets. In many ways, this work brings the value chain back around, showing that the process of planning and analysis keeps on as development continues. GTP II will be the first national development agenda that fully integrates CRGE targets, with green growth analysis taken into consideration for each sector. GGGI's recent climate economy case study on urban issues also highlighted this work. There are also early plans to develop resilience strategies for less mature sectors (industry, transportation, and urban development).

12 Forestry, USD 3.5 million; agriculture: crops/soil, USD 3 million; agriculture: natural resource management, USD 3 million; water, USD 3 million; energy, USD 3 million; urban development and construction, USD 1.5 million; transport, USD 1.5 million; industry, USD 1.5 million; earmarked spend for agriculture/pastoralism, USD 0.8 million; total spend, USD 20.8 million.

In order to show their value and gain the trust of government partners, GGGI staff supported government counterparts not only in managing the strategic pieces of work, but also in responding to more ad hoc requests around CRGE-related programming. Some significant staff turnover within GGGI in 2014 marked a loss of institutional knowledge and some continuity in managing analysis, but overall the remaining advisors carried on with the work, having enough government buy-in to ensure completion of FTI projects and earlier agreed upon processes.

Lessons Learned

- Financing mechanisms need to include safeguards, which can take time to develop.
- Updated analysis should continue to inform a new cycle of planning, as strategies evolve and new development programs are created; this is cyclical.
- Government ownership of financial mechanisms will allow for continued implementation of programs.
- Selection criteria should consider program sustainability, scale, and potential climate impact.

Implementation and Next Steps

From 2014 through the present period, GGGI's Ethiopia office has been focusing on supporting the implementation of the CRGE strategy. GGGI operations are generally becoming more structured as awareness of CRGE grows, GTP II launches with clear green growth targets, and partner institutions created in earlier stages increase capacity and clarify their own processes and needs.

Advisory support for capacity development and coordination with government counterparts remains the foundation of GGGI activity. Supporting CRGE coordination within each ministry presents a big challenge, given the limited number of staff members working across the entire government to provide assistance on CRGE-related topics—from proposal development and GTP target setting to general programmatic monitoring. There's tension between spending time on pushing forward strategic initiatives versus assisting counterparts with ad hoc requests. The challenge eases as advisors create stronger relationships and deeper understanding of ministry priorities. GGGI is working to address this issue by improving and standardizing the terms of reference for advisors.

FTI implementation is also moving forward. GGGI generally has less visibility in relation to FTI projects as the government directly implements and monitors them. Finding an ideal method to monitoring and evaluating these initiatives proves challenging because though the projects have a duration limited to 18 months, it will take a longer time for their impact to become apparent. Currently, the government can monitor if the projects are meeting important implementation milestones, but it struggles to attribute outcome and impact-level targets. The concern is complex, but GGGI hopes to begin addressing this in the next round of its CPF exercise.

Aligned with GGGI's global strategic plan, the CPF process aims to provide more structure to GGGI operations in Ethiopia from 2016 to 2020 in line with GTP II. The CPF is in the final approval stages and was developed with support and input from key sectoral ministries. It looks at the areas that have previously been prioritized and specifically plans action around those with the most potential impact. In addition, CPF contains plans to finish off outstanding major analytical pieces, including climate resilience strategies for industry, trade, urban development, and transportation; updates the CRGE strategy document into one comprehensive macro analysis that is in line with GTP II; and takes stock of current initiatives and support. Additionally, there is a plan to develop a log frame with a clear baseline to monitor CRGE implementation progress and specific steps for supporting implementation and systematically understanding technical support needs.

There are lingering questions about the implications of implementation for the GGGI country team: Is it merely about providing capacity support and conducting analysis? What is the role of GGGI as partners do on-the-ground implementation? The mandate for monitoring, learning, and evaluation is clear, and in that sense, CPF is laying the groundwork, with plans for stronger knowledge management systems and indicators. Translating the CRGE strategy into action on the ground and into terms that government partners can use for programming is equally important, and that is where the bulk of the work for sector advisors lies. Additionally, much effort is going into aligning policies and proposals so that the CRGE Facility can receive investments from the Green Climate Fund, as well as other potential climate finance sources. Fundraising in the Ethiopia setting will be a continuing job for the foreseeable future.

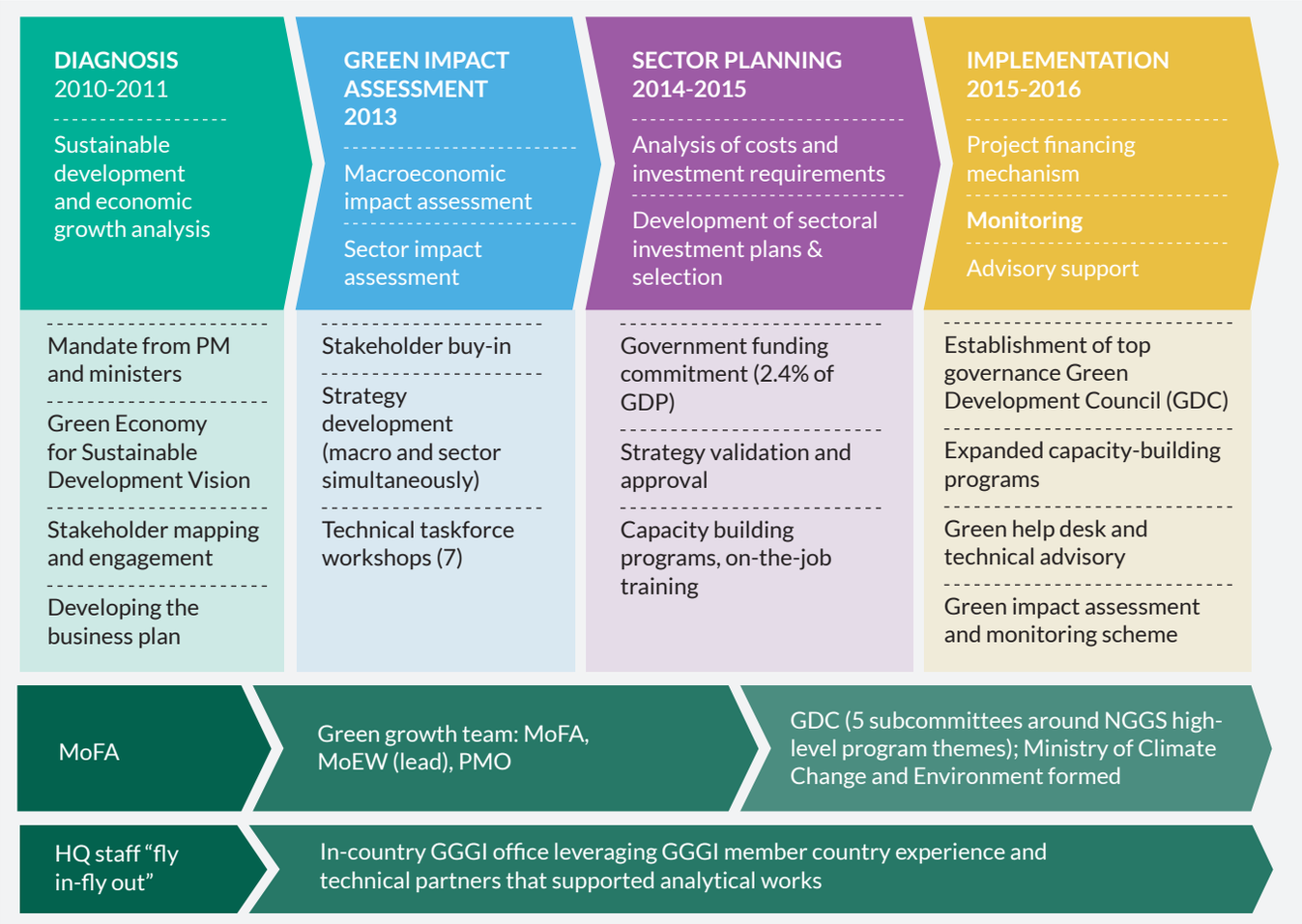
Lessons Learned

- M&E needs to be planned from the beginning of a project, and there should be clear expectations about what can be attributed to GGGI and partners.
- Short- and medium-term projects must have realistic timelines and goals, as impact will happen in the long run.
- Advisors should have clear mandates and job descriptions, and consider the need to respond to ad hoc requests especially as they are building trust and relationships.
- GGGI's role in implementation support may evolve as programs and institutions improve capacity and define needs.

Table 8: Summary Table of Ethiopia's Green Growth Planning Strategy, Tools and Analysis, and Lessons through the GGGI Value Chain

	Diagnosis 2010–2011	Assessment 2012–2013	Sector Planning 2013–2014	Implementation 2014–2015
Strategy	Strong top-down support High-level ministerial committee "Fly in-fly out" consultants and GGGI HQ staff	Resilience strategies developed to provide sector-level road maps Development partner alignment New institutional structures GGGI embedded advisors	Official approval of institutions: MEF, CRGE Facility, line ministry facilities Advisors embedded in all ministries FTI process design	Embedded advisors FTI program implementation GTP II drafted with CRGE mainstreamed Capacity development program designed
Analysis/ Tools	Green economy adaptation strategy Abatement cost curve analysis Climate initiative prioritization Situation analysis	International best practices analysis Macroeconomic study on Ethiopian economic transition Multiattribute and iterative risk management analyses Sector costing	Stakeholder landscape analysis MOU and operations manual for MOFED's CRGE Facility FTI selection criteria Advisor ToRs for ongoing sectoral support	NCDP capacity analysis FTI project tracking CPF, including revised ToRs and log frame
Lessons	Buy-in from lower-level leadership needs to complement high-level mandate Trade-offs exist with consultant-led models, but they may be needed as GGGI establishes capacity There's a need to build off of ongoing work	New institutions or institutional mandates may be required to coordinate green growth Strategies need to be actionable for implementing ministries There's a need to coordinate mandates with other stakeholders, particularly multilateral organizations (U.N., World Bank) and development partners	Interim program models may be needed when GG planning does not match national planning timing Earlier stakeholder mapping could facilitate better processes Financial mechanisms need to consider safeguards for donors Establishing new operating structures and policies will take time	M&E needs to be planned from the beginning and consider impact versus process indicators Advisors need clear mandates and job descriptions that consider ad hoc requests It is important to consider how to measure GGGI success

United Arab Emirates



Background and Pre-GGGI Country Context: Development, Economic Growth, and Sustainability Diagnosis

UAE began considering sustainability issues in the late 1990s and early 2000s as the need to diversify its economy away from oil dependency and protect its limited natural resource base became apparent. Given these realities, top government leaders helped foster public sector environmental management, private sector investment, and large green infrastructure development.

Early achievements included developing green building standards, introducing environmental protection regulations, launching an initiative to measure ecological impact, building solar power plants, and planning the ambitious clean energy diversification project, Masdar initiative. The initiative includes a demonstration city called "Masdar City," which integrates a science and technology hub for sustainability and clean energy research, business, and residential life into a compact urban environment. In addition, the UAE government won a bid to host the International Renewable Energy Agency in Masdar City, further solidifying the country's commitment to a clean energy future. These efforts laid the foundation for UAE to become a global player and regional leader in green development and provided a strong starting point for GGGI to work from.

In 2010, the government had just established its 10-year development vision, which outlined high-level goals around growth, sustainability, and economic diversity to be achieved by 2021—50 years after UAE's establishment as a federation of seven emirates—but it did not have a strategic framework to deliver on Vision 2021.[13] GGGI would help UAE articulate an integrated set of strategic directions to consolidate ongoing but scattered initiatives into a coherent and effective strategy for full economic transition to green growth.

Politically, leaders in Abu Dhabi and Dubai were committed to such as an economic transition. Prime Minister Sheikh Mohammed bin Rashid Al Maktoum saw the need to diversify the economy away from petrochemicals and was looking for solutions that would allow for this shift without affecting overall growth. With a broad mandate from the prime minister, the Ministry of Foreign Affairs (MoFA), in particular then Assistant Minister and current Minister of

13 Along with the green growth strategy, national key performance indicators (NKPI) to measure progress on achieving Vision 2021 were developed in 2013.

State Sultan Ahmed Al Jaber and then Director of Energy and Climate Change and now Minister of Climate Change and Environment Thani Al Zeyoudi, led the initial efforts. Emirate-level initiatives included the approval of Abu Dhabi Vision 2030 and the Dubai Integrated Energy Strategy 2030; the establishment of a green building code called Estidama; the introduction of the region's first efficiency standards for air-conditioning units, eliminating the lowest performing 20 percent of units from the market; and the creation of the Abu Dhabi GHG gas inventory.

Acknowledgment of the possible dangers that climate change can pose on a coastal desert country like UAE fueled the national leaders' commitment to green growth. Rising temperatures could put more stress on UAE's water and energy resources and destroy coastal zones. In addition, hydrocarbon reliance could threaten overall economic growth amid increasing population and consumption. Business-as-usual development, as such, was no longer a viable option. In March 2011, UAE signed an MoU with GGGI, becoming the third contributing member state and signaling its commitment to creating a national plan to overcome environmental challenges and grow the economy.

Lessons Learned

- Ongoing programs can be an entry point for GGGI to begin conversations with government at all levels.
- Economic diversification can be a strong incentive and driver for making the case for green growth.
- A broad mandate needs to exist at the highest level, but ongoing support may need to come from a ministry with a climate mandate.

Diagnosis: Development, Economic Growth, and Sustainability Diagnosis

With the signed MoU, GGGI set up a country office, which immediately worked on developing a business case and plan for green growth in UAE. GGGI and MoFA co-hosted a series of stakeholder engagement sessions with Masdar, the Ministry of Energy, and the environmental agency in Abu Dhabi, as well as a few other relevant entities to develop and finalize the business plan. UAE's goals were clear:

- Create a world-class platform for innovation, economic competiveness, and low-impact growth.
- Promote sustainable living.
- Enhance energy and water security.
- Maintain UAE leadership in global energy markets.

The plan identified seven sectors as main drivers of green growth in UAE: oil and gas; water and electricity; transport; building; industry; waste; and land use and agriculture. The road map in the business plan laid out a path toward developing sector strategies and analysis that could be consolidated into a national strategic framework under the guidance of GGGI. Initial activities would fall under three components: policy and governance, GHG inventory, and capacity building, all of which would require long-term support from the top leadership, constant communication and engagement with stakeholders, a qualified ground team, and data access. Approved by the UAE Cabinet in October 2011, the business plan contained a work plan and timeline for GGGI's operations in the country, setting the foundation for formulating a strategy and activities.

From the time when the Abu Dhabi office was set up in June 2011 until the launch of the National Green Growth Strategy in early 2013, much of the work done by GGGI was around building trust and making the case for green growth. The need to build trust could not be understated, at a time when GGGI was in the process of setting up its country presence and was operating under a "fly in-fly out" staffing model, with managers working out of Korea. Sometimes communications did not move forward, delaying progress. Achieving mutual trust did not happen until such time that GGGI had resident staff in country.

GGGI then launched a renewable micro grid pilot program with the Masdar Institute and the Research Institute for Industrial Science and Technology to show proof of concept of the kinds of programs that GGGI could spur. This signaled GGGI's commitment and investment in the country and demonstrated its potential role in engineering an industry-academia collaboration. But it did not immediately cultivate a robust business area for GGGI, and it was partly because, at that time, GGGI as an institution did not have yet a strong foundation for developing "bankable" projects and green investment services and also because the country was still at an initial stage of building the policy and regulatory framework that would allow more renewable energy to be introduced into the grid system.

Developing a management plan and accessing data also presented challenges to GGGI throughout 2012. GGGI spent much of that year building momentum and awareness of green growth across the UAE government. It held a knowledge-sharing workshop in late 2012 to present trends and analysis for green growth, gathering representatives from organizations that would eventually compose the Green Growth Team, which acted as the steering committee for NGGS.

Lessons Learned

- Defining value is a key step, which can be done through agreeing on a clear business plan that articulates goals, steps, roles, deliverables, and timelines. The plan can serve as a framework for green growth planning in the country and for GGGI's engagement in green growth.
- In-country staff is crucial in gaining trust and buy-in from government counterparts.
- Pilot projects can show initial commitment and example of green growth planning, but if they are not incorporated into a comprehensive strategy, their long-term impact may be limited.
- Data can be a limiting factor in analysis and monitoring; collecting data from stakeholders may be a good entry point for conversations and gaining buy-in.

Assessment: Macroeconomic Impact Assessment, Sectoral Green Impact Assessment, Policy and Institutions Analysis, and Anailysis of Costs and Investment Requirements

The NGGS development process started in January 2013. After the first knowledge-sharing workshop, the Ministry of Environment and Water agreed to lead the Green Growth Team, which included representatives from the Prime Minister's Office and the Ministry of Foreign Affairs. The team met on a weekly or biweekly basis and reported to the ministerial steering group, a body comprising ministers from each relevant sector ministry, on a quarterly basis. The team sought technical assistance from GGGI and partner international organizations to develop the plan's different components. Cooperative agreements funded much of the technical assistance, whose specific objective is to promote both North-South and South-South cooperation.

In 2013 and 2014, GGGI focused on assessment and strategy development, completing several large analytical pieces. Its office remained small and worked directly with government counterparts. It used external technical consultants to build detailed technology costing scenarios and a dynamic general equilibrium model in order to inform policy program development related to NGGS. GGGI organized seven technical task force workshops to collect local experts' ideas and visions for NGGS, and held a second knowledge-sharing workshop to enhance awareness of green growth. The workshops provided valuable insight for the initial pieces of analytical work:

UAE situation analysis. Completed in 2012, this reviewed existing federal and emirate-level institutional mandates, capacities, policy approaches, and analytical outputs, including data. It formed the basis for understanding UAE institutions that GGGI would need to engage with, and helped map the initial stakeholder engagement. By looking at the strengths and weaknesses of various policies, it also allowed GGGI to initially discern how priorities should be set.

Global benchmarking study. Completed in 2013, this reviewed global best practices and helped establish various strategies and programs that could be pursued.

GHG abatement cost analysis. Completed in 2013, this included a cost-benefit analysis of 46 green growth programs and technologies across all relevant sectors and detailed potential effects of these programs on resources, including gas, oil, water, and electricity, as well as on waste and GHG emissions. It considered various technology and behavioral change levers that policy and programming decisions could influence in order to mitigate negative climate change effects. The abatement cost analysis found that many interventions could be self-funded and revenue-generating. These findings, in conjunction with those of the macroeconomic assessment, indicated that although green growth programs would entail short-term transitions costs, they would generate revenue. Generally, UAE is in a unique position given the government's commitment to fully finance NGGS programs, pledging to allocate 2.4 percent of GDP toward green growth, a level assessed to be viable for public investment based on analysis of potential crowding-out effects resulting from aggressive government intervention. If too much capital is injected too quickly into an economy, before industry is ready to absorb it, then price and wage inflation could occur. This analysis allowed GGGI to suggest a set of feasible options for public investment level, with associated risks, to stimulate the largest returns through a multiplier effect at the lowest public cost in the long term. GGGI focused financial analysis on this public investment

requirement and private sector investment. The GHG abatement cost analysis utilized the latest local data to come up with realistic sizing of opportunities from technology and policy measures based on integrated economic and environment cost measures.

Macroeconomic impact assessment of green growth. Also completed in 2013, this used a macroeconomic equilibrium model, as well as a CGE to estimate the impact that likely technology and policy interventions would have on GDP, GHG emissions, job, trade balance, and energy mix. It looked at business-as-usual scenarios as compared to various green growth pathway scenarios projected through 2050. These assessments laid out the case and rationale for developing a national strategy. They provided clarity as to the priorities, timeline, and targets that could be adopted under different programming and economic and environmental scenarios. They illustrated how green growth could boost several economic indicators and why these benefits would be greatest if implementation happened immediately.

Green growth data gap analysis and data repository. Completed in 2013, this aimed to collect and assess international and local data sources that were available to the program in order to serve as reference for how to establish a national green growth data system. The data gap analysis and repository also buttressed continuing green growth analytics and GHG inventory work. Plans for a national GHG inventory system could permanently help UAE estimate emissions, and it was contingent on data availability. Ongoing stakeholder consultations provided much of the data, representing an important contribution of partners to the analysis process.

Due to the importance of up-to-date, locally sourced data to inform policy decisions, GGGI developed a systematic stakeholder engagement strategy and continuously tracked it throughout the planning process. The studies and analysis formed the knowledge base and helped identify a menu of cost-effective solutions that could be incorporated into the final strategy. GGGI handed the newly developed analytic toolkits and locally adapted methodologies over to relevant ministries and the National Bureau of Statistics, and organized associated training sessions.

Lessons Learned

- Data are a critical element to strategy development. With extensive efforts to collect up-to-date, locally sourced data and get data inputs validated, the green growth strategy can stand on a robust foundation. Transparency and rigorousness around data foundation, analytic assumptions, and methodologies can help earn stakeholder trust and encourage ownership.
- Cross-sectoral, technical expert engagement is required to develop technically grounded, viable policy proposals.
- Stakeholder ownership is important even at the analytic and assessment phase.
- To ensure actionability of policy programs, clear cost-benefit analyses both in monetary and nonmonetary (e.g., job creation, new sector creation) terms must be put in place and directly link to various options in a comparable way.

Strategy and Planning: Policy and Program Preparation, Financial Structures, and Development of Sectoral Investment Plans and Selection

As the analyses were completed and the NGGS early draft came together, an extensive validation process refined the recommendations, programs, and road map that the final document would contain. The final strategy presented five themes with 12 actionable programs and 55 subprograms, which built on ongoing efforts by relevant ministries. In addition to scaling up plans for existing initiatives, several cross-sectoral programs were developed. The implementation road map included indicators for each program and a proposal suggesting which federal and emirate-level institutions should take the lead of the process. Additionally, the strategy laid out options for an overall governance structure, each of which considered how top governance, technical governance, emirate-level engagement, and decision making would occur.

The validation process included pre-validation and bilateral consultation meetings with the ministries that would have to champion the green growth policy. These included the Ministry of Energy, Ministry of Economy, Environmental Agency of Abu Dhabi (EAD), and Dubai Supreme Council of Energy (DSCE), all of which incorporated content into the strategy document. Each of these institutions agreed on who would be the main champions for different recommendations, including developing a federally administered green finance instrument, encouraging full ownership by emirate authorities, creating a green growth governance structure, and doing periodic updates to the strategy.

The final validation workshop happened in January 2014, and there, stakeholders, who would be the ultimate owners of the strategy and action plans, confirmed that the strategy highlighted the right programs and steps. More than 60 stakeholders attended the event, providing recommendations on the next steps for the implementation priorities. The implementation road map within the strategy laid out these priorities and options for overall management structure, but it did not go as far as actually establishing the mechanisms to implement and monitor beyond what ministries were already doing. Ministries committed to meet and exceed the goal of 2.4 percent of GDP going toward NGGS activities. State finance, though, remained a sensitive area, so GGGI had limited opportunity to interact with government financial planning authorities. The strategy went to the UAE Cabinet Office in June 2014 and became official in January 2015.

Lessons Learned

- Validation can take time and needs to be an ongoing, step-by-step dialogue, particularly with partners whose buy-in is needed for implementation.
- Financial analysis may focus on an optimal public investment share when full government financing is provided for green growth.
- If financial planning is contained within government systems, then mechanisms may need to be created for tracking and understanding government investment levels.
- Strategy road maps are important and will lead to the process of laying out specific commitments from stakeholders.

Implementation

In June 2015, UAE established the Emirates Green Development Council, with an interim secretariat hosted within the Ministry of Environment and Water. Backed by a ministerial decree, the council comprises officials from relevant federal and emirate entities: the undersecretary of the Ministry of Energy; the undersecretary of the Ministry of Public **Works**; the assistant undersecretary for resources and budget of the Ministry of Finance; the assistant undersecretary for industrial affairs of the Ministry of Economy; a director of the Ministry of Foreign Affairs; the secretary-general of EAD; and the secretary-general of DSCE. Senior representatives from executive councils and environment authorities from northern emirates has also joined the council.

The council has subcommittees that focus on the five strategic directions of NGGS: the National Committee for Knowledge-Based Economy, National Committee for Development and Quality of Life, National Committee for Environmental Sustainability, National Committee for Clean Energy and Adaptation to Climate Change, and National Committee for Green Life. Each subcommittee sets out detailed work programs and leads the implementation of the 12 policy initiatives under those strategic directions, while the council monitors and reviews the overall implementation progress. GGGI has been providing technical advice on the council's operational modality and options.

Supported by capable technical teams, the subcommittee system can effectively coordinate policy and programmatic implementation, but it still has limitation in tracking impacts on green public investment in a comprehensive fashion because of the federal system's multilayered budgetary process—the Cabinet and Ministry of Finance have primary budgetary authority at the federal level, while each ministry and emirate authority can derive its own institutional resources from state-owned enterprises and funds.

The latest government reform in February 2016 gave birth to the Ministry of Climate Change and Environment, bringing together climate and green growth concerns across the government in one agency. With its mandate, MoCCAE, which ultimately replaced MoEW, can more effectively undertake climate and green growth actions with consolidated resources; its overall programmatic and budgetary process is expected to be further streamlined. The Green Development Council, meanwhile, takes charge of the national GHG inventory and international representation of UAE's INDC. Amid these reforms, the government has requested GGGI to provide a conceptual framework to align climate elements and green growth and support functional integration at the ministerial level.

During the implementation phase when the government has predominant ownership of the process, GGGI has proposed a business model focusing on key institutional mechanisms that can be enablers of other implementation actions: (1) a national data system and GHG inventory; (2) a green help desk ("G-Support") as a consolidated window of service for technical advice, knowledge product dissemination, and policy and investment project development; (3) systematic capacity building to contribute to generating a green workforce; and (4) a monitoring and reviewing scheme for green growth implementation. Another key area where GGGI could add value will be supporting UAE's

representation in global climate and environment conventions such as UNFCCC and Montreal protocols, by providing progress assessment on the implementation of domestic commitments to global accords (e.g. INDC).

Groundwork has been laid for these areas, but GGGI has made most progress in expanding capacity-building programs, particularly for the youth sector, to proactively respond to the country's human capital gap. In 2015, GGGI established a systemic, regularized youth green growth program jointly with key ministries and all national higher education institutes. A first in the region, the program deeply engages the youth and has started to produce a cadre of GGGI-trained youth leaders. A 22-year-old minister of state, who was appointed to oversee youth affairs, declared that GGGI's role in the youth capacity development will continue to grow in the coming years.

Lessons Learned

- Insight into planning and budgeting is needed to understand how a strategy is being implemented.
- Decentralized government structures need a coordination and monitoring body in order to oversee and manage implementation either by providing a mandate to an existing body or instituting a new authority.
- The role of GGGI needs to be strategized in a country with full capacity to fund and implement programs.

Table 9: Summary Table of UAE's Green Growth Strategy, Tools, and Analysis, and Lessons through the GGGI Value Chain

	Diagnosis 2010–2012	Assessment 2012–2013	Planning 2013–2014	Implementation 2015–
Strategy	High-level mandate Permanent staffing Green growth business plan and pilot program Knowledge-sharing workshops	Cross-sectoral Green Growth Team Outside technical consultancies Technical workshops	Validation meetings Commitments for implementation road map Validation workshop Cabinet approval	Green Development Council Ongoing government programming GGGI consultancy to monitor progress
Analysis/ Tools	Strategic framework, including sector selection and priority areas GGGI project management plan (goals, timeline, and strategy road map) Stakeholder mapping Knowledge-sharing workshops	Technical task force workshops Situation analysis Global benchmarking Macroeconomic assessment GHG abatement cost analysis Green growth data analysis and repository	Bilateral and multilateral consultations through workshops and meetings Negotiating implementation road map Public investment analysis	Top governance structure to push forward implementation Capacity support and training programs are still being defined

	Diagnosis 2010–2012	Assessment 2012–2013	Planning 2013–2014	Implementation 2015–
Lessons	Business plan can build support and define operations Pilot projects need to be integrated into long-term plans for lasting impact Permanently based staff is crucial for gaining buy-in Ongoing stakeholder engagement is needed	Up-to-date, locally sourced data and getting validation on data inputs are critical Transparency and rigorousness around data foundation, analytic assumptions, and methodologies are key to getting stakeholder trust and can promote ownership Cross-sectoral, technical expert engagement is required to develop technically grounded, viable policy proposals Clear cost-benefit analyses, both in monetary and nonmonetary terms, have to be in place	Validation needs to be an ongoing dialogue Roles and ownership needs to be defined System for tracking investment is needed Strategy road maps can give general direction, leading to a process that lays out specific commitments from stakeholders	Insight into planning and budgeting may be needed to understand how a strategy is being implemented Coordinating unit needs to work across sectors and levels GGGI implementation support model needs to be developed for countries with full capacity to fund and implement programs

Country Comparison

The following analysis identifies areas where Ethiopia and UAE differ and explores how these differences have influenced the choices GGGI and both countries have made in the green growth planning process.

Institutional Needs

Both countries have ended up with a ministerial-level committee to drive strategy development. Ethiopia had to create CRGE units and a new ministry in order to effectively manage green growth initiatives. UAE may have to go in this direction as the GGGI team figures out how to effectively manage and track progress toward achieving the NGGS. For the time being, though, MoCCAE's mandate and the Green Development Council's structure prove flexible enough to manage the strategy process.

Capacity Support Needs

UAE and Ethiopia both have a large focus on capacity support but would move different routes to obtain this. Ethiopia has relied on embedded advisors who have worked side by side with country counterparts to ensure knowledge development and program implementation. UAE, meanwhile, has chosen an independent think tank associated with top governance and lead ministry for systematic technical and capacity support at the institutional level, leveraging GGGI's global experience.

Stakeholder Landscape (Nongovernmental)

While Ethiopia has engaged development partners in its green growth planning process, UAE has focused on working with industry partners (energy, transport, and technology development), many of which are state-owned enterprises. In both countries, the private sector has played only a modest role, but pursuing private-public partnerships is high on each country's priority list. The stakeholder landscape has also dictated how implementation would move forward. Donors and NGOs, which are focused on project implementation, have pushed programming forward in Ethiopia.

Income Levels

Income levels may define country needs for financing, capacity, and, to some extent, institutional development. They may also affect the kinds of analysis and programs to home in on. They, however, may not inherently change the GGGI operating model whereby a comprehensive situation analysis determines which sectors and strategic areas to focus on. The stages of development and industrialization may also differ drastically among countries, but the macroeconomic analysis and stakeholder consultation processes would not structurally change to accommodate these differences. For this reason, the GGGI value chain and planning process should remain the same for all countries, even though some tools, analysis, and specific considerations along the value chain could be called out for a particular country.

Table 10: Summary Comparison Table of Ethiopia and UAE

	Ethiopia	UAE	Common Challenges
GGGI Political Mandate and Main Champions	Then Prime Minister Meles Zenawi and Chief Economic Adviser and EDRI Executive Director Newai Gebre-Ab	Then MoFA Assistant Minister Sultan Ahmed Al Jaber (currently minister of state) and then Director Thani Al Zeyoudi (currently minister of climate change and environment), with a general mandate from Prime Minister Sheikh Mohamed Bin Rashid Al Maktoum	How to translate a high-level mandate for green growth into a broad-based program with buy-in across ministries and levels
Inception and Diagnosis Analysis	CRGE vision and green economy strategy outlining GHG abatement scenarios for Ethiopia and identifying programs that could reduce future emissions	Green growth business plan formalizing GGGI's long-term engagement with UAE in the context of green growth planning	Finding the right models to make the case for green growth and establish a country presence
Initial Structure	Ministerial committee chaired by the PM's chief economic advisor and co-led by EPA, outside consultants, and GGGI staff on a 'fly in-fly out' model	Ministry of Foreign Affairs and GGGI on a "fly in-fly out" model	Using consultants versus establishing full country teams, and finding the right government partners with a mandate for strategy development and capacity for cross-sectoral coordination
Strategy Development Structure	Sector-level strategies: GGGI Ethiopia staff led with relevant ministry partners and outside consultants	Steering committee led by MoEW, along with project management office and MoFA, with technical support from GGGI	
Analysis Completed	Abatement cost analysis; CGE modeling; economic transition study; global case studies; stakeholder landscape; sector risk assessment (MoWIE); sectoral multiattribute analysis (MoA/MEF); INDC	Situation analysis; global benchmarking study; abatement cost analysis toolkit; macroeconomic analysis model; data repository	Balancing outside technical support with local ownership
Sector Strategies / Ministries	Finance and economic development; environment and forestry (formerly EPA); agriculture; water, irrigation, and energy	Oil and gas; water and electricity; transport; building; industry; waste; land use and agriculture	Stakeholder coordination and working with partners' institutional capacity

	Ethiopia	UAE	Common Challenges
Key Financial and Program Stakeholders (Not Government)	Development partners (bilateral donors and multinational organizations)	National budgets; state-owned enterprises	Ethiopia: creating structures that development partners could work through; UAE: defining government commitments
Institutional Setup	CRGE Facility in MoFED; CRGE units and GGGI advisors in MoA, MoWIE, MoFED, MEF, Economic Policy Analysis Unit/ National Planning Commission	Emirates Green Development Council to provide top governance	Creating a model for GGGI capacity support (including the role of embedded advisors in Ethiopia) and local, long-term management
Programs Implemented	22 FTI programs; ongoing advisor capacity support; NCDP	12 policy programs and 55 policies rolling out from NGGS; ongoing capacity-building and knowledge-sharing workshops	Selecting programs in alignment with ongoing initiatives and validating programs with partners
Implementation Structure, Including GGGI's Role	CRGE units in MEF, MoFED, MoA and MoWIE to oversee and track FTIs and other CRGE-related programs supported by advisors; ongoing analysis, planning, and capacity development programs directly implemented	Ministry programming with ongoing GGGI technical and capacity development support in prioritized programs; deep engagement in institutional setup and defining organizational mandates and programs; capacity development program directly implemented with GGGI office support	Monitoring program implementation in a meaningful way which can be incorporated back into government planning cycles

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