



ARTIFICIAL INTELLIGENCE INITIATIVE

Global Green Growth Institute



ABOUT THE GLOBAL GREEN GROWTH INSTITUTE (GGGI)

The Global Green Growth Institute (GGGI) was founded as a treaty-based international, inter-governmental organization in 2012 at the United Nations Conference on Sustainable Development. GGGI supports its Member States in transitioning their economies toward a green growth model that simultaneously achieves poverty reduction, social inclusion, environmental sustainability, and economic growth. With 51 Member States and 29 Partner countries and regional integration organizations in the process of accession, GGGI delivers programs and projects in over 51 countries. These initiatives encompass developing innovative green growth solutions, technical support, capacity building, policy planning & implementation, and assistance in building a pipeline of bankable green investment projects, project financing, investments, and knowledge sharing. GGGI's work contributes to its Member States' efforts to fulfill the Sustainable Development Goals and the Nationally Determined Contributions to the Paris Agreement.



GGGI ranked 21st among the Top 30 SAIL (Super AI Leader) Awardees in 2024

GGGI AND SUSTAINABLE AI

A trusted advisor and implementation partner to its Member States and partners, the Global Green Growth Institute (GGGI) is uniquely positioned to convene innovative partnerships with government, private sectors, academia and stakeholders to help transfer Sustainable AI solutions for the green transition of our Members and Partners.

GGGI seeks to develop partnerships with private sectors, academia and other stakeholders to bring the best available and most appropriate innovations to its Members and Partners, helping structure and raise funding for projects using AI for green growth and climate action.

GGGI will leverage its position as a convener to bridge the gap between governments, and AI solution developers, including private sector innovators, technology providers, and research institutions.

OUR COLLECTIVE JOURNEY

While Artificial Intelligence (AI) has emerged as a powerful enabler of sustainable development, offering innovative solutions to accelerate climate action and green growth, the environmental footprint of AI itself is growing and expected to increase. The widespread deployment of AI also brings challenges, including data and digital infrastructure access, and governance risks.

GGGI has taken two foundational public commitments

1

At COP29, GGGI signed the COP29 Declaration of Green Digital Action: The COP29 Declaration on Green Digital Action commits governments and stakeholders to maximize digital technologies' potential for climate action while managing their environmental impact. GGGI is a Green Digital Action Partner.

2

At the 2025 AI Action Summit, GGGI became a supporter of the Coalition for Sustainable AI: The Coalition for Sustainable AI's declaration commits members to leveraging AI for environmental and climate goals while addressing AI's own growing ecological footprint.



© GGGI. GGGI's participation in the AI for Innovative Impact Award session, 2024.

Deploying AI for Green Growth and Climate Action

Given the rapid evolution of AI and the need to scale climate solutions effectively, GGGI focuses its AI initiatives on applications within mature sectors where:

Data is available, providing a foundation for high-impact AI applications.

AI research already exists and has demonstrated potential for success or AI applications have already been trialed successfully, indicating readiness for scaling.

The potential for rapid deployment and both short and long-term positive environmental impact is high.

Specifically, GGGI is:

Facilitate the piloting and transfer of AI solutions for green growth and climate by adapting existing technologies and tools to Member countries' needs.

Support governments in structuring AI-based projects to ensure scalability, effectiveness, and alignment with climate goals.

Support attracting finance from climate funds, multilateral donors, philanthropies and private sector investors to scale AI deployment for green growth and climate action in key sectors.

Enabling Sustainable and Accessible AI

GGGI supports the greening and climate proofing of the new demand for digital infrastructure, supporting governments in crafting strategies, policies and standards for green digital infrastructure, and mobilizing green and climate finance for green digital infrastructure projects.

HIGHLIGHTED PROJECTS

AI-Driven Green Growth Simulation (AI-GGSim) for Gender and Social-Inclusive Policy in Africa

PROJECT PERIOD
September 2024 - December 2025

PROGRAMMATIC SOLUTIONS
Climate Action

Green Growth Simulation (GGSim) Tool, which GGGI started to develop in 2020, is a multi-sectoral simulation and decision-support tool designed to help policymakers assess the SDG co-benefits of climate policies, including LT-LEDS, NDCs, and NAPs. This project, which is the first multi-country application of the AI-GGSim, focuses on gender equality and social inclusion (GESI) co-benefits and uses the IPBES Nature Futures Framework (NFF) scenarios. Using policy levers, the AI-GGSim interactive dashboard will allow policymakers, researchers, and practitioners to simulate the impacts of climate policies on relevant SDG and GESI indicators.

The AI-GGSim, developed in 2022 to assess GESI co-benefits, received the Innovative for Impact Use Case Award during the 2024 AI for Good Global Summit in Geneva and ranked 21st among the Top 30 SAIL (Super AI Leader) Awardees during the 2024 World Artificial Intelligence Conference in Shanghai.

Deep Learning-Based Nowcasting for Extreme Weather Events

PROJECT PERIOD
September 2024 - December 2025

PROGRAMMATIC SOLUTIONS
Climate Action

In collaboration with INAMHI, Ecuador's National Institute of Meteorology and Hydrology, GGGI is piloting an AI-based extreme weather nowcasting system using GOES satellite data to supplement the country's early warning and disaster readiness capabilities. The project aims to support the public authorities and emergency responders in Quito and Guayaquil with localized forecasts.

AI-powered Seagrass Mapping for Blue Carbon Monitoring

PROJECT PERIOD
September 2024 – December 2025

PROGRAMMATIC SOLUTIONS
Climate Action

Indonesia holds the world's second largest seagrass ecosystem, with immense potential for blue carbon sequestration. Yet, accurate and scalable monitoring remains a major gap. To address this, GGGI, with Indonesia's Ministry of Marine Affairs and Fisheries and Spatial Informatics Group, is piloting a machine learning-powered mapping project in Bali Province to digitally detect and assess the health of seagrass beds using remote sensing data. This digital monitoring approach represents a time and cost-effective alternative to traditional underwater surveys. It supports national policy goals including Indonesia's One Map Policy and NDC commitments related to marine ecosystem protection.

ANN-Based Predictive Modeling for Climate-Resilient Tea Production

PROJECT PERIOD
September 2024 – December 2025

PROGRAMMATIC SOLUTIONS
Climate Action,
Climate Resilient Agriculture

This pilot introduces AI-powered predictive modeling to improve productivity, profitability, and climate resilience in Sri Lanka's tea industry, an essential economic sector employing over one million people. The project focuses on using deep learning model to generate short- and medium-term forecasts of tea yields based on a range of agronomic and climatic factors.

The pilot is being developed in collaboration with Green Fields Bio Plantations' and researchers from Sabaragamuwa University. The outputs of this project will inform decision-making at the plantation level, while also supporting investment cases for scaling up agroforestry across the industry.

KEY PUBLICATIONS



Green Growth Simulation Tool Phase 1 – Concept, Methods and Applications, GGGI Technical Report No. 17



Scan to visit GGGI Flagship Publications



Green Growth Simulation Tool Phase 2 – Scenario Analysis of SDG Co-Benefits from Climate Actions in LT-LEDS and NAPs, GGGI Technical Report No. 33



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Network science and explainable AI-based life cycle management of sustainability models

<https://journals.plos.org/plosone/article/authors?id=10.1371/journal.pone.0300531>

IMPLEMENTATION PARTNERS

- » University of Pannonia in Hungary
- » The International Telecommunication Union (ITU)
- » The IPBES Task Force and NFF Community of Practice experts
- » Spatial Informatics Group
- » Indonesian Ministry of Marine Affairs and Fisheries
- » Instituto Nacional de Meteorología e Hidrología
- » GREENFIELD BIO PLANTATIONS PVT LTD
- » GEO INFO BOX, Sabaragamuwa university of Sri Lanka



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Global Green Growth Institute

GGGI Headquarters
19F Jeongdong Building, 21-15 Jeongdong-gil, Jung-gu, Seoul, Republic of Korea 04518
info-ai.gggi@gggi.org