# Green Deals: Greening COVID-19 Recovery & Achieving Net-Zero 2050

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# In 2019 Climate Change became widely accepted as the defining threat of our time

Glasgow COP26 planned for 2020: the moment of truth for the Paris Agreement as countries submit their new Nationally Determined Contributions – they need to be more solid and more ambitious



# The Sustainability Crisis:



Climate change, plastic pollution, species extinction, deforestation, air pollution, soil degradation, water scarcity......

- Only 9% of all plastic waste ever produced has been recycled.
   About 12% has been incinerated, while the rest 79% has accumulated in landfills, dumps or the natural environment.
- 10 rivers alone carry more than
   90% of the plastic waste that ends up in the oceans



Great Pacific Garbage Patch



# Then COVID19happened- what has changed?

- COVID-19 has changed our lives more rapidly than anyone could imagine.
- For many it is a sign that our old life was not sustainable.
- Can we green the COVID recovery?
- How will the economic crisis affect sustainable development?
- Can we go back to our old lives?
- Can there be a Green New Deal?



# COVID and Economic Crisis

- Massive job losses everywhere
- For Caribbean, travel and tourism down 80-90%
- Stimulus bills massively boost government debt and are unsustainable & unaffordable for many
- End of globalization?
- But renewable energy doing much better than coal and electric car sales remarkably resilient
- Green Recovery focus: Green Jobs!









In this report, **GGGI** explores the challenges and opportunities posed by the **COVID-19** pandemic, the links between health and climate crises, and the lessons we have learned from past disasters to **build back better**.

**July 2020** 



COVID-19 recovery: green jobs in renewable energy and energy efficiency projects outnumber brown jobs in fossil fuel projects by factor of 2-5



Innovative Sustainable Development: The Quality of Economic Growth Really Matters

## Clear Need for "Green Growth"

... a development approach that seeks to deliver economic growth that is <u>both</u> environmentally sustainable and socially inclusive.

The green growth model **seeks opportunities for economic growth** that are:

- low-carbon and climate resilient
- prevent or remediate pollution
- maintain health natural ecosystems
- create green jobs
- reduce poverty
- enhance inclusion





GGGI at a Glance

- Intergovernmental Organization
- Established in 2012
   Headquartered in
   Seoul, Republic of
   Korea, GGGI has 38
   Members
- Including OECS since 2019
- OECS and GGGI
   partner on:

   (1) enhanced climate
   action (NDCP-CAEP); (2)
   GCF readiness; (3) green
   entrepreneurship support





# Results at a Glance: 2019 Annual Report



CUMULATIVE GREEN INVESTMENTS MOBILIZED IN 2015-2019

2019 = US\$360M

21 GREEN GROWTH POLICIES

ADOPTED BY
9 GOVERNMENTS
WITH GGGI'S SUPPORT



#### JOINED GGGI

Angola, Burkina Faso, Ecuador, Sri Lanka, Uganda, Uzbekistan, Organisation of Eastern Caribbean States (OECS)



AIM TO IMPROVE THE ENABLING ENVIRONMENT FOR GREEN GROWTH

131 PROJECTS REPORTED

IN 2019 187% INCREASE FROM 2018 (70) 69 COMPLETED ADVISORY OUTPUTS

THAT INFORM
DEVELOPMENT OF
GREEN GROWTH POLICIES



50 COMPLETED ADVISORY OUTPUTS

THAT INFORMED DECISIONS
ON GREEN GROWTH
INVESTMENTS

37

 PROJECTS
BROKERED TO STANDARD TO STANDARD

247 CAPACITY BUILDING

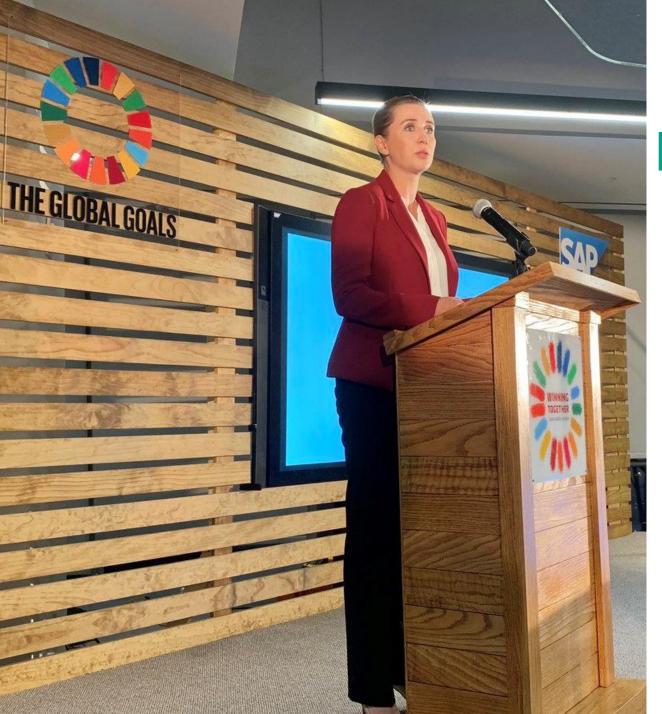
# **Green Employment**



#### **Country examples**

- For Indonesia and Mexico GGGI assessed that millions of green jobs will result from implementing RE targets in country NDCs.
- In Fiji, a recent GGGI study estimated that green growth could generate 2.1 and 3.2 times more jobs by 2030 and 2050, respectively—mainly in electricity, transport, and forestry—compared to BAU.
- In Uganda, according to EPRC/GGGI/NCE (2016), the green growth transition could generate 1.3 million jobs by 2020, rising to around 4 million in 2040, compared to BAU. Sustainable agriculture offers the highest potential.
- •In Cambodia, GGGI analysis estimated that greening key industrial sectors of Cambodia—food processing, bricks, garments, and electronics manufacturing would provide an additional 512,000 jobs relative to BAU by 2030.







- At UNGA 77 countries committed to NetZero2050
- Danish Prime Minister Mette
   Frederiksen pledged to work to achieve
   Denmark's ambitious 70% cut in CO2
   emissions by 2030.
- Danish Pensionfunds invested \$15Bn in renewable energy to date and pledged to invest another \$50Bn by 2030

# **Enabling Sustainable Development through government leadership & planning**

Fiji: Fiji Continues to Lead International Climate Action with Launch of Comprehensive Low Emissions Development Strategy



Fiji has adopted a detailed development plan that could see the Pacific Island country soak up more carbon than it emits by 2050. Fiji's Low Emissions Development Strategy was launched at the UN climate conference held in December 2018 in Katowice, Poland.



Vanuatu: Financing 100% Renewable Energy in Vanuatu



As Vanuatu's government looks to improve their electricity supply while following a path of sustainable, environmentally-friendly growth, GGGI is playing a key role in securing investment for the Pacific Island country to achieve its development goals.

GGGI, which developed parts of the National Energy Road Map, covering energy efficiency and green growth — has helped create the National Green Energy Fund to mobilize finance for investment.

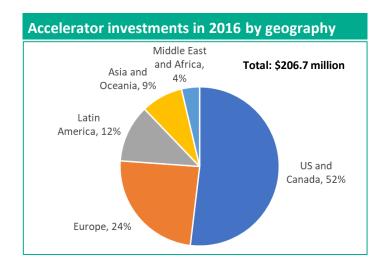
# Private Sector Entrepreneurship is critical for green job creation through sustainable development



- Need for green innovation in developing countries is getting more urgent—most future growth in emissions is projected to be from developing countries
- Investment in green sectors in developing countries is expected to reach \$6.4 trillion over the coming decade

- Small- and medium-sized enterprises are often the dominant form of economic activity in developing countries and are the main provider of jobs
- Startup ventures are most often the channel through which new and disruptive technologies reach the market

#### Current entrepreneurship programs like accelerators tend to focus on developed countries and technology markets



#### % of accelerators with an interest in the following markets:



Source: Gust Global Accelerator Report 2016

**Challenge**: Entrepreneurs in developing countries with innovative green growth business ideas often lack access to technical training, networks, mentorship, and seed capital to effectively grow and scale up their businesses





# Energy Efficiency: Green Buildings

- Buildings are responsible for an estimated 32% of global energy use and almost 30% of total GHG emissions.
- Heating and cooling energy requirements can be lowered by 50-90% through retrofitted buildings.
- New, energy-efficient buildings, in many cases, use almost zero energy for heating and cooling.

### NATURAL CLIMATE SOLUTIONS



## **TOP 10 MITIGATION PATHWAYS' WITH CO-BENEFITS**

Natural Climate Solutions have the same impact on emissions as taking millions of cars off the road

	REFORESTATION	650M
AVOIDED PEATLAND IMPACTS  CROPLAND NUTRIENT MANAGEMENT  TREES IN CROPLAND  PEATLAND RESTORATION  CONSERVATION AGRICULTURE  RESTORATION OF COASTAL WETLANDS  A 143M  - 136M  - 94M  - 84M  - 80M  - 59M	AVOIDED FOREST CONVERSION	620M
TREES IN CROPLAND  PEATLAND RESTORATION  CONSERVATION AGRICULTURE  RESTORATION OF COASTAL WETLANDS  TREES IN CROPLAND  PEATLAND RESTORATION  FROM  FRO	NATURAL FOREST MANAGEMENT	- 189M
TREES IN CROPLAND  PEATLAND RESTORATION  CONSERVATION AGRICULTURE  RESTORATION OF COASTAL WETLANDS  TREES IN CROPLAND	AVOIDED PEATLAND IMPACTS	→ 143M
PEATLAND RESTORATION  CONSERVATION AGRICULTURE  RESTORATION OF COASTAL WETLANDS  → 84M  → 80M  → 59M	CROPLAND NUTRIENT MANAGEMENT	→ → 136M
CONSERVATION AGRICULTURE  RESTORATION OF COASTAL WETLANDS  FOR SOM  59M	TREES IN CROPLAND	→ 94M
RESTORATION OF COASTAL WETLANDS 59M	PEATLAND RESTORATION	- 84M
	CONSERVATION AGRICULTURE	<b>6</b> ← 80M
	RESTORATION OF COASTAL WETLANDS	59M
AVOIDED COASTAL WETLAND IMPACTS — 43M	AVOIDED COASTAL WETLAND IMPACTS	€ - 43M

Global Mitigation Potential: Approximate Number of Cars Removed Each Year in Millions



## Investment in Solar Freezers Project, Vanuatu



#### **Investment Opportunity**

- Solar-powered freezer systems installed at ten rural tourism bungalows on five islands in Vanuatu
- Project Partners: GGGI, Vanuatu Government, Vanuatu Skills Partnership
- Improve electricity access, reliability, and affordability for small tourism operators
- Increase and improve income streams for tourism operators
- Contribute to Vanuatu's Nationally Determined Contribution and updated National Energy Road Map objectives to increase the use of renewables in all sectors and achieve 100% renewable electricity production by 2030





- Improved productivity
- Increased revenues
- Easier work for men and women
- Less travel time required to buy food
- New income streams: selling cold drinks and ice pops, renting freezer space
- Increase knowledge on PV systems and on safe food handling
- Increased business for PV suppliers
- Freezer systems provided free of charge under a grant agreement with the Vanuatu Government
- Owners required to save money each month in a special savings account used for maintenance and repairs
- Estimated average savings per bungalow of USD \$100 per month



### **PNG: Green Telecom Towers**

#### Investment Overview (Readiness : Origination Phase)

- The proposed investment aims at funding the Energy Service Companies (ESCO) in PNG towards providing simple, efficient, and reliable power for telecom networks by replacing diesel fuel with solar hybrid system.
- A total of 100 towers operated by the major telecom operators in PNG is being targeted in the current phase. The total investment required is approx. US\$ 20 million.



- Solar hybrid system addresses the two main challenges faced by the telecom tower companies in PNG
  - High operating expenditure: Energy costs account for ~30 to 40% of total operational expenditure for a telecom tower company.
  - Diesel pilferage losses ~20% have been observed in the industry which further increases the energy costs
- Pilot project in PNG has demonstrated the following benefits
  - Monitoring of the project during the first year of operation has revealed an operational cost saving of over \$40,000 and a 72% reduction in diesel fuel consumption.
  - $_{\odot}\;$  Reduced maintenance requirements and increased service intervals.



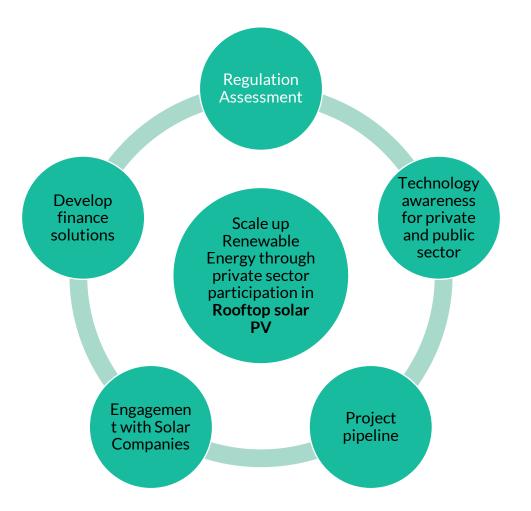


Project Characteristics	
Location	100 Telcom towers in urban and semi-urban areas of PNG
Asset ownership	ESCO
Cost of Solar Hybrid system	US\$ 150 - 200k per unit
Capital Structure	TBD
Contract Period	10 - 15 years
Funding	ESCO
O&M	ESCO
Risk	Risk sharing between Tower company and ESCO
Expected Payback	7 – 8 years

# Guyana, Urban Sector Solar Energy Program 2018



 Barriers for Distributed Generation were low technology awareness, lack of finance and inappropriate regulation.







# of companies pipeline	37		
Total Electrical demand	86,000 MWh/yea		
GPL demand	21,000 MWh/yea		
Self-Generated demand	65,000 MWh/yea		
PV power	14 MWp		
PV energy auto consumed	18,000 MWh/yea		
PV coverage	22 %		
Emission avoided	16,500 tCO2eq /year		
Total investment	19,000,000 USD		
Avg. Internal Rate of Return	22 %		
Avg. Payback period	4.5 years		

## Jordan: Amman Bus Rapid Transit (BRT)

#### **Project Overview**

The Bus Rapid Transit (BRT) is the first public transport project that includes the development of infrastructure and transport operating system in Amman.

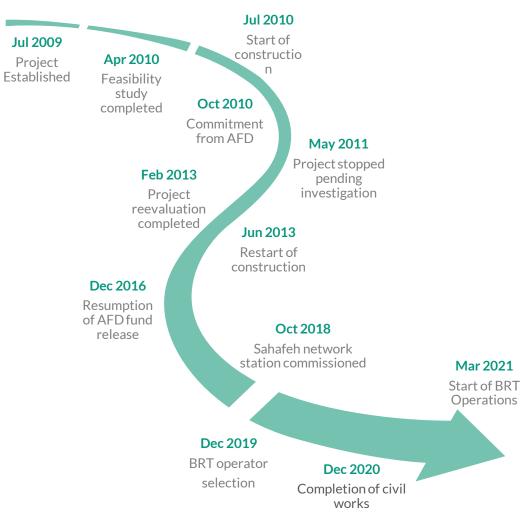




- 32 km dedicated bus lanes separated from other regular traffic with lane barriers serving, sidewalks, mixed-traffic lanes and non-motorized lanes.
- As per GGGI proposal, a critical section of the BRT system is expected to run on a fully electric bus system.
- 60 modern buses with capacity of 120 passengers per bus.
- High quality stations with park-n-ride facilities
- Integrated fare collection system



#### **Project Timeline**



## Green Infrastructure: Rwanda's Green New Airport



**Rwanda:** Green Certification of the New Bugesera International Airport



The Government of Rwanda (GoR) through the Ministry of Infrastructure (MININFRA) and GGGI have a standing Memorandum of Understanding (MoU) to advocate sustainability and provide support to the enable a sustainable built environment in Rwanda. GGGI has been supporting GoR in green cities development focusing in Kigali and the six secondary cities.

Along these lines, GGGI in collaboration with MINIFRA embarked on Green Certification of the New Bugesera International Airport. This project is looking into several measures to demonstrate resource efficiency and the overall sustainability of the airport infrastructure when completed.



# GGGI | Green Deal for emerging and developing economies

A GGGI recommended Green Deal for emerging and developing economies - generating a total of jobs ranging from 223,500 in emerging economies to 258,600 in developing economies



**Building Energy Efficiency renovations** & retrofits 14,400 jobs



Natural capital investment 187,500 jobs



**Green technology R&D** for emerging economies 2,400 jobs



**Green physical &** digital infrastructure 16,800 jobs



**Education and** training 2.400 iobs



Rural support schemes for developing countries 37,500 jobs



## **Phase-out of fossil fuel subsidies**



Power sector reform

**Fuel** standards





Green fiscal policies



Green building codes



Tipping fees for waste management



Cancellation of restrictions on rooftop solar



Green public procurement



Measurement, Reporting, & Verification (MRV)



# **Green Deal Policies**

Based on GGGI's experience supporting its member governments in their green transformation, there are several key policy areas that in many countries need reform, and that have a critical impact on the green transition. These policy areas are all worth considering as accompanying measures for a Green Deal.

	GGGI's recommended Green Deal for emerging and developing economies – generating a total of jobs ranging from 223,500 in emerging economies to 258,600 in developing economies			Cost Share in %
	Green physical & digital infrastructure 16,800 jobs	<ul> <li>Build solar and wind energy assets</li> <li>Energy storage, including green hydrogen</li> <li>Grid modernization</li> <li>Digital network and AI infrastructure</li> <li>Sustainable mobility</li> <li>Green urban infra - bike lanes, waste recycling</li> </ul>	350	30%
4	Building Energy Efficiency renovations & retrofits 14,400 jobs	<ul> <li>Insulation</li> <li>Energy-efficient heating and cooling</li> <li>Domestic energy storage</li> </ul>	300	25%
888	Education and training 2,400 jobs	<ul> <li>Green job training</li> <li>Online education systems</li> <li>Online economy systems for the private sector</li> </ul>	50	5%
(\$)	Natural capital investment 187,500 jobs	<ul> <li>Restoration carbon-rich habitats (forests, peatlands, mangroves)</li> <li>Climate-smart agriculture</li> </ul>	250	25%
興	Green technology R&D  2,400 jobs or Rural support schemes 37,500 jobs	<ul> <li>Green technology R&amp;D for emerging economies</li> <li>Rural support schemes such as employment-based social assistance programs for developing economies</li> </ul>	50	5%

## **GGGI-GCF** Joint Collaboration



#### **Enhancing access to** climate finance through readiness support

The Global Green Growth Institute and Green Climate Fund partnership

Enhancing Access to Climate Finance through Rea.

#### **GGGI's Readiness Programme activities**

As a Readiness Delivery Partner, GGGI can support the Readiness Programme implementation through various interventions



#### Private sector mobilization

- · In Mongolia, GGGI's Readiness activities have focused on developing the Mongolia Green Finance Corporation as a market instrument to mobilise private financing to help reach the greenhouse gas (GHG) reduction targets defined in Mongolia's NDC.
- . In Vanuatu, GGGI helped to establish the National Green Energy Fund as a tool for the government to leverage private capital to spur public and private sector investments in renewable energy and energy efficiency.



#### Access to climate finance

- GGGI's Readiness work is helping Burkina Faso, Cambodia. Cote d'Ivoire, Ethiopia, Fiji, Guyana, Indonesia, Jordan, Mexico, Morocco, Mozambique, Myanmar, the Philippines, Uganda, and Vanuatu access climate finance by developing upwards of 70 concept notes to submit to GCF
- · Following the completion of a Readiness Programme initiative in Mongolia, national DAE XacBank submitted a GCF funding proposal for the Mongolia Green Finance Corporation worth USD 20 million.
- . In Thailand, GGGI's Readiness activities have resulted in the development of a green investment plan to reduce GHG emissions and enhance the competitiveness of the food industry - which accounts for about 7.2 per cent of the country's GHG emission in 2017
- . In Rwanda, concept notes for the development of green secondary cities and eco-industrial parks were developed as part of GGGI's Readiness work.

#### USD 19.6 million in GCF approved Readiness funding

- Completed in 7 countries (Guyana, Lao-PDR, Mongolia, Papua New Guinea, Rwanda, Thailand, and Vanuatu)
- In progress in 17 countries (Burkina Faso, Cambodia, Cote d'Ivoire, Ethiopia, Fiji, Indonesia, Jordan, Lao PDR, Mexico. Morocco, Mozambique, Myanmar the Philippines, Rwanda, Sri Lanka, Uganda, and Vanuatu)

roposals submitted for 11 countries gola, Colombia, Dominica, Ethiopia, a, Jordan, Lao PDR, Paraguay, Togo, and Zambial

. In Lao PDR, concept notes have been drawn up which mainstream climate change into urban management and planning - with a focus on investment and infrastructure that improves flood management and utilizes. climate-resilient buildings.

#### Stakeholder engagement & capacity

. In Indonesia, Lao PDR, Mexico, Papua New Guinea, the Philippines, and Uganda, GGGI's Readiness activities are supporting the development and updating of GCF Country Programmes (which help match national climate action plans with GCF climate finance support).



#### Supporting direct access entities

· In Burkina Faso, Cote d'Ivoire, Fiji, Guyana, Indonesia, Jordan, Mexico, Mozambique, Myanmar, the Philippines, Uganda, and Vanuatu, GGGI's Readiness work is helping organisations apply to become GCF's new DAEs.



#### Adaptation planning

- · Readiness will support the preparation of Rwanda's National Adaptation Plan for submission to the UNFCCC and in building flood resilience in Rwanda to produce precise and implementation-ready planning and improve the capacity of the private sector and practitioners to mainstream adaptation and resilience practices into their planning. design and construction.
- . In Sri Lanka, Readiness aims to build the resilience of the most vulnerable sectors and communities to adverse climate effects by strengthening the country's ability to implement its National Adaptation Plan. This will include developing provincial adaptation plans; supporting climate change adaptation mainstreaming into development planning and budgeting; building stakeholder capacities; and supporting the establishment of a climate information system and national adaptation fund.



#### READINESS IN ACTION

#### Supporting green finance in Mongolia

Mongolia lacks the resources to finance its planner transition to a low-carbon and resource-efficient econon, and achieve its NDC target. The financing needed to achieve these goals is estimated to be USD 3.5 billion, or 35 per cent of its GDP. Despite a supportive policy environment, both the Government of Mongolia and the domestic financial ector are unable to deliver finance at scale due to the high cost of capital and a lack of knowledge about green finance and its opportunities. Until recently, Mongolia's existing

ongolia's Ministry of Environment and Tourism (MET) oversees climate policy planning and implementat While acting as GGGI's host Ministry in country and GCF's NDA, it is the focal point of GGGI-GCF collaboration in helping Mongolia enhance its NDC.

This Readiness grant funded by GCF with GCGI action as the Delivery Partner has supported XacBank, a Mongolian private sector direct access entity, develop a climate finance project to submit for GCF Board approval. This project is designed to create the Mongolia Green Finance Corporation (MGFC), a public fund based on a private sector initiative. It aims to provide medium and long-term credit resources, lower cost and set up a risk-sharing facility for participating banks.

The rationale of the MCEC is to disburse resources to financial institutions that support green projects, with an emphasis in the short term on energy efficiency. Preliminary assessment

have identified pressing needs in Mongolia to reduce air pollution from burning wood and raw coal for heating in inefficient cooking stoves in informal settlements surrounding the capital Ulaanbaatar known as gers. During winter, Ulaanbaatar experiences some of the worst air pollution rates in the world. The MGFC is also intended to help finance the thermal retrofitting of housing units and public buildings, and

This Readiness grant has supported three market assessment and the further development of a concept note to establish the MGFC as part of a funding proposal to GCF. GGGI's Readiness work has also helped XacBank submit a successful application to GCF's Project Preparation Facility (PPF), a special financing window of up to USD 1.5 million for each application designed to ease access to GCF resources



The **Green Climate Fund** (GCF) and the **Global Green Growth Institute (GGGI)** have formed a partnership drawing on the strengths of both organisations to bolster developing country capacities to deal with the unprecedented challenge of climate change. This partnership is based on the strategic targeting of funds from GCF's Readiness and Preparatory **Support Programme** (the Readiness Programme).

## Conclusions

- ▶ Innovative Sustainable Development is Green Growth
- ▶ Building Back better Post-COVID-19: Focus on Green Jobs
- Green investments can provide 2-5 times the jobs compared to brown projects
- For Caribbean focus on:
  - Supporting Green Entrepreneurs stimulate innovation in SMEs
  - ▶ Greening Tourism through Renewable Energy and Green Buildings / Infrastructure
  - Greening Transportation: electric mobility buses, cars, motorbikes
- Government leadership: ambitious climate action improved NDCs NetZero2050
- Finding green finance & private sector leverage: partnering with GCF and other green and climate finance sources



## **Thank You**

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