

Sustainable Development Goals and the role of local governments

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Content

- Sustainability Crisis: Climate Crisis, Air Pollution, Plastic Crisis, COVID Pandemic
- Can the COVID-19 Recovery be Green?
- The role of local governments
- GGGI Green Deal Recommendations for Emerging and Developing Economies



The Climate Crisis: heat waves, fires, floods, droughts intensify



2018: Floods in **Kerala** worst in a hundred years
2019: Cyclone Idai destroys **Mozambique**



2018: Republic of **Korea** sets all-time record high temperature amid deadly heat wave
2019: Record heat waves in **Europe**

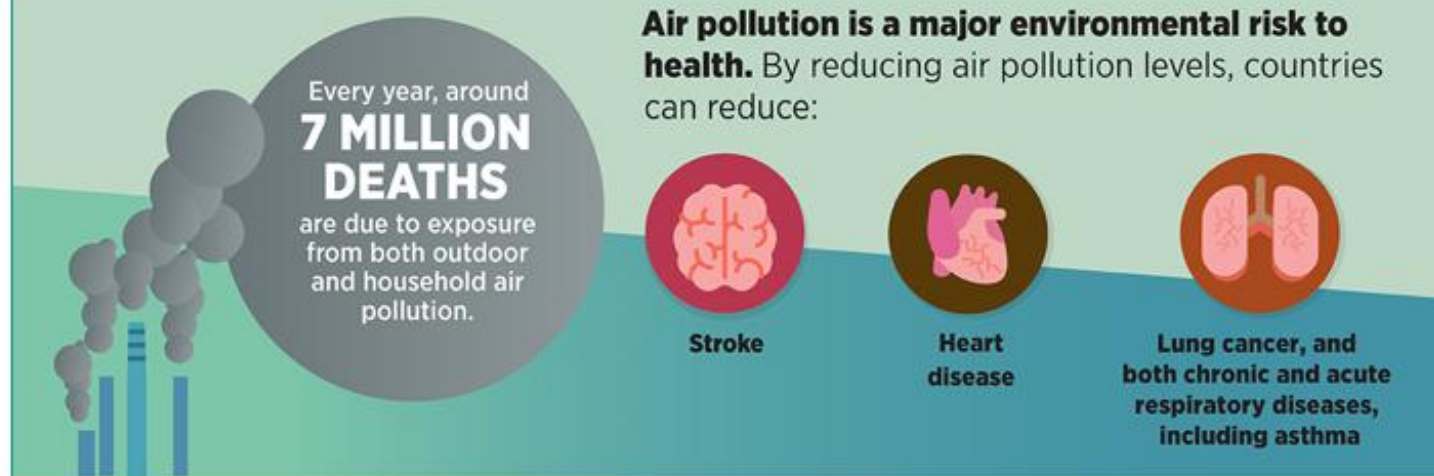


2018-20: Increasingly massive forest fires in **Arctic, Australia, California** and intense droughts affecting millions of people

The Air Pollution Crisis

- Every year, an estimated **7 million people die from illnesses attributable to air pollution**.
- Blue skies are the top priority throughout Asia, from Mongolia to China to Bangkok – but blue skies will also help address the climate crisis.
- Combating climate change and meeting the goals of the Paris Agreement **could save around a million lives a year worldwide by 2050** solely through reductions in air pollution.

AIR POLLUTION – THE SILENT KILLER



REGIONAL ESTIMATES ACCORDING TO WHO REGIONAL GROUPINGS:



CLEAN AIR FOR HEALTH

#AirPollution

The Plastic Crisis in the Oceans

- 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



The COVID19- Crisis- 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.
- Air pollution and obesity are aggravating factors for COVID-19
- Can we green the COVID recovery?
- How will the economic crisis affect green growth?
- Can we go back to our old lives?
- Can there be a Green New Deal?



A high-angle photograph of a person wearing a face mask and pulling a suitcase, walking through a queue of stanchions in a large, brightly lit hall. The floor is tiled, and there are red dots on the floor. The person is walking towards the right side of the frame.

Achieving Green Growth & Climate Action Post COVID-19

GGGI Technical Report No. 13

Can we build back Better ?

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



**EMPLOYMENT
ASSESSMENT OF
RENEWABLE
ENERGY:**

Power sector pathways
compatible with NDCs and
national energy plans

June, 2020

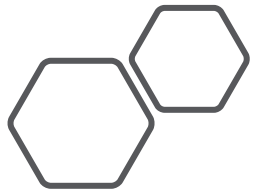
Case studies Mexico, Indonesia, Rwanda



An aerial photograph of a large, winding lake with turquoise water, surrounded by lush green hills and mountains under a blue sky with white clouds. A semi-transparent white box is centered over the lake, containing the title and subtitle text.

The role of local governments

To achieve the Sustainable Development Goals



Sustainable City Plans in Cambodia

- Launch of the **Phnom Penh Sustainable City Plan 2018-2030**, jointly developed with GGGI, to provide an overview of current challenges Phnom Penh faces and commits to a set of objectives in sustainable urban growth





Tackling waste in cities in Cambodia

GGGI supports several cities in Cambodia to deliver **green city solutions projects** in line with Cambodia's Sustainable City Strategic Plan. The new projects in waste management & sanitation aim to benefit inhabitants by improving health conditions & creating new, green jobs.

- GGGI developed a set of recommendations to:
 - Improve waste separation and collection
 - Develop innovative opportunities to scale-up local waste recycling businesses
 - Create better jobs for waste collectors



Udon Thani Municipality, Thailand : E-Waste Recycling Plant



Investment Overview (Readiness : Origination Phase)

- GGGI, in partnership with Udon Thani City Municipality, is working to establish the systematic e-waste management system and scalable material recycling center.
- Capex estimates from the pre-feasibility study for a pilot e-waste treatment plant of 500 kg/day at Udon Thani is US\$ 3 million.
- Preliminary desktop economic analysis of the project suggests that break-even is achieved by processing high grade e-waste of > 100 Tonnes per year.



Implementation Structure

- Project to be implemented under PPP structure (BOOT model) between the government and the project sponsor.
- Standardized plant design based on commercially proven E-Waste treatment process. Useful life is 20 years.
- Favorable long term bulk supply of electronic waste from the respective municipal authorities.
- Capital subsidy from Govt. of Thailand.

Pilot Project - Key Characteristics	
Location	Udon Thai Municipality
Plant Capacity	150 Tonnes per year
E-Waste Composition (Base Case)	TV : 30% Mobile : 40% Laptop : 20% Printer : 10%
Revenue Factor	75% of potential value recovered by recycling
Economic Appraisal (Key Findings)	<ul style="list-style-type: none">• Below a throughput of ~100 tonnes per year, break-even is not reached• Commodity prices have a strong impact on the business performance• Profitable to treat IT equipment whereas a high share of TVs would lower the financial performance.• Printed Circuit Boards (PCB) is a major revenue driver.



GGGI supports Lima, Peru with circular economy for waste management

A large amount of municipal solid waste produced in Peru is organic, **exceeding 19,000 tons per day** statewide. In the Lima city center, approximately 60% of the solid waste is organic, largely coming from households and local businesses.

GGGI supports the Municipality of Lima by building local technical capacities and promoting waste management sustainable practices that directly benefit citizens and reduce organic waste in the city center.

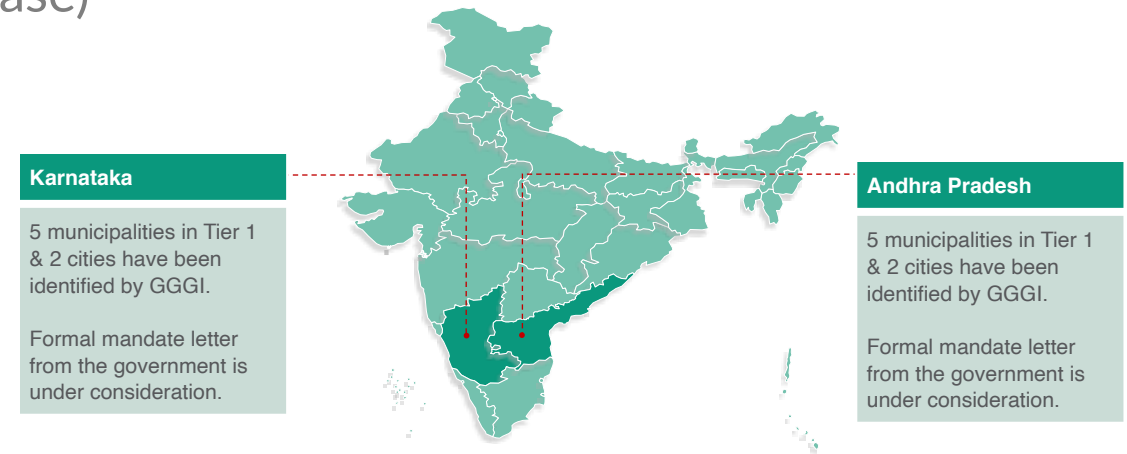
India : Organic Waste to Bio-CNG

Investment Overview (Readiness : Origination Phase)

- The proposed investment aims at establishing high technology bio-methanation facilities in 10 Tier 1 & 2 cities of India, where organic waste from vegetable & fruit market is converted to high grade natural gas.
- The total investment is estimated at US\$ 11 million, of which the sponsor's equity commitment is US\$ 2.6 million. The local financial institutions will provide the remainder of the debt financing required.

Key Investment Highlights

- Project to be implemented under PPP structure (BOOT model) between the government and the project sponsor.
- Standardized plant design based on commercially proven Bio-CNG production process. Useful life is 20 years.
- Favorable long term bulk supply of segregated organic waste from the respective municipal corporation.
- Attractive Bio-CNG off-take policy by the Govt. of India guaranteeing price certainty for first 3 years
- Capital subsidy from Govt. of India – up to 20% of project cost.



Project Characteristics	
Location	10 Municipalities in Tier 1 & 2 cities of the states of Karnataka & Andhra Pradesh
Total Plant Capacity (aggregate)	450 Tonnes per day of Vegetable & Fruit market organic Waste
Bio-CNG : Production (aggregate)	18 Tonnes per Day
Bio-Fertilizer : Production (aggregate)	6 Tonnes / Day
Investment Metrics (US\$ Basis)	
• Project IRR	14.5 %
• Simple Payback	7 years

All figures in US\$ is based on a FX conversion rate of US\$ 1 = INR 70

Key Investment metrics is calculated based on the assumption that the INR depreciates annually against the US\$ at the CPI differential rate of 4% p.a.

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.



Retrofitting residences in Ulaanbaatar



Ulaanbaatar is the **coldest capital city in the world** with temperatures dropping down to -40 Celsius during winter and apartments typically 4-6 Celsius colder than recommended room temperatures.

GGGI is supporting the government of Mongolia to secure a **grant of 18 million euros to retrofit residential building blocks**, which are expected to transform the lives of **over 136,000 residents** and lower GHG emissions.

Nepal's Electric Mobility Plans

Financing electric buses for Sajha Yatayat, public transportation company for Kathmandu metropolitan area

Nepal's new electric buses will help the government fulfill its commitment under the country's Nationally Determined Contribution, which sets targets for air quality and electric vehicle adoption.

A collaborative effort by the Ministry of Forests and Environment, Ministry of Physical Infrastructure and Transport, and GGGI led to the launching of Nepal's first National Action Plan for Electric Mobility—a road map for achieving the NDC targets.



Jordan : Electrifying Amman's Bus Rapid Transit (BRT)

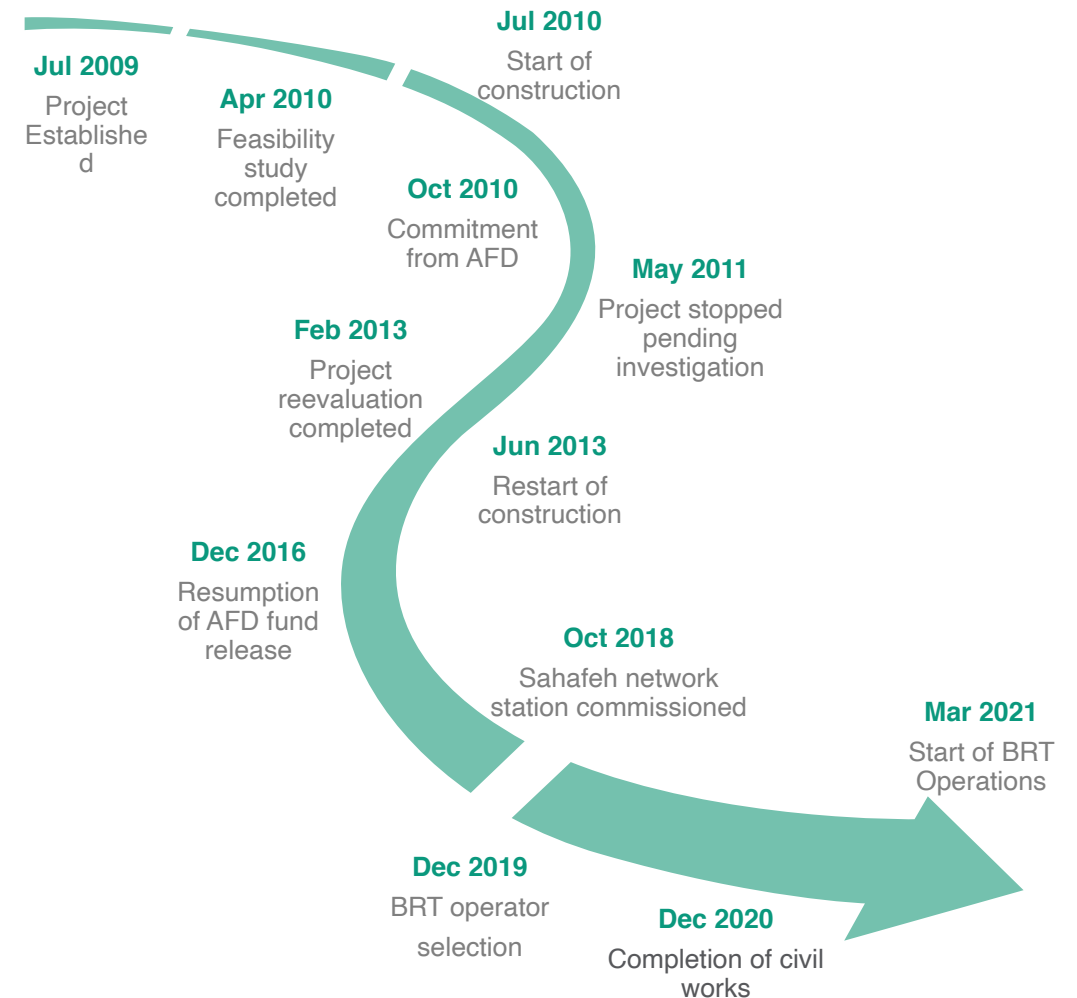
Project Overview

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

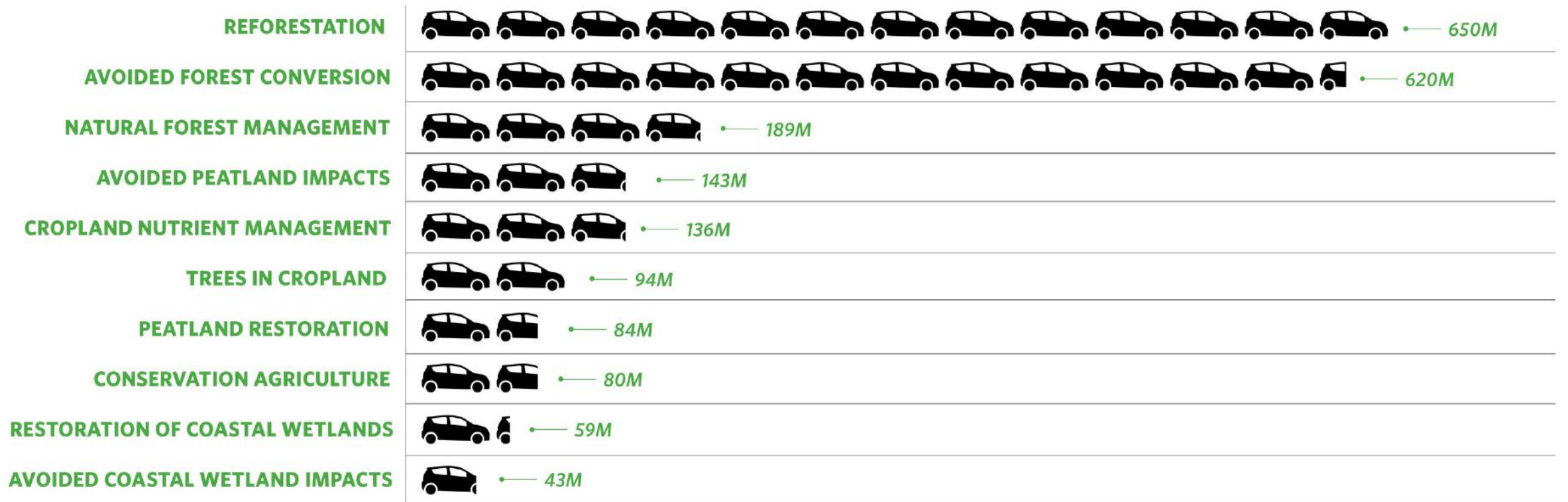
Project Timeline



NATURAL CLIMATE SOLUTIONS

TOP 10 MITIGATION PATHWAYS¹ WITH CO-BENEFITS

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



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

 = 50M cars

¹Cost-Effective

East Kalimantan Province, Indonesia

Investment and Policy Interventions at the subnational level



Performance-based emissions reduction program worth over US\$100 million for East Kalimantan province approved by the FCPF Carbon Fund

Context/Challenges

Severe impacts of 2015 forest fires in Indonesia



Dead or Missing*
24 people



Affected*
60 million people



Burnt Land*
2.61 million ha



Acute Respiratory Tract Infections*
± 600,000 cases



Premature Deaths**
± 100,300
in Indonesia, Malaysia, & Singapore



Economic Losses***
USD\$ 16 billion

- Negative impact of deforestation and peat development on climate change and biodiversity loss, resulted in the extent of fires, haze and flooding.
- Gol aims to restore over 2 million hectares of tropical peatlands in Indonesia over the next five years

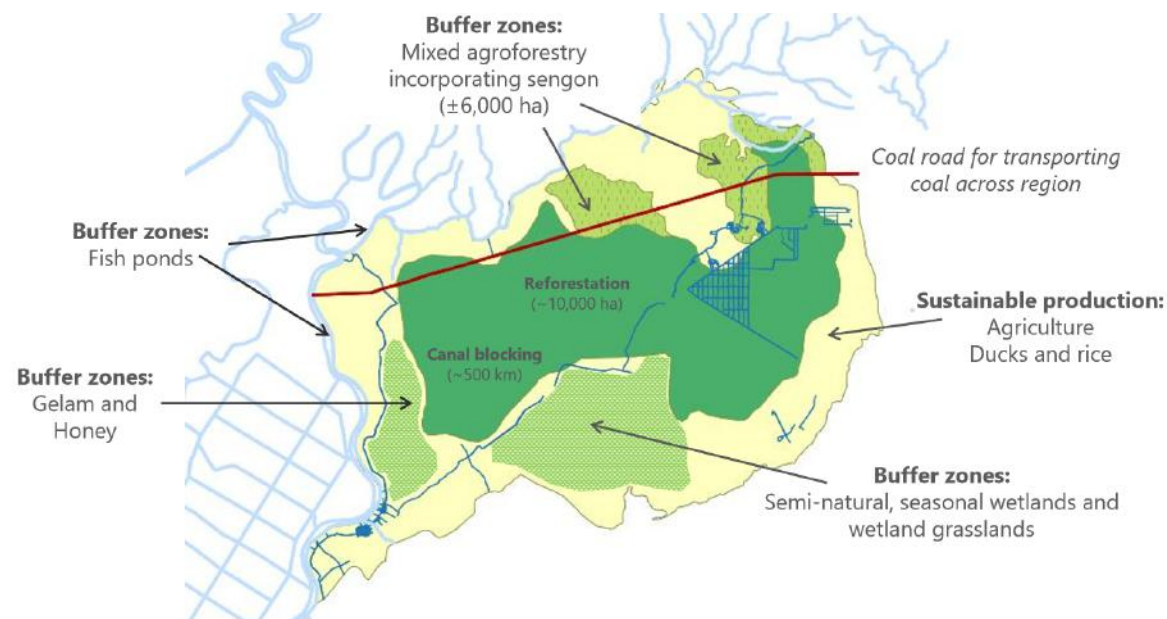
Solution

- An integrated landscape approach by restoring the entire peatland hydrological unit is the most suitable solution for success in reducing forest/peat related fires
- Design public-private investment opportunities and develop business models



Investment and Policy intervention

Conservation, buffer and economic zones based on hydrology, restoration and community livelihoods



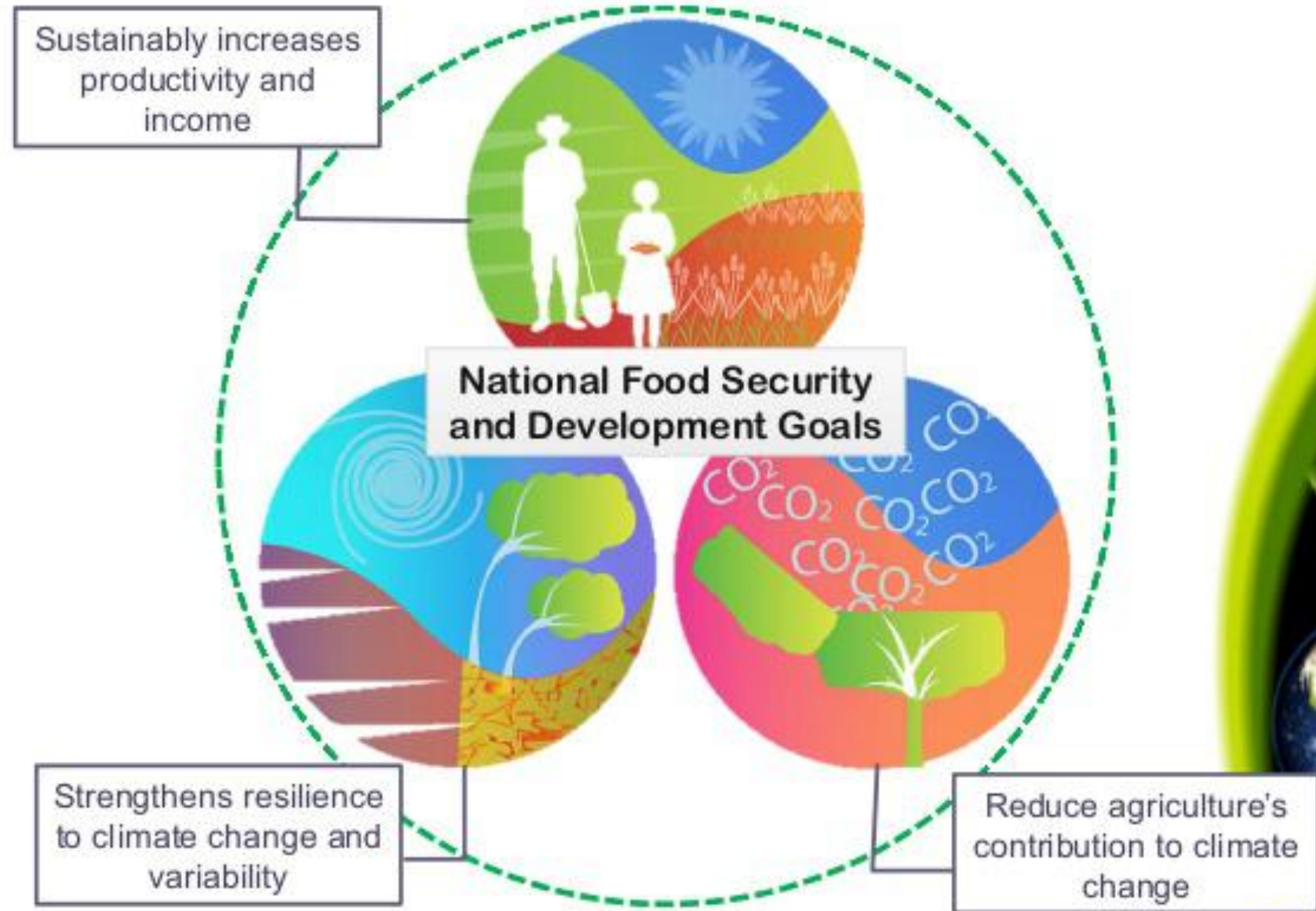
Proposed management interventions in the Utar-Serapat peatland landscape in Kalimantan in Indonesia. Project area of approximately 107,000 ha; encompassing approx. 40,000 ha of degraded peat dome.

GGGI's forest/ landscape work with provinces in Colombia



- GGGI and the Kingdom of Norway extended into Phase II of their partnership in Colombia to work toward **deforestation control and sustainable development** through the promotion of nature tourism, sustainable livestock, non-timber forest products, and the forestry economy.
- Signing of the **Beef and Dairy Zero Deforestation Agreements** to consolidate more sustainable and deforestation-free agricultural chains in Colombia

What is CSA?





Korea's \$35 Billion Green Plan Skirts Zero-Carbon Target

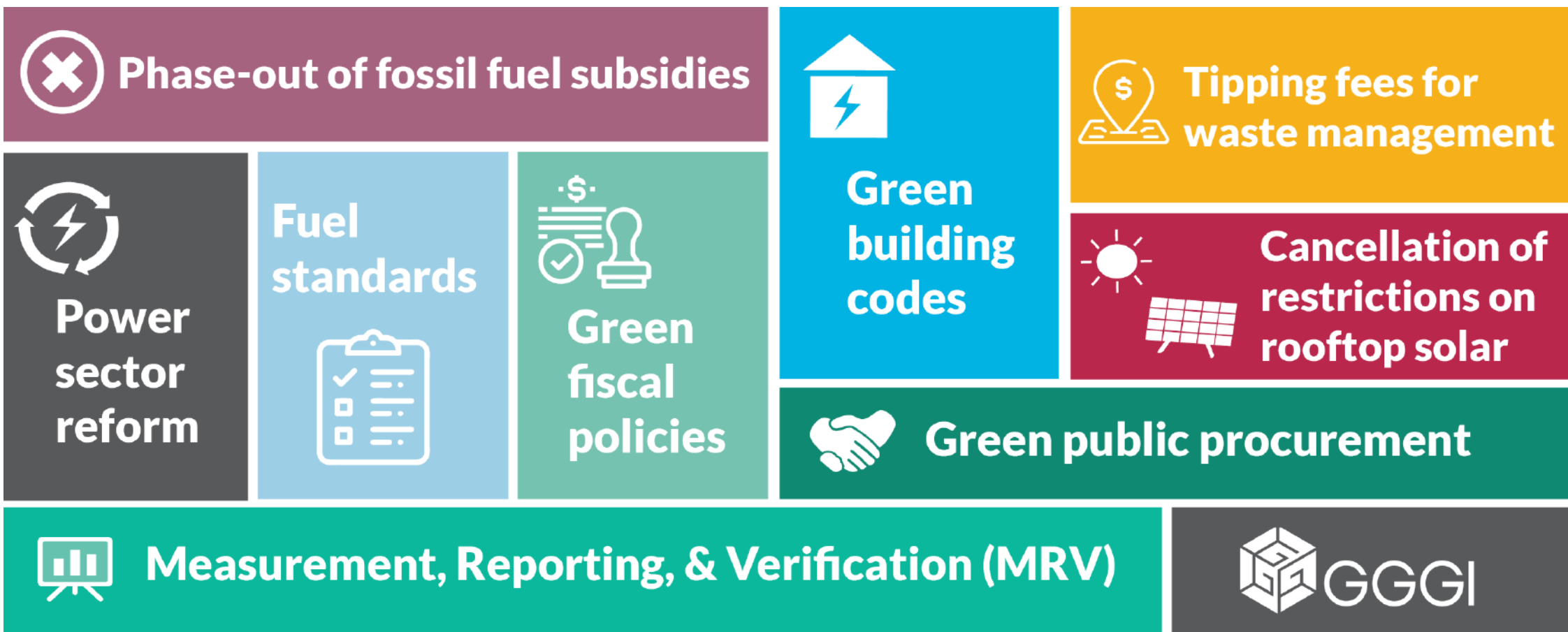
- The Republic of Korea revealed a 42.7 trillion won (\$35 billion) plan to ramp up its commitment to renewable energy and environmentally friendly infrastructure. (energy-efficient smart grids, renewable energy sources and clean vehicles)
- President Moon Jae-in announced a framework on July 14 to expand energy efficiency, boost low-carbon power sources and foster green industries amid an effort to triple renewable power output by 2025.
- The green power plans are part of President Moon's broader 160 trillion won "New Deal" program, one of his biggest economic initiatives since coming to power in 2017.



COVID-19 and Climate Action: Challenges and Opportunities

Policy Brief: Green Deals to Accelerate Climate Action Post-COVID-19

GGGI's newly released policy brief covers [Green Deal Experiences](#) to date, [recommends a Green Deal package](#) for emerging and developing countries, and an accompanying set of [policy and investment recommendations](#) for policymakers faced with the COVID-19 crisis.



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 in USD
(Million)

Cost Share
in %



Green physical & digital infrastructure
16,800 jobs

- Build solar and wind energy assets
- Energy storage, including green hydrogen
- Grid modernization
- Digital network and AI infrastructure
- Sustainable mobility
- Green urban infra – bike lanes, waste recycling

350

30%



Building Energy Efficiency renovations & retrofits
14,400 jobs

- Insulation
- Energy-efficient heating and cooling
- Domestic energy storage

300

25%



Education and training
2,400 jobs

- Green job training
- Online education systems
- Online economy systems for the private sector

50

5%



Natural capital investment
187,500 jobs

- Restoration carbon-rich habitats (forests, peatlands, mangroves)
- Climate-smart agriculture

250

25%



Green technology R&D
2,400 jobs or **Rural support schemes**
37,500 jobs

- Green technology R&D for emerging economies
- Rural support schemes such as employment-based social assistance programs for developing economies

50

5%

Conclusion: Local governments have a key role to play to achieve the Sustainable Development Goals

Municipal governments

Planning: Develop Sustainable City Plans – or Climate Action Plans

- *Waste management / Circular Economy: Towards Zero Waste Cities*
- *Sustainable mobility & blue skies : electrifying public transportation*
- *Energy Efficiency & green jobs: green building codes and retrofitting buildings*

Provincial / regional governments

Sustainable landscapes

- *Reforestation / avoided deforestation: climate mitigation and biodiversity conservation*
- *Climate Smart Agriculture: climate resilience and green jobs*

Thank You

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