



FISCAL POLICY AGENCY
MINISTRY OF FINANCE
REPUBLIC OF INDONESIA

Indonesia Country Programme for the Green Climate Fund

Version 1.0





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ABBREVIATIONS

AE	Accredited Entity
APBN	Anggaran Pendapatan dan Belanja Negara (State Budget)
Bappenas	Badan Perencanaan Pembangunan Nasional (National Development Planning Agency)
BAU	Business as Usual
BIG	Badan Informasi Geospasial (Geospatial Information Agency)
BKF	Badan Kebijakan Fiskal (Fiscal Policy Agency)
BMKG	Badan Meteorologi, Klimatologi, dan Geofisika (Meteorology, Climatology, and Geophysical Agency)
BPD LH	Badan Pengelola Dana Lingkungan Hidup (Indonesia Environmental Fund Agency)
BPPT	Badan Pengkajian dan Penerapan Teknologi (Agency for the Assessment and Application of Technology)
BUR	Biennial Update Report
COP	Conference of Parties
CPD	Country Programme Document
CSO	Civil Society Organizations
DNPI	Dewan Nasional Perubahan Iklim (National Council on Climate Change)
FGD	Focus Group Discussion
FOLU	Forest and Land Use
FPA	Fiscal Policy Agency
GCF	Green Climate Fund
GDP	Gross Domestic Product
GHG	Greenhouse Gasses
INDC	Intended Nationally Determined Contributions
IPPU	Industrial Processes and Product Use
Kemenhub	Kementerian Perhubungan (Ministry of Transportation)
Kemenperin	Kementerian Perindustrian (Ministry of Industry)
Kementan	Kementerian Pertanian (Ministry of Agriculture)
ESDM	Kementerian Energi dan Sumber Daya Mineral (Ministry of Energy and Mineral Resources)
KKP	Kementerian Kelautan dan Perikanan (Ministry of Maritime Affairs and Fisheries)
KLHK	Kementerian Lingkungan Hidup dan Kehutanan (Ministry of Environment and Forestry)
KLHS	Kajian Lingkungan Hidup Strategis (Strategic Environmental Assessment)

ABBREVIATIONS

PUPR	Kementerian Pekerjaan Umum dan Perumahan Rakyat (Ministry of Public Works and Public Housing)
LFG	Landfill Gas
Kemenkeu	Kementerian Keuangan (Ministry of Finance)
NAMA	Nationally Appropriate Mitigation Actions
NDC	Nationally Determined Contribution
NOL	No Objection Letter
PLTSa	Pembangkit Listrik Tenaga Sampah (Waste-to-energy plant)
RAD-GRK	Rencana Aksi Daerah Penurunan Emisi Gas Rumah Kaca (Regional Action Plan to Reduce GHG Emissions)
RAN-API	Rencana Aksi Nasional Adaptasi Perubahan Iklim (National Action Plan for Climate Change Adaptation)
RAN-GRK	Rencana Aksi Nasional Penurunan Emisi Gas Rumah Kaca (National Action Plan to Reduce GHG Emissions)
REDD+	Reducing Emissions from Deforestation and Forest Degradation Plus
Renja K/L	Rencana Kerja Kementerian/Lembaga (Work Plan for Ministries and Institutions)
Renstra K/L	Rencana Strategis Kementerian/Lembaga (Strategic Plan for Ministries and Institutions)
RKP	Rencana kerja Pemerintah (Government Work Plan)
RPJMN	Rencana Pembangunan Jangka Menengah Nasional (National Medium-Term Development Plan)
RPJP	Rencana Pembangunan Jangka Panjang (Long-Term Development Plan)
SDGs	Sustainable Development Goals
SIDIK	Sistem Informasi Data Indeks Kerentanan (Vulnerability Index Data Information System)
SOEs	State-owned Enterprises
UNFCCC	United Nations Framework Convention on Climate Change





01 Introduction

To achieve the NDC targets, significant funds are required for financing climate change activities.

1.1 Indonesia's Climate Commitments, Financing Gap and the GCF

Indonesia has shown its strong commitments to mitigate and adapt to climate change. In the Nationally Determined Contribution (NDC) document, Indonesia has committed to reduce greenhouse gas (GHG) emissions by 29% from the business as usual (BAU) scenario in 2030 using its own resources, or known as the unconditional reduction target (Table 1 and Figure 1). With international support, the target would be increased to a 41% reduction in GHG emissions from the BAU scenario in 2030. As these additional GHG emissions reduction are conditional upon the availability

of financial and technological support, it is called the “conditional reduction target”. To achieve the GHG emissions reduction targets by 2030, Indonesia focuses its program on five sectors: forest and land use (FLU), energy and transportation, industrial processes and product use (IPPU), waste and agriculture. The first two sectors are responsible for 97 percent of the total emissions reduction target.

TABLE 1 Emissions Reduction Target as Stated in the Indonesia NDC

No	Sector	GHG Emissions Level 2010*	GHG Emissions Level 2030 (MTon CO ₂ e)			Annual Average Growth BAU (2010-2030)	Average Growth 2000 – 2012*
		MTon CO ₂ e	BaU	CM1	CM2		
1	Energy*	453.2	1,669	1,355	1,271	6.7%	4.50%
2	Waste	88	296	285	270	6.3%	4.00%
3	IPPU	36	69.6	66.85	66.35	3.4%	0.10%
4	Agriculture	110.5	119.66	110.39	115.86	0.4%	1.30%
5	Forestry**	647	714	217	64	0.5%	2.70%
TOTAL		1,334	2,869	2,034	1,787	3.9%	3.20%

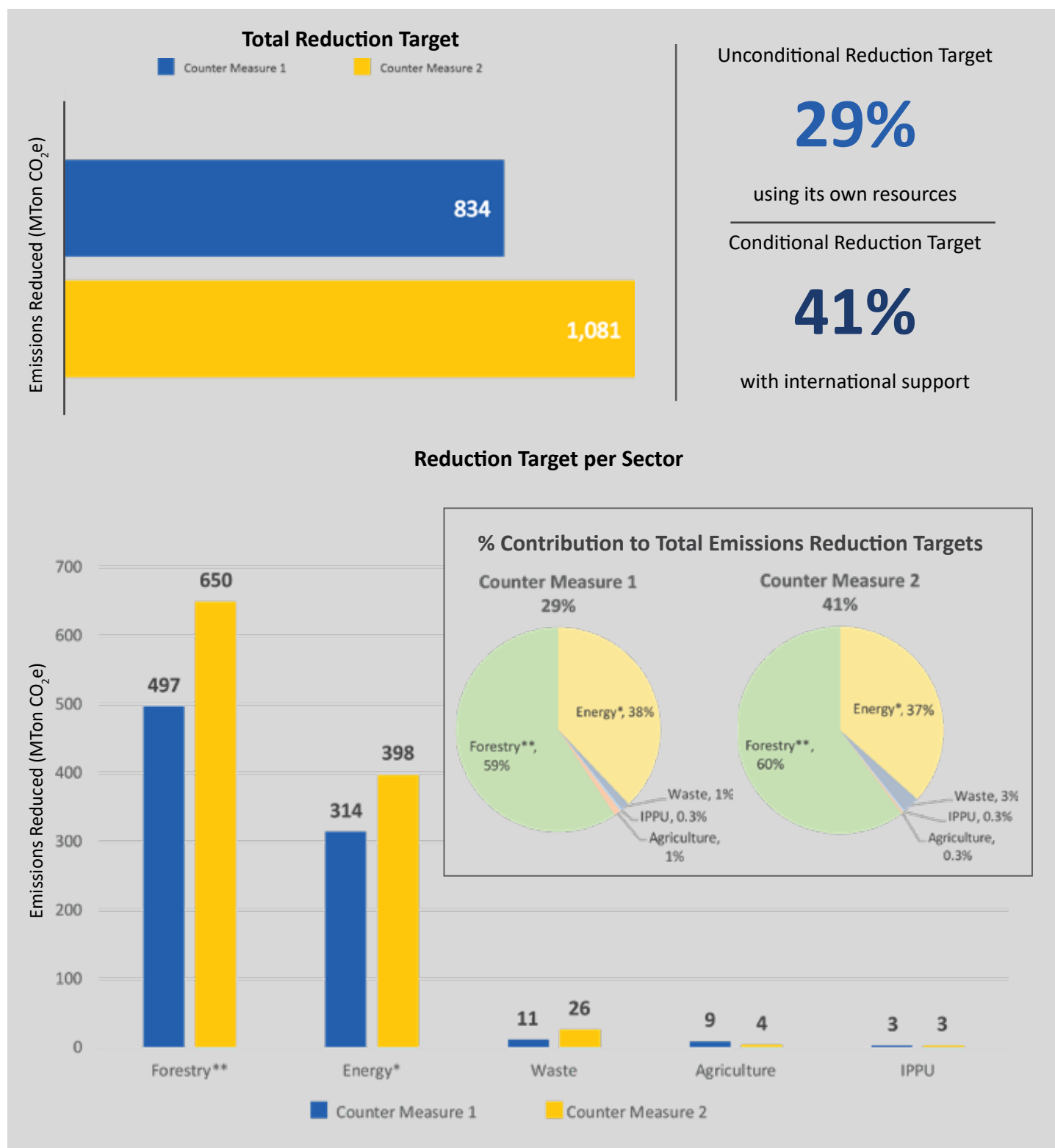
Source: First NDC Indonesia, 2016

*Including fugitive ** Including peat fire

Notes:

CM1 = Counter Measure (unconditional mitigation scenario)

CM2 = Counter Measure (conditional mitigation scenario)

FIGURE 1 Emissions Reduction Target in Total and per Sector in 2030

Source: First NDC Indonesia, 2016

*Including fugitive ** Including peat fire

Notes:

CM1 = Counter Measure (unconditional mitigation scenario)

CM2 = Counter Measure (conditional mitigation scenario)

Indonesia's commitment to climate adaptation has also been integrated in Indonesia's NDC document, which elaborates the National Action Plan for Climate Change Adaptation or known as RAN-API which was equipped with gender responsive guidelines for adaptation action in 2015 (Gender Responsive RAN-API)¹. The document categorizes the efforts to adapt to climate change and climate variability into three main themes: economic resilience and social & livelihoods resilience that include gender and social inclusion aspects, as well as ecosystem & landscape resilience (Figure 2). In addition to the three main themes, there are the factors that support or enable resilience to climate change which include robust spatial plans and secure land tenure. The NDC document, however, does not have specific target assigned for climate adaptation.

As part of the Paris Agreement, Indonesia is required to prepare, communicate and maintain information regarding the progress on achieving the NDC targets. In the Second Biennial Update Report (BUR), Indonesia has provided update on its progress to achieve the NDC target. Due to the El-Nino season, the estimated emission in 2015 increased much higher from the baseline by about 670 Gg CO₂e. However, Indonesia reduced its emission by about 311,000 Gg CO₂e from the baseline in 2015 (BUR, 2018), which is entitled to receive the result-based payment from the Green Climate Fund (GCF).

To achieve the NDC targets, significant funds are required for financing climate mitigation activities. Based on the Second BUR, the required financial resources to meet the unconditional target is estimated at IDR 3,461 trillion (or USD 247.2 billion). The government spending on climate change has been thus far recorded at a total of IDR 373,507 billion (or USD 26.68 billion²) in the period of 2016-2019. With the stable macroeconomic condition

over the past three years, the trend of government and private sector spending on climate change could also increase. Indonesia's economic growth is expected to climb up at 5.5% to 6.1% in 2024.³ Government investment and private consumption are expected to continue driving the economy in the upcoming years, even with global uncertainty resulting from tensions in current world trade. However, considering the current trend, a significant budget gap to achieve the targets set in the NDC can be expected.

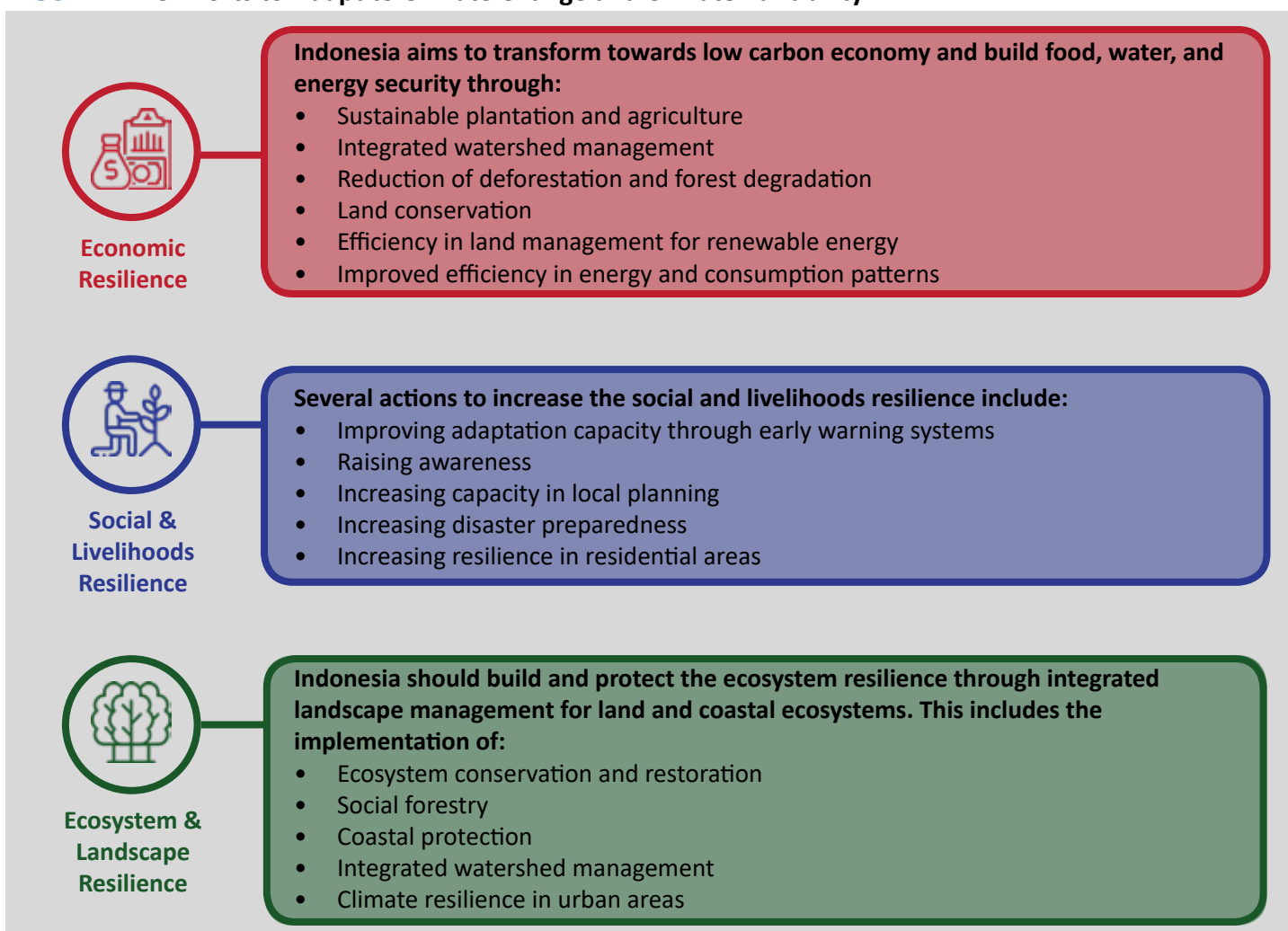
To plug the financing gap, Indonesia is accessing the GCF which stands as the largest climate change trust fund with a pledged endowment of USD 10.3 billion and total committed amount of projects equalling USD 5 billion.⁴ The fund is allocated proportionally for both mitigation and adaptation projects with the strategic focus detailed in Figure 3.

¹The Gender Responsive RAN-API was issued by the Ministry of Women Empowerment and Child Protection a year after the RAN-API publication.

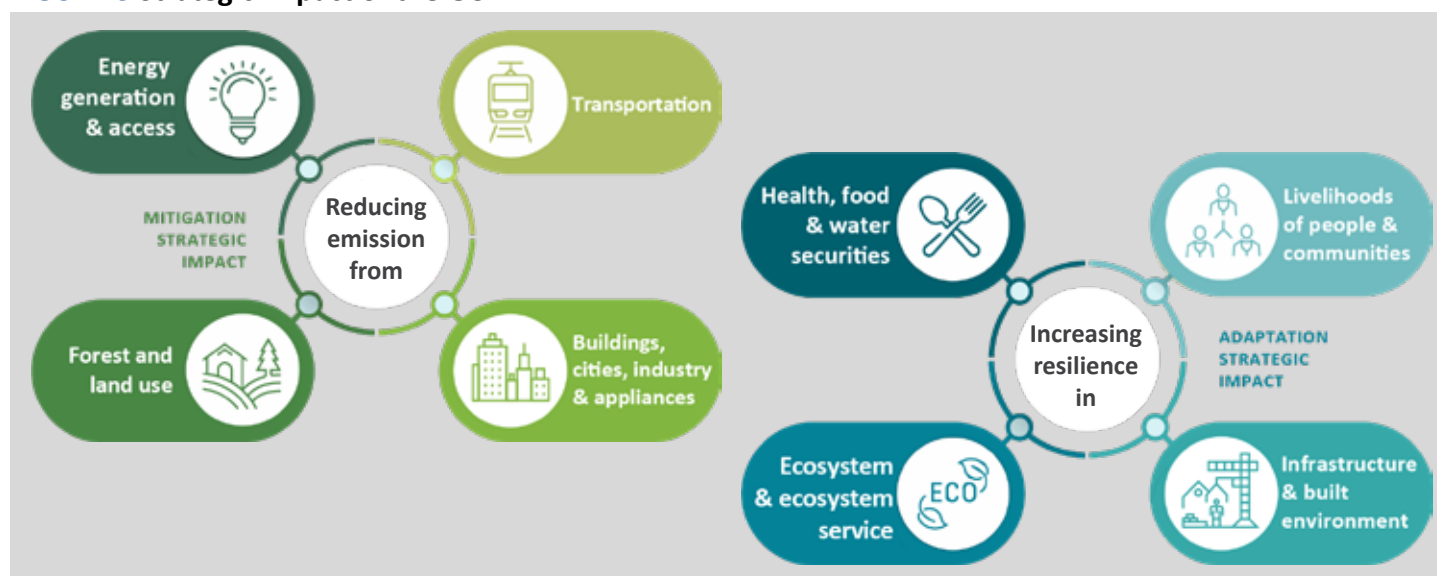
² Average foreign exchange is USD 1 = IDR 14,000

³ Bank Indonesia (2018). 2018 Economic Report on Indonesia. Retrieved from https://www.bi.go.id/en/publikasi/laporan-tahunan/perekonomian/Pages/LPI_2018.aspx

⁴ As per 28th May 2019

FIGURE 2 The Efforts to Adapt to Climate Change and Climate Variability

Source: Implementation Strategy of NDC (2017)

FIGURE 3 Strategic Impact of the GCF

Source: <https://www.greenclimate.fund/how-we-work/tools/infographics>

1.2 About this Country Programme Document

The purpose of this Country Programme Document of the GCF is threefold.¹ First, it aims to outline Indonesia's climate change policies and strategies and describe how the GCF fits in them. Second, it provides the list of priorities of climate actions that will be carried out by Indonesia to mitigate and adapt to climate change and achieve the NDC targets. Third, the document provides the information on how the stakeholders decide on the priority actions that will be financed by the GCF. The target audiences of this document are depicted in Figure 4. This document was prepared to improve the previous document issued in 2018.

This Country Programme Document was developed based on reviews of existing policy documents and also consultations with relevant stakeholders. A series of consultation processes, including focused group discussions, one-on-one interviews, workshops and meetings, was carried out from January until September 2019. Inputs were also sought to the draft document prepared through face-to-face interactions and through email correspondence. The consultation process is summarized in Annex 1.

This Country Programme Document has the following structure: First, the document presents specific targets on climate mitigation and adaptation. It then discusses how climate change is mainstreamed into Indonesia's development plans. The required financial resources to finance climate actions to achieve the targets are detailed before discussing about how the GCF is best positioned within Indonesia's climate finance landscape. Finally, the priority actions that can be financed by the GCF are proposed.

How can stakeholders use this document?

- Project proponents can understand the priorities to achieve Indonesia's climate targets that could potentially be proposed to the GCF. Project proponents that have the capacity and skills to submit a proposal aligned with the priorities can communicate with the line ministry to obtain their support to submit a project concept to the GCF.
- Civil society and general public can use the document as the basis to monitor whether GCF funded projects have been aligned with the country's priorities and monitor the impact of the GCF funded projects. Feedback can be provided to the NDA.
- The GCF Secretariat can use the document to check whether the proposals received already align with the national priorities.

¹ To access GCF funds, proponents should comply with a set of processes and requirements. Countries are suggested to develop a Country Programme Document to list the priorities that can be proposed to the GCF. While developing a country programme is not mandatory, a country needs to develop a program to foster ownership from key stakeholders across all levels of government, local and community-based institutions, the private sector and civil society to put forward clear and country-owned priorities that the GCF can support. A Country Programme Document will also encourage existing and prospective accredited entities to identify practical steps that can enable the implementation of such priorities supported by the Fund.

FIGURE 4 Target Audiences of the Country Programme Document







02 Indonesia's Climate Change Priorities

In the Nationally Determined Contribution (NDC) document, Indonesia has committed to reduce greenhouse gas (GHG) emissions by 29% from the business as usual (BAU) scenario in 2030 using its own resources, or known as the unconditional reduction target.

Indonesia has made several bold commitments particularly related to climate change mitigation, which has been communicated to the UNFCCC. In 2009, Indonesia first announced its commitment to reduce emissions as much as 26% from the business as usual (BAU) scenario in 2020 using its own resources, or 41% in 2020 with international support. To achieve the commitments, the President issued a Regulation in 2011 to detail the action plan to reduce greenhouse gas (GHG) emissions, known as RAN-GRK (Rencana Aksi Nasional Penurunan Emisi Gas Rumah Kaca). This action plan was later used as the basis of submitting the Indonesian Nationally Appropriate Mitigation Actions (NAMA) to the UNFCCC.¹ Following COP19 of the UNFCCC in 2013, countries agreed to voluntarily submit their post 2020 climate actions known as their Intended Nationally

Determined Contributions (INDC).² In Indonesia's INDC submitted in 2015, the commitment was increased to 29% from the BAU scenario in 2030 from the previous target that was set at 26% from the BAU scenario in 2020. Two years later, in the COP21, all countries agreed to adopt the Paris Agreement which turn the INDCs to be the nationally determined contributions (NDCs). Following the finalization of the NDC document, the RAN-GRK has not been revised according to the new commitment detailed in the NDC documents. Hence, when discussing the national priorities, this section therefore refers to the NDC and the Second Biennial report that is submitted to the UNFCCC.

2.1 National Action Plan for GHG Emissions Reduction


Indonesia has shown its strong commitments to mitigate and adapt to climate change. In the Nationally Determined Contribution (NDC) document, Indonesia has committed to reduce greenhouse gas (GHG) emissions by 29% from the business as usual (BAU) scenario in 2030 using its own resources, or known as the unconditional reduction target (Table 1). With international support, the target would be increased to a 41% reduction in GHG emissions from the BAU scenario in 2030. As these additional GHG emissions reductions are conditional upon the availability of financial and technological support, it is called the “conditional reduction target”. To achieve the GHG emissions reduction targets by 2030, Indonesia focuses its program on five sectors:


forest and land use (FLU), energy and transportation, industrial processes and product use (IPPU), waste, and agriculture. The first two sectors are responsible for 97 percent of the total emission reductions target.


¹ Nationally appropriate mitigation actions (NAMAs) were one of the agreements of the Conference of Parties (COP) at its thirteenth session in Bali in 2007, although the first NAMAs were only submitted in 2012. NAMAs are mitigation measures, regulations, standards, programs, policies or financial incentives, proposed by developing country governments to reduce emissions below 2020 business-as-usual levels and to contribute to domestic sustainable development.

² Intended Nationally Determined Contributions (INDCs) are a compromise between “quantified emissions limitation and reduction objective” and “nationally appropriate mitigation actions” (NAMAs) that the Kyoto Protocol used to describe the different legal obligations of developed and developing countries. It was agreed that all countries that signed the UNFCCC were asked to publish at the 2013 United Nations Climate Change Conference held in Warsaw, Poland, in November 2013.

TABLE 2 Emissions Reduction Target for Main Sectors

 ENERGY	Unconditional Target (29%)	Conditional Target (41%)
	75% from the total energy consumption	100% from the total energy consumption
Efficiency in final energy consumption		
Implementation of clean coal technology in power plant		
Renewable energy in electricity production	19.6% (7.4 GW based on RUPTL)	Electricity production of 132.74 TWh
Implementation of biofuel in transportation energy (mandatory B30)	90%	100%
Additional distribution lines	100%	
Additional compressed- natural gas fuel station	100%	

 FOREST AND LAND USE	Unconditional Target (29%)	Conditional Target (41%)
Deforestation reduction through	Unplanned deforestation (in thousand hectares):	Unplanned deforestation (in thousand hectares):
(i) combating illegal logging and forest fire,	2013-2020: 175	2013-2020: 175
(ii) restructuring of forestry sector industries including enhancing plantation development,	2020-2030: 92	2021-2030: 66
(iii) rehabilitation and conservation of forest,	2030-2050: 0	2030-2050: 0
(iv) promoting sustainable forest area, and	Planned deforestation	Planned deforestation
(v) strengthening of local economies.	2011-2050: based on estimation	2011-2050: based on estimation

 AGRICULTURE	Unconditional Target (29%)	Conditional Target (41%)
The use of low emission crops	In total, the use of land for low emission crops is up to 926,000 hectares in 2030*.	In total, the use of land for low emission crops is up to 908,000 hectares in 2030*.
Implementation of water-efficient concept in water management	Implementation of water efficiency is up to 820,000 hectares in 2030*.	
Manure management for biogas	Up to 0.06% of the total cattle in 2030**.	
Feed supplement for cattle	Up to 2.5% of the cattle population in 2030**.	



WASTE

	Unconditional Target (29%)	Conditional Target (41%)
Enhancement of LFG recovery from 2010 to 2030	LFG recovery reduces CH ₄ from 0.65% to 10%	
Enhancement of the percentage of waste utilization by composting and Reduce, Re-use, Recycle (paper)	22% in 2020, 30% in 2030***.	
Enhancement of the percentage of energy generation from waste/RDF (Refuse Derived Fuel) implementation, compare to total waste	<ul style="list-style-type: none"> Up to 3% in 2020 and increase up to 5% in 2030****. PLTSa implementation in 7 cities. 	<ul style="list-style-type: none"> Up to 3% in 2020 and increase up to 5% in 2030****. PLTSa implementation in 12 cities (additional)*****.
Management of domestic liquid waste	<ul style="list-style-type: none"> Sludge recovery in septic tank/latrine management Communal septic tanks for LFG recovery and biodigester management Operationalization of aerobic septic tank 	
Management of industrial liquid waste	Pulp and paper industry implement the waste water treatment sludge management, and utilization of methane. Waste water treatment (palm oil mill effluent or POME) in palm oil industry: implement methane capture & utilization.	



	Unconditional Target (29%)	Conditional Target (41%)
Industrial processing and product use in major large scale industries.	Cement industry implements "clinker to cement ratio" (blended cement) from 80% in 2010 to 75% in 2030 Enhancing efficiency by feedstock utilization and CO ₂ recovery in Primary Reformer in petrochemical industry (in particular ammonia production). Other actions: <ul style="list-style-type: none"> Steel industry implements: CO₂ recovery, improvement process in smelter and scrap utilization. Remains of claim PFCs from CDM activities (aluminum smelter). 	

Source: Indonesia NDC Document (2015)

* the use of best available technology will increase cattle productivity and lead to the decrease of land use change to agricultural purposes.

** increase of cattle population and current biogas operationalization (with the assumption that government's subsidy will continue taking into consideration its high cost of investment).

***refer to national target on solid waste management 2015-2025.

**** considered government plan in developing PLTSa (*Pembangkit Listrik Tenaga Sampah*/Waste to Energy plants) in 7 cities and current trend on waste utilization by RDF in industries.

***** considered size of the cities, their mitigation potentials in RDF implementation, and population growth rate.

2.2 National Action Plan for Climate Adaptation

The NDC document does not provide specific targets on climate adaptation. The implementation strategy document issued by KLHK in 2017 provides short list of climate adaptation action plans that are categorized into three main themes including: economic resilience, social and livelihoods resilience, and ecosystem and landscape resilience. These themes were discussed in detail by the National Action Plan on Climate Adaptation (RAN-API) and the Gender Responsive RAN-API¹ (GR RAN-API) documents. One additional theme presented in the RAN-API document but missing in the NDC is the Special Areas Resilience which includes urban area and coastal as well as small islands area. RAN-API, GR RAN-API, and NDC documents include a specific theme on the supporting system, although specific explanation provided for the supporting system theme between the three documents vary.

The RAN-API aims to provide guidance and direction for mainstreaming climate change adaptation issues in the national development planning process. Whereas, the GR RAN-API was developed to provide guidelines for line ministries and crosscutting ministries to have better understanding in mainstreaming gender aspects into climate change adaptation. The RAN-API does not have specific targets in climate adaptation, however, it focuses on minimizing the adverse impacts of climate change that may inhibit the achievement of development programs. The RAN-API states that adaptation to climate change involves adjustments of strategies, policies, management, technology and attitudes so that the negative effects of climate change can be minimized, and if possible, to utilize and maximize the positive effects of climate variability. The specific objectives, strategies and cluster action plans according to different sectors are listed in Table 3.



Photo by GGGI Indonesia

¹ Kementerian Pemberdayaan Perempuan dan Perlindungan Anak (2015). "Pedoman Umum Adaptasi Perubahan Iklim yang Responsif Gender". Retrieved from <https://www.kemenpppa.go.id/lib/uploads/list/32720-adaptasi-perubahan-iklim-yang-responsif-gender-.pdf>

TABLE 3 Target, Strategy, and Action Plan

	Target	Strategy	Cluster of Action Plan
1. Economic Resilience	1.1. Sub-Sector of Food Security		
	<ul style="list-style-type: none"> Decreased rate of agricultural and fisheries food production loss due to climate change New growth areas of food production in areas with low climate risk and minimum environmental impact are developed Food security system for farmers, fishermen and communities (micro) with a healthy, nutritious and balanced food pattern, and diversified to the optimum level is developed 	<ul style="list-style-type: none"> Adjustment and development of farming systems to climate change Development and implementation of adaptive technology to climate stress Development and optimization of land, water and genetic resources 	<ol style="list-style-type: none"> Adjustment of Food Production Systems Expansion of farming and aquaculture areas Repairment and development of agriculture and fisheries infrastructure Acceleration of food diversification Development of innovative and adaptive technology Development of information and communication systems (climate and technology) Supporting programs
1. Economic Resilience	1.2. Sub-Sector of Energy Security		
	<ul style="list-style-type: none"> Hydropower and geothermal energy sources at low climate risk areas are established High productivity and climate stress resistance crops for bioenergy (biomass and biofuels) is developed Organic waste utilization for energy and gas production, especially for high density populated areas to reduce the environmental pollution is optimized and the tolerance interval (vulnerability) of the area to the extreme rainfall impacts is improved Increased use of renewable energy sources in remote villages 	<ul style="list-style-type: none"> Restoration and conservation of rainfall catchment areas in river basin areas that become the sources of hydropower and geothermal energy stations Optimization of organic waste and biomass utilization for the development of energy sources from biofuels 	<ol style="list-style-type: none"> Restoration and conservation of rainfall catchment areas Expansion of renewable energy sources utilization Development of innovative and adaptive technology for the cultivation of biofuel source crops and energy source plantations Supporting programs

2. Livelihood Resilience	Target	Strategy	Cluster of Action Plan
	2.1. Sub-Sector of Health		
	<ul style="list-style-type: none"> Factors of vulnerability and risk to public health that can be caused by climate change is identified and controlled The awareness and utilization of early warning system for infectious and non-infectious diseases outbreak caused by climate change Regulations, legislation, and institutional capacity at central and local levels on the risks to public health that can be posed by climate change is strengthened Increased knowledge, technological innovation, and community participation on health related climate change adaptation 	<ul style="list-style-type: none"> Strengthening and updating of information on vulnerability and risk to public health due to climate change Development of policy, planning, network, and inter- agency cooperation at the local, regional and national level related to public health risk due to climate change Capacity building and early warning system development on climate change-related threats to public health in the community and government level 	<ol style="list-style-type: none"> 1. Identification and control of factors of vulnerability and risk to public health caused by climate change 2. Strengthening the awareness and utilization of early warning system for infectious and non-infectious diseases outbreak caused by climate change 3. Strengthening the regulations, legislation, and institutional capacity at central and local levels on the risks to public health that can be posed by climate change 4. Increased knowledge, technological innovation, and community participation on health-related climate change adaptation
	2.2. Sub-Sector of Settlement		
	<ul style="list-style-type: none"> Study and research on improving the resilience of settlements adaptation to climate change is implemented Development and management of settlements with integration of climate change adaptation and sustainable development concept is implemented Increased understanding of stakeholders and the public regarding the climate change resilient settlements Increased access to decent and affordable housing 	<ul style="list-style-type: none"> Provision of facilities for study and research activities on the settlement resilience which adaptive to climate change Development of residential structures resilient to climate change impacts and affordable Dissemination of information to the government at various levels on the settlements which resilient to the impacts of climate change Development of the climate change adaptation program of sub-sector of settlement that refers to the needs arising from climate change issues 	<ol style="list-style-type: none"> 1. Studies and researches on increasing the resilience of settlements adaptation to climate change 2. Development and management of Settlement 3. Efforts for community empowerment 4. Access to decent and affordable housing

	Target	Strategy	Cluster of Action Plan
2. Livelihood Resilience	2.3. Sub-Sector of Infrastructure		
	<ul style="list-style-type: none"> Development of infrastructure resilience that are adaptive to climate change Infrastructure adaptive to climate change is developed Infrastructure that has a direct impact on public health and resilient to climate change is provided and adjusted Infrastructure layout management that is integrated with spatial planning in sustainable development concept 	<ul style="list-style-type: none"> Adjustment of the structure, components, design and location of infrastructure so that it will be resilient to climate change Improvement of infrastructures that are vulnerable to climate change both in terms of structure, function and location Providing support to study and research activities on the concept development of infrastructure resilience to climate change 	<ol style="list-style-type: none"> Research and development of concept on infrastructure resilience Development of infrastructure that are adaptive to climate change Risk reduction on disruption to the transport accessibility functions on road, bridges, railways, ports and airports due to climate change impacts Enhancement, provision, and adjustment of infrastructure that has a direct impact on public health and resilience to climate change Integration to sustainable development Improvement on infrastructure support system for climate change adaptation Design, supply and management of energy infrastructure so that it will be adaptive to climate change
3. Ecosystem Resilience	3. Ecosystem Resilience		
	<ul style="list-style-type: none"> Decreased area of damaged natural terrestrial and marine ecosystems due to climate change Increased quantity and quality of coral reefs and forest cover in the priority river basin areas Decreased threat level of key species System for ecosystem resilience is developed 	<ul style="list-style-type: none"> Securing the availability of water and protection against extreme climate events Prevention of loss of ecosystems and biodiversity Maintenance of water supply sustainability, conservation of ecosystems and biodiversity conservation 	<ol style="list-style-type: none"> Improvement of spatial planning and land use Management and utilization of sustainable productive areas Improvement of conservation and essential ecosystem area governance Rehabilitation of degraded ecosystems Reduction of threats to ecosystems Development of information

	Target	Strategy	Cluster of Action Plan
4. Special Areas Resilience	4.1 Sub-Sector of Urban Area		
	<ul style="list-style-type: none"> Climate change adaptation is integrated into urban spatial plans Urban infrastructure and facilities are adjusted to anticipate the threat of climate change Increased capacity of urban communities related to climate change issues 	<ul style="list-style-type: none"> Adjustment of spatial plan for urban area to the threat of climate change Sustainable environmental management for urban area Improvement on quality of infrastructure and facilities in urban area Capacity building for urban area community in facing the threat of climate change Development and optimization of research and information system on climate in urban area 	<ol style="list-style-type: none"> Integration of adaptation into urban spatial planning plans Adjustment of urban infrastructure and facilities to anticipate the threat of climate change Capacity building for urban communities on climate change issues
	4.2 Sub-Sector of Coastal and Small Island areas		
	<ul style="list-style-type: none"> Improved capacity of coastal and small islands community on climate change issues Environment and ecosystem is managed and utilized for climate change adaptation Structural and non-structural adaptation measures is applied to anticipate the threat of climate change Climate change adaptation is integrated into management plan of coastal and small island areas Improved climate change adaptation supporting system in coastal and small island areas 	<ul style="list-style-type: none"> Achievement of livelihood stability for coastal and small island communities to the threat of climate change Improvement of environmental quality in coastal and small island areas Implementation of adaptation structure development in coastal and small island areas Adjustment of coastal and small island spatial plans to the threat of climate change Development and Optimization of research and information system on climate in coastal and small island areas 	<ol style="list-style-type: none"> Capacity building for coastal and small island communities on climate change issues Management and utilization of environment and ecosystem for climate change adaptation Application of structural and non-structural adaptation measures to anticipate the threat of climate change Integration of adaptation efforts to management plan of coastal and small island areas Improvement on climate change adaptation supporting system in coastal and small island areas

	Target	Strategy	Cluster of Action Plan
	5. Supporting System		
5. Supporting System	<ul style="list-style-type: none"> Improved capacity for stakeholders on climate change adaptation Accurate and updated climate information system is developed Increased research and development on knowledge and technology related to climate change adaptation Planning and budgeting responsive to climate change is developed Climate change adaptation activities are monitored and evaluated 	<ul style="list-style-type: none"> High to low vulnerability capacity improvements Information development that could increase knowledge and skill on how to reduce climate change vulnerability factors Research and development of technology to identify various causes of climate change and climate change disaster adaptation strategies Integration of adaptation efforts into development planning and budgeting on local, regional, and national level Monitoring and evaluation to obtain information on the progress and achievement of programs, issues to be anticipated, good lessons to be learned, and information to formulate future strategy 	<ol style="list-style-type: none"> Capacity building for stakeholders on climate change adaptation Development of accurate and updated climate information system Increasing research and development on knowledge and technology related to climate change adaptation Development of planning and budgeting as well as regulation formulation that are responsive to climate change Monitoring and evaluation of climate change adaptation activities

Source: RAN-API (2014)

RAN-API specifically named 15 provinces or district/municipalities that can serve as the pilot locations for RAN-API implementation. They include: Bali Province, Semarang Municipality, Pekalongan Municipality, West Java Province, Blitar Municipality, Bandar Lampung Municipality, East Java Province, Malang District, Batu Municipality, Malang Municipality, West Nusa Tenggara Province, Lombok Island, Tarakan Municipality, South Sumatera and North Sumatera Provinces. These locations were selected based on the following criteria:

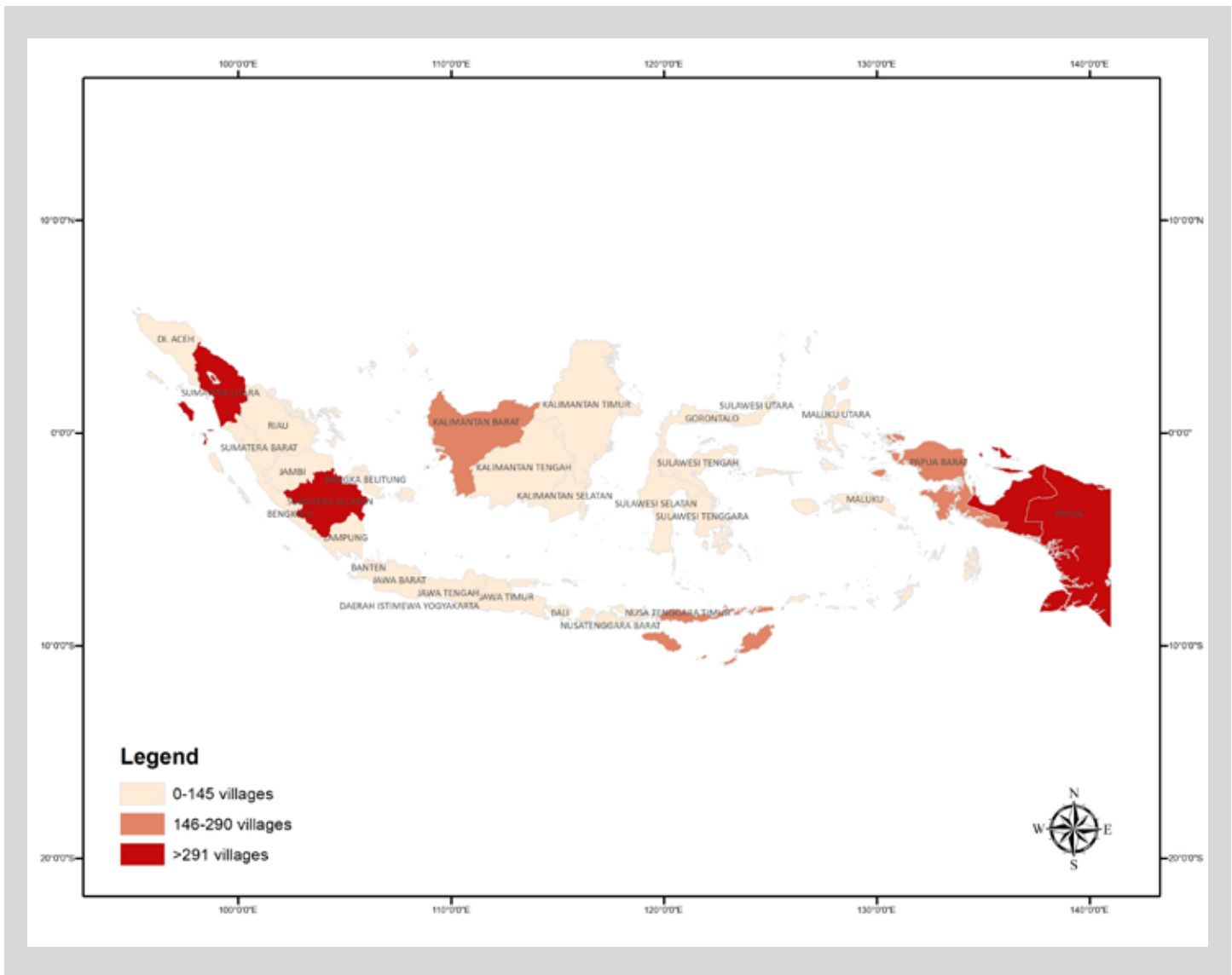
1. availability of complete vulnerability assessment that consists of climate assessment, potential impacts, affected sectors, and cluster of adaptation activities recommendation;
2. local government's commitment to climate change adaptation, shown by the existing adaptation strategy and plan, and mainstreamed in the local development plan and budget;

3. previous or existing adaptation related activities funded by local budget or other funding resources such as private or development partners;
4. establishment of local climate change working group/task force;
5. linkage with RAN-API. No further explanation was however provided related to this point in the RAN-API document.

The progress of pilot activities in the pilot locations can be accessed in the RAN-API Secretariat website.¹

In 2015, KLHK issued the Vulnerability Index Data Information System on (SIDIK) report that rates the vulnerability of villages in all provinces in Indonesia. Based on the vulnerability index, several provinces that can be classified as vulnerable and very vulnerable are Papua, West Papua, NTT, West Kalimantan, and North Sumatera (Figure 5).

¹ RAN-API Secretariat Website <http://sekretariat-ranapi.org>

FIGURE 5 Climate Vulnerability Index of Provinces in Indonesia

Source: recreated from the KLHK vulnerability index (2015)

2.3 National Climate Change Institutions

Indonesia has established necessary institutions that are responsible to lead the implementation of climate priorities. There has been several changes in the institutional setting and mandates attached to the different institutions since Indonesia first announced its commitment to reduce emissions in 2009. In 2015, the Ministry of Environment and Forestry (KLHK) was appointed by the President to coordinate many efforts related to climate change, including the climate change negotiation process. The President established a specific Directorate General in 2015 merging all organizations previously dealing with climate change including the DNPI and the REDD+ Agency.¹ The Directorate General of Climate Change has further issued the national registry system to register all climate actions, which can be used for registering programs and projects including initiated by subnational governments or private sectors including the GCF projects.

At the national level, several ministries and government bodies have mandates related to climate change that include the National Development Planning Agency, the Ministry of Finance and the Ministry of Environment. The National Development Planning Agency (Bappenas) has the mandate to monitor and evaluate the achievement of the RAN-GRK and also acts as the host of its Secretariat. Under the RAN-GRK, the Coordinating Ministry of Economic Affairs serves as the coordinating institution, while the implementation involves the ministries of Public Works, Agriculture, Forestry, Energy and Mineral, Transport and Industry. The National Development Planning Agency also has the role as the secretariat for the implementation of RAN-API. The Group was established by the Decree of the Minister of Planning/Head of the Planning Agency No. 38/M.PPN/HK/03/2012 regarding the establishment of the Coordination Team for Handling Climate Change. The Working Group is responsible for planning and implementing programs and activities on climate adaptation. For the implementation of climate adaptation at the subnational level, adaptation strategies need to be formulated at the provincial level. Each

region must develop their own strategy in coordination with the Ministry of Home Affairs. In addition to these functions, the National Development Planning Agency hosts the Indonesia Climate Change Trust Fund (ICCTF), which is a financial instrument that is government led, but does not feature in the government budget.

In 2011, the Ministry of Finance established the Centre for Climate Finance and Multilateral Policy at the Fiscal Policy Agency. The centre performs such functions as formulating policy recommendations and monitoring climate change financing related issues. This centre also deals with economic and financial co-operation within the G20 and other multilateral forums. Based on the Ministerial Decree No. 756/KMK.10/2017, the Ministry of Finance has also been appointed as the Nationally Designated Authority (NDA) for the Green Climate Fund. It hosts the Indonesia Environmental Fund Agency, or known as *Badan Pengelola Dana Lingkungan Hidup* (BPD LH).

Other line ministries such as forestry, agriculture and mining have roles managing finances for climate change. These ministries usually have a working group that specifically deals with issues related to climate change.

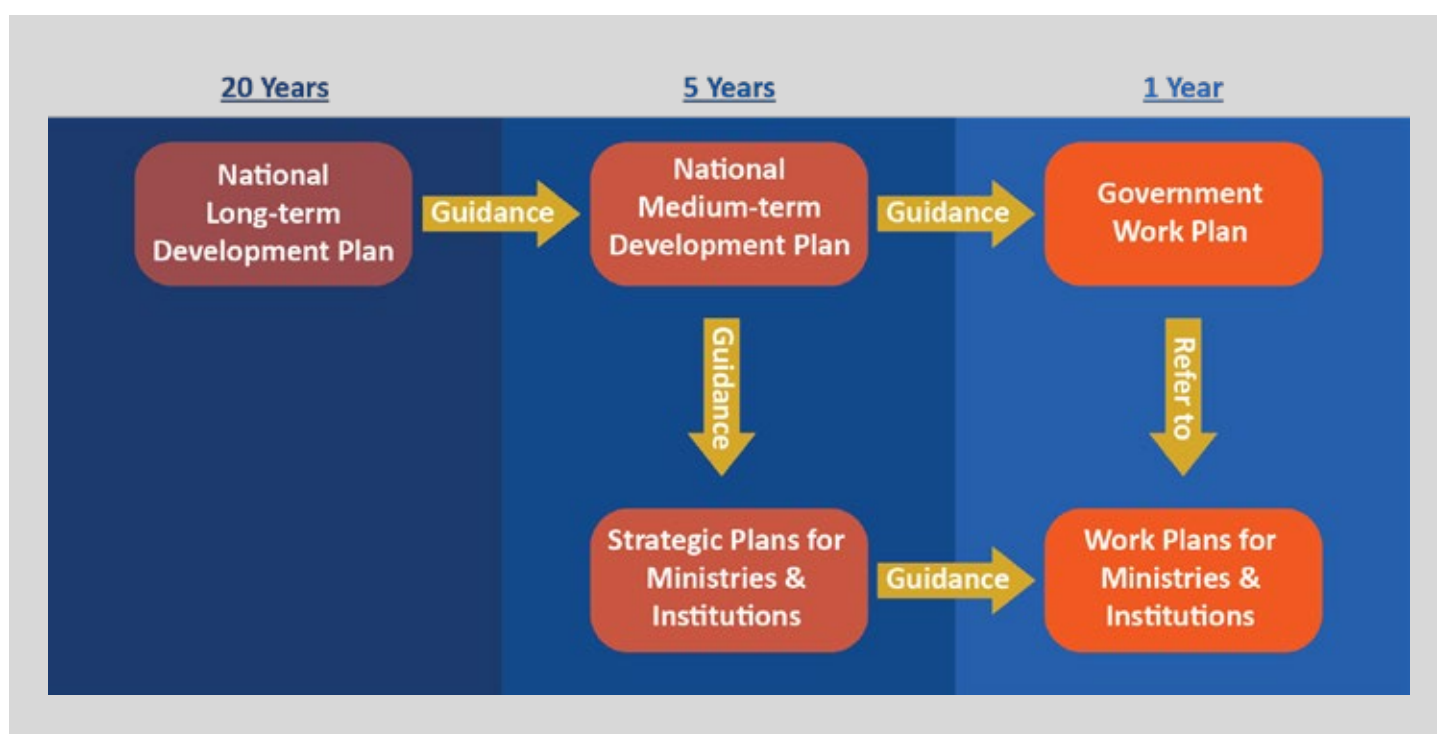
¹ The National Council on Climate Change (DNPI) was established by Presidential Regulation No. 48/2008. It is the primary body for policy coordination on climate change. The DNPI is chaired by the President with the Coordinating Ministers for Economic Affairs and for People's Welfare serving as vice-chairs. Council members include 17 cabinet ministers and the Head of Meteorology, Climatology and Geophysics.

2.4 Climate Change in Indonesia's Development Policies

The priority actions for climate mitigation and adaptation should be integrated into the national development plans to ensure that the actions can be well-implemented. Indonesia's development pathway is guided by several planning documents (Figure 6). The long-term development plan (RPJP) is a national development plan for a period of 20 years. Every five years, the government prepares the National Medium-Term Development Plan (RPJMN). Ministries and institutions then refer to the RPJMN when drafting

their five-year period Strategic Plan (Renstra K/L). These strategic plans act as the guidelines for the one-year period work plans for ministries and institutions (Renja K/L). The RPJMN is also used as a guideline for the five-year period Government Work Plan (RKP). The RKP guides the government budgeting process. This sub-section discusses how Indonesia's commitments on climate change has been integrated into the RPJMN and Renstra.

FIGURE 6 Indonesia Planning Documents Pathway





2.4.1 The Ministry of Environment and Forestry (KLHK)

According to the five year strategic plan (Renstra) of KLHK, three major strategic targets set for 2015-2019 were:

- (i) increasing the environmental quality and the environmental carrying capacity, water resilience and health;
- (ii) sustainable utilization of forestry including gender roles in the forest utilization and the environment to increase economy and welfare; and
- (iii) sustaining ecosystem and biodiversity as the supporting system of sustainable development.

Specific programs related to climate change under the DG of Climate Change within the ministry were:

- (i) to increase the capacity to adapt to climate change in 15 regions;
- (ii) to develop and implement policies for climate change mitigation including in forestry, peatland and waste management sub-sectors;
- (iii) to reduce the use of ozone depletion substances;
- (iv) to develop an inventory of GHG including monitoring, reporting and verification;
- (v) to increase access to finance and capacity building including technology for climate actions;
- (vi) to prepare Indonesia's positions in the climate negotiations; and
- (vii) to develop and implement fire prevention strategies.



2.4.2 The Ministry of Energy and Mineral Resources (ESDM)

In the energy sector, the strategic planning (Renstra) document of the Ministry of Energy and Mineral Resources (ESDM) 2015-2019 provides direction for the efforts to reduce GHG emissions. Specifically related to climate mitigation, three major policies within ESDM were: **emissions reduction, energy conservation, and energy diversification**. The details are:

A. Emissions Reduction

1. Ensuring the environmental carrying capacity to

support the availability of water and geothermal energy sources;

2. Prioritizing the provision of energy from sustainable energy resources;
3. Aligning the national energy management with the direction of the sustainable development at the national level, conservation of natural resources, conservation of resources energy resources and environmental pollution control;
4. Ensuring energy provision according to the environmental regulations and using environmentally friendly technology;
5. Implementing energy management including and not limited to exploration, production, transportation, transmission and utilization of energy considering health, safety, and impact factors social while maintaining environmental functions;
6. Ensuring energy supply and utilization that ensures the prevention, reduction, mitigation and recovery of impacts, as well as fair compensation for the affected parties; and
7. Ensuring energy supply and utilization that minimize waste production, reuse of waste in the production process, and extract the elements still having benefits contained in the waste, and address the social, environmental and economic aspects.

B. Energy Conservation

The direction of the National Energy Policy related to energy conservation was to decrease primary energy intensity by 1% per year until 2025 and optimal primary energy mix in 2025 which is also accommodated in the National Energy Conservation Master Plan. The President issued the Presidential Instruction 13/2011 concerning Energy and Water Savings to all government institutions to:

1. Perform energy and water saving measures and innovations includes lighting and air conditioning (AC), electronic equipment, and others;
2. Implement energy and water saving programs and activities according to the Energy and Water Savings Policy that has been set;
3. Conduct socialization and encourage the

community to carry out energy and water savings; and

4. Establish task forces in their respective environments to supervise implementing energy and water savings.

C. Energy Diversification

1. Speeding up the supply and utilization of various types of new energy sources and renewable;
2. Prioritizing local energy resources in energy development;
3. Developing nuclear energy taking into consideration the security of national energy supply on a large scale;
4. Using renewable energy in electricity generation including from water, geothermal, ocean currents and wind;
5. Using biofuel for transportation and industry while still maintaining food security; and
6. Encouraging the utilization of marine energy sources by building a pilot as the first step to connect to the electricity network.

independency.

3. The development of public works and housing to improve productivity, efficiency and logistics system by improving national connectivity to achieve national competitiveness at the global level.
4. The development of public works and public housing to support basic infrastructure services to achieve good quality of Indonesians in line with the principle of 'infrastructure for all' that is accessible for people with disabilities, women, and other vulnerable groups.
5. The development of organizational resources to develop public works and public housing including human resources, control and supervision, secretariat as well as research and development to support the development of public works and public housing that are effective, efficient, transparent and accountable.

Climate adaptation is well integrated particularly in Strategies 2, 3, and 4 of the PUPR detailed above. For instance, the focus Strategy 2 is on water management to ensure communities have access to water for daily need and productive socio-economic need. This strategy considers the risks of climate change and vulnerability.



2.4.3 The Ministry of Public Works and Public Housing (PUPR)

The policy direction of the Ministry of Public Works and Public Housing (PUPR) in 2015-2019 was to develop public works and public housing to achieve food security, water security, energy sufficiency and connectivity between region to increase competitiveness. To achieve this, five main strategies of the PUPR were:

1. The development of integrated and sustainable public works and public housing that is supported by high quality construction industries to ensure equality between regions, particularly in disadvantaged areas, border areas, and rural areas.
2. The development of public works and public housing to achieve water security, food sovereignty, and energy security to promote domestic strategic sectors which can reduce women's workload, and to achieve economy



2.4.4 The Ministry of Industry (Kemenperin)

The policy directions related to climate change of the Ministry of Industry (Kemenperin) (2015-2019) were clustered around the development of green industries as the main focus. Green industries were defined as industries that ensure efficient and effective use of natural resources to achieve sustainability and provide benefits for people. The scope of the green industry initiative included:

- (i) developing standards on green industries;
- (ii) developing green industry certification bodies and the capacity of auditors to carry out audits according to the green industry standards; and
- (iii) developing facilities to achieve the green industry standards. The facilities provided can include fiscal and non-fiscal support, which consists of:
 1. Training to improve industrial human resources' competence and skill;
 2. Developing professional competency for human resources of private companies;
 3. Providing support for the physical facility development for small and medium companies, and
 4. Promoting the products of the green companies.

Strategies 3 and 4 above. Strategy 3 focuses on promoting the use of high yield seeds that are adaptive to climate change and environmentally friendly, while Strategy 4 aimed to improve farmer institutions so that they have the capacity to address the risks related to natural disasters, extreme climate change, pests that can result in crop failure (Strategy 4).

Specifically, on climate change, the Strategic Plan of Kementan clearly articulated the following:

1. Agricultural policies should prioritize climate adaptation without ignoring climate mitigation actions. Therefore, actions to reduce GHG emissions should at the same time promote the improvement in agricultural production and productivity.
2. Climate adaptation and mitigation should improve farmer welfare, including women farmers. All directorate generals should detail the adaptation and mitigation actions respectively to contribute to the achievement of the emissions reduction target as much as 26 percent in 2019.
3. Climate adaptation and mitigation actions must be locally specific and consider geographical conditions of each region, thus the applied technologies should adopt local wisdoms, including indigenous community traditions, as much as possible.



2.4.5 The Ministry of Agriculture (Kementan)

The Ministry of Agriculture (Kementan) had seven main strategies detailed in the Strategic Plan to strengthen agricultural development for achieving food sovereignty, as follows:

1. Increase the availability and the efficient use of lands.
2. Improve agricultural infrastructure and facilities.
3. Develop and expand seedling logistics.
4. Strengthen farmer institutions.
5. Develop and strengthen agricultural finance.
6. Develop and strengthen bio-industry and bio-energy.
7. Strengthen the market network of agricultural products.

Climate change was clearly integrated into

2.4.6 The 2020-2024 RPJMN

In the the 2020-2024 RPJMN, climate change has been strongly mainstreamed into the document. The technocratic draft of the RPJMN was developed based on the strategic environmental assessment (KLHS) to ensure the development in the next five-year period is moving towards the Low Carbon Development and the Roadmap to Achieve the 2030 Sustainable Development Goals (SDGs). The impacts of development in the five-year period have been assessed and safeguard policies on how to minimize the impacts on the environment have been identified through the KLHS.

The policy direction for national priorities related to the environment and climate change consists of (1) improving the environmental quality, (2) enhancing disaster and climate resilience, and (3) low-carbon development. The strategies for each of the national priorities aforementioned are as follows:



1. Improving the environmental quality

- **Preventing pollutions and damages to natural resources and the environment:**
(1) monitoring of the fresh water, sea water, and air quality, (2) provision of weather and climate information, (3) prevention of land and forest fires, (4) increase of public, private, and people's capacity and awareness, (5) prevention of biodiversity loss, and (6) and provision of data and information on biodiversity and ecosystem conservation.
- **Handling pollutions and damages to natural resources and the environment:**
(1) treatment of coastal and marine pollution, (2) reduction of domestic and plastic waste management, (3) abolishment and replacement of mercury in small scale gold mines, and (4) establishment of toxic and waste management facility.
- **Rehabilitation and restoration of degraded natural resources and environment:**
(1) peatland restoration, (2) land and forest rehabilitation, (3) restoration of ex-mining area, (4) rehabilitation of marine and coastal areas, (5) restoration of endangered species habitat, and (6) increment of the endangered species population.
- **Institutional strengthening and law enforcement in Natural Resources and the Environment (NRE):**
(1) strengthening the regulatory framework and the institutional setting of the NRE management, (2) strengthening of the licensing, monitoring and safeguarding of the NRE, and (3) law enforcement in the NRE management.



Enhancing Disaster and Climate Resilience

- **Disaster management:**
(1) strengthening data, information, & disaster literacy, (2) improving facilities for disaster management and spatial planning, (3) improving the infrastructure related to disaster prevention; (4) integrating the alignment of policies and spatial plan related to disasters, (5) strengthening emergency response and recovery, (6) implementing the rehabilitation and reconstruction in areas hit by disasters, and (7) strengthening mitigation of disaster risks comprehensively.
- **Improvement of climate resilience through the implementation of the climate change adaptation plan for priority sectors including:**
(1) climate resilience of the marine and coastal areas, (2) climate resilience in the water sector, (3) climate resilience in the agricultural sector through the use of geospatial information and data, and (4) health sector climate resilience.



Low carbon development

- **Sustainable energy development**
(1) the management of new and renewable energy, and (2) energy efficiency and conservation.
- **Sustainable land restoration**
(1) restoration and management of peatlands, (2) rehabilitation of forests and land, (3) reduction of deforestation rate, and (4) improvement of agricultural productivity and efficiency.
- **Waste management**
(1) reducing household waste and (2) managing liquid waste.
- **Development of green industry**
(1) conserving and auditing the use of energy in the industry, (2) modifying industrial process and technology, and (3) managing industrial waste.
- **Restoration of coastal and marine ecosystems, through stocktaking (inventory) and rehabilitation of marine and coastal ecosystems.**







Photo by GGGI Indonesia

03 **Financing Climate Change Priorities in Indonesia**

The latest estimation presented in the Second BUR document stated that around IDR 3,461 trillion (or USD 247.2 billion) is required to meet the emissions reduction target.

Estimations on the required financial resources to meet Indonesia's emissions reduction targets vary. The latest estimation presented in the Second BUR document stated that around IDR 3,461 trillion (or USD 247.2 billion) is required to meet the unconditional emissions reduction target. The estimation in the Second BUR is based on projected financial needs using the existing government expenditure together with the estimated financial needs for specific interventions in the waste and IPPU sectors which would be implemented by the private sector.

Based on Indonesia 2nd BUR, the agriculture, forestry and land use sector is responsible for 38% of the unconditional emissions reduction target and 37% of the conditional emissions reduction target by 2030. The

total cost required for meeting the conditional target from the forestry and land use sector is USD 5.6 billion, which shows that reducing emissions from the forest and land use sector is the most cost-efficient compared to other sectors. The financial resources required for the energy and transportation sector is accounted for 95% of the total financial resources needed to achieve the conditional target for the period of 2018-2030. In the energy and transportation sector, around USD 236.2 billion is required for developing renewable energy power plant and investments in clean technologies with the expected emissions reduction of 398 million tons CO₂e (Table 4).

TABLE 4 Financial Resources Needed to Finance Unconditional Emission Reduction Targets

Sector	Financial needs (billion IDR)	Financial needs (billion USD ¹)	Mitigation policies and programs
Forest and land use	77,824	5.56	Forest conservation/protection programs and forest and land fire prevention and suppression ² .
Energy & transportation	3,307,197	236.23	Mainly for the development of 48.9 GW renewable energy power plant and investments in clean technologies.
Industrial Processes and Product Use	40,774	2.91	Mostly for cement and steel industries (80% by private investment).
Waste	30,339	2.17	Solid and liquid waste management at household and industrial level. About 25% of the investment is by private particularly for liquid waste management.
Agriculture	5,175	0.37	Low-emission rice varieties, improving efficient irrigation, biogas utilization, and improved feed additives.
Total	3,461,309	247.24	

Source: Second BUR (2018) with correcting the errors on the conversion from IDR to USD and on the total BAU level of IPPU.

¹ Exchange rate USD 1 = IDR 14,000

² Cost of emission reduction per timber life-cycle is not included as well as cost of new technology that may occur at any stage of life cycle, and cost of peat management technologies.

3.1 Government Budget

In 2014, the Fiscal Policy Agency (BKF), under Ministry of Finance, has developed a system to track national government budget allocated for climate change. The system known as the Climate Budget Tagging enables government institutions to identify and to assess their expenditures related to climate mitigation actions. From this budget tagging process, total domestic fund allocated for climate change from 2016 to 2019 was ±IDR 373.5 trillion¹. This number points out that Indonesia has not met the required financial resources required for achieving climate targets based on the estimation presented in the Second BUR discussed above.

Table 5 summarizes the tagging results of seventeen ministerial and national institution budgets. The largest spending on mitigation and adaptation on climate change between 2016-2019 was done by PUPR (67.85% see Table 5), followed by Kemenhub (23.13%). Whereas, KLHK only spent IDR 10.4 trillion, or 2.78% of the budget tagging results. The proportion of budget allocated for the energy sector, which is the second largest contributor to efforts to reduce emissions in Indonesia, was also low between 2016 and 2019 (2.51%). These ministries and institutions also have identified gender responsive climate budget tagging. For example, Kemenhub tagged the construction and management of train supporting facility and ESDM tagged the construction of oil and gas network for household needs as gender responsive climate budget.

Bappenas' Vision 2045 projected the annual economic growth of 5.1% to 6% towards 2045 leading to per capita income of USD 19,794 to USD 28,934 per capita GDP by 2045. For the next five years, Indonesia plans to maintain the fiscal deficit-to-GDP ratio at 1.7% and the debt-to-GDP ratio at 30% to catalyze the economy while reducing the regional disparity and, keeping economic growth and emissions reduction in balance.²

Every year, there is a consistent budget allocation for climate change mitigation (3%-4%) depending on the annual fiscal capacity (Table 5). However, even if this consistency persists, there is a significant budget gap to achieve the NDC targets, because to achieve the conditional NDC targets, the annual budget required is around IDR 266.25 trillion annually from 2018 to 2030.

¹ The 2019 budget tagging value (as of 9th March 2020) is in its early draft. There are possibilities for the official 2019 budget tagging numbers to differ from what is stated in this report.

² Bappenas (2019). "Rancangan Teknokratik Rencana Pembangunan Jangka Menengah Nasional 2020-2024". Retrieved from https://www.bappenas.go.id/files/rpjmn/Narasi%20RPJMN%20IV%202020-2024_Revisi%2014%20Agustus%202019.pdf

TABLE 5 Budget Tagging Result

No.	Line Ministries	Total Funding Allocation (Million IDR)								
		2016 (Mitigation)	2017 (Mitigation)	2018 (Mitigation)	2018 (Adaptation)	2019 (Mitigation) ¹	2019 (Adaptation) ¹	2019 (Co-Benefit) ¹	Total	2016-2019 (Percentage of Total)
1	PUPR	43,234,865	51,950,662	50,384,545	35,518,396	33,797,741.41	36,865,299.58	1,684,407.54	253,435,917	67.85%
2	Kementan	4,265,519	5,381,320	442,133	231,206	2,224,420.41	279,011.36	-	12,823,610	3.43%
3	ESDM	2,173,738	2,844,122	2,597,812	350,926	1,414,957.64	-	-	9,381,556	2.51%
4	Kemenhub	21,004,368	34,233,514	16,595,644	-	14,556,557.60	-	3,075.57	86,393,159	23.13%
5	KLHK	1,619,702	1,132,136	2,179,936	1,122,757	1,054,957.87	431,911.78	2,854,581.30	10,395,982	2.78%
6	Kememperin	53,796	42,926	28,022	-	7,000.00	-	-	131,744	0.04%
7	BPPT	-	-	-	37078	8,624.93	3,000.00	-	48,703	0.01%
8	BIG	-	-	-	7300	2,640.00	-	-	9,940	0.00%
9	BMKG	-	-	-	139123	4,000.00	8,500.00	-	151,623	0.04%
10	KKP	-	-	-	87418	2,100.00	38,090.81	-	127,609	0.03%
11	Kemensos	-	-	-	-	127,946.02	-	-	127,946	0.03%
12	LPI	-	-	-	-	38,344.10	121,250.00	-	159,594	0.04%
13	BNPb	-	-	-	-	16,438.06	62,160.35	22,528.60	101,127	0.03%
14	Kemenparekraf	-	-	-	-	-	2,561.02	-	2,561	0.00%
15	BPS	-	-	-	-	-	196,503.77	-	196,504	0.05%
16	ATR/BPN	-	-	-	-	-	-	4,200.00	4,200	0.00%
17	LAPAN	-	-	-	-	-	5,394.12	9,887.76	15,282	0.00%
Total		72,351,988	95,584,680	72,228,092	37,494,204	53,255,728	38,013,683	4,578,681	373,507,056	100%

¹ The 2019 budget tagging value (as of 9th March 2020) is in its early draft. There are possibilities for the official 2019 budget tagging numbers to differ from what is stated in this report.

Source: Recapitulation of Budget Tagging (Ministry of Finance)

3.2 Private Sector



High-Efficient Old Corrugated Cartons Processes at Paper Factory
Source: Global Environment Center Website

Aside from the government, the private sector has also contributed in making the transition to a low-carbon economy. However, there is no existing centralized database regarding the private sector's contribution to addressing climate change issues in Indonesia. Several projects, which have received support from the Clean Development Mechanism (CDM) and the Joint Crediting Mechanism (JCM) between Japan and Indonesia, can provide a glimpse of numerous initiatives implemented by the private sector. The JCM, which aims to facilitate the diffusion of leading low-carbon technologies, systems, services and infrastructure, provides financing for entities to reduce CO₂ from building, equipment and vehicles.

Private companies are generally facing many challenges to transform towards low carbon economy in the production of goods and services. The challenges are discussed as follows:

- **The concept of “green industry” has not been adopted widely by enterprises in the country.** Enterprises in Indonesia are dominated by small

and medium enterprises (SMEs). The proportion of the SMEs as compared to the big enterprises is around 99% in terms of the total units or around 60% of the total contribution to the national GDP. SMEs tend to operate in a more conventional way with little knowledge of sustainable practices. Large corporations, while having a better understanding on the issue, typically still operate with a standard business model or use old technologies for the reason of lower investment cost. The adoption of green technologies that has been piloted in many projects should be further accelerated through public education and providing incentives such as tax holidays and low interest loans.

The Government of Indonesia has introduced several fiscal incentives to promote the adoption of renewable energy and other green technology. The Minister of Finance Regulation No. 150/PMK.010/2018 stipulates tax holiday for pioneer industries including renewable energy. This recent regulation is complementary to the previous regulations providing tax incentives for geothermal

development. Following the implementation of various fiscal incentives introduced since 2010, there is a need to carry out a review of the incentives introduced through an active consultation with companies to improve their effectiveness.

- **The financial and capital market have not been providing companies with sufficient financing for green projects or investments.**

Several issues related to the financial and capital market include as follows. First, there is only a very limited number of companies that have access or financed by bank loans or other financial-market products. Majority of enterprises in Indonesia are still internally funded so their exposure to green financial products available in financial market will be low. Second, for those enterprises currently accessing financial market, most of the companies rely on bank loans, instead of the other financial-market instruments. This again limits the exposure of companies to external green funding available in the financial market as green financing from bank loans only makes up less than two percent of total banking loans in the country.¹ Third, the capital market in Indonesia is still at the infant stage.

Therefore, mechanisms that allow firms to obtain green investment funding from the public is also absent from the market. Equity market through stock exchange are mostly used to raise conventional (non-green) investment and the regular bond market for companies is still very thin. Green-bonds are not yet popular among companies in Indonesia despite the great potential currently available. For example, infrastructure companies could issue green bonds to finance project that meets the criteria of carbon emission reduction. The state-owned electric company (PLN) could issue green bonds to finance renewable power generation projects, and banks could also issue green bonds as a source of loans for green projects. Specific for green bonds, Pefindo

argues that limited track record of repayment and investment return are the main reasons for lack of presence of the bonds in the market.²

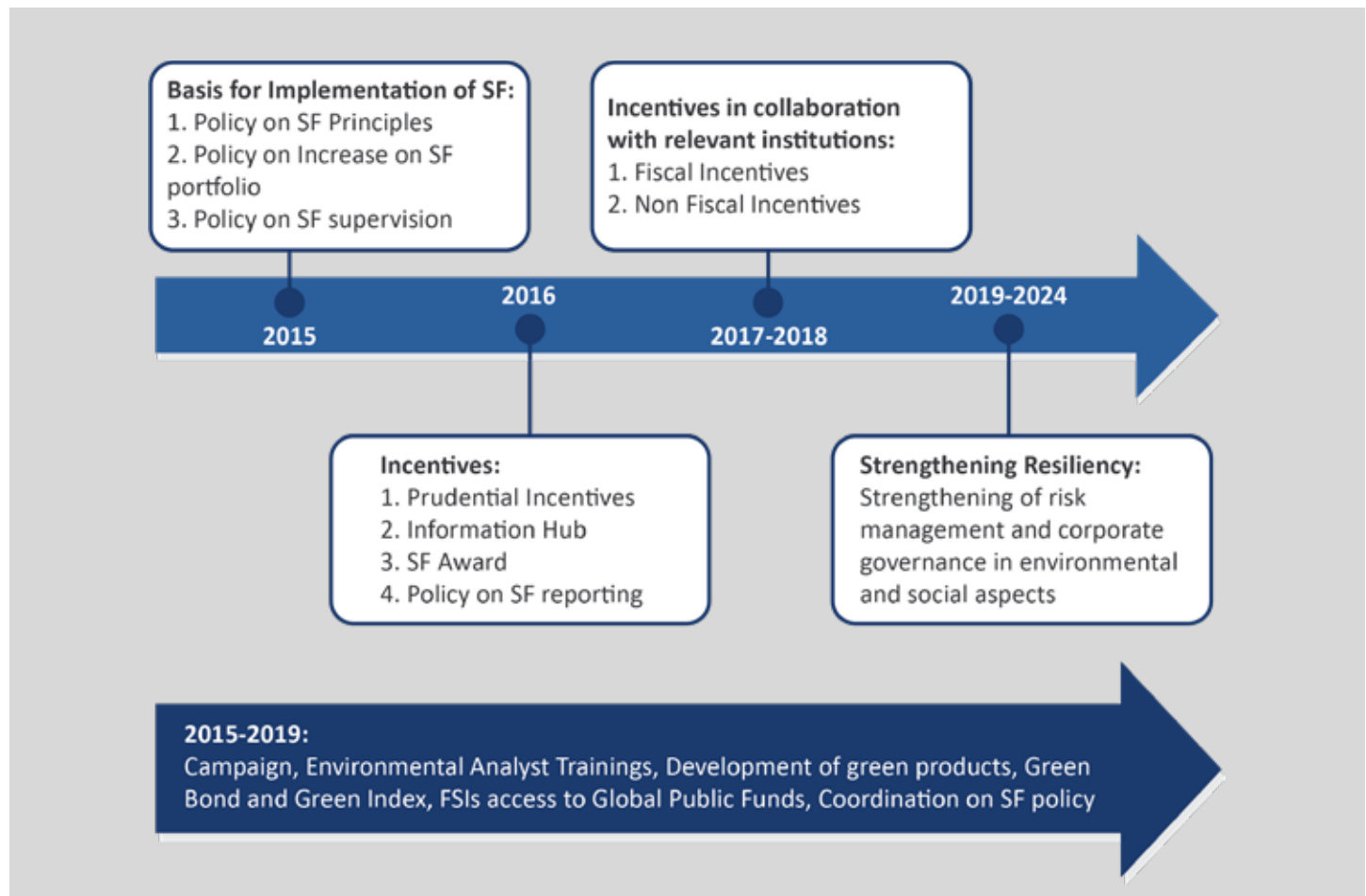
To address the major challenges described above, the national regulatory body in financial sector, known as Otoritas Jasa Keuangan (OJK), has introduced a roadmap to develop green investment in the financial and capital sector in Indonesia – namely the ‘Roadmap for Sustainable Finance in Indonesia 2015-2019’. The roadmap details the workplan to achieve the sustainable finance program for the financial service industry as governed under the authority of the OJK, namely the banking, capital market and non-banking financial service industry sectors (Figure 7).³ The targets set by the roadmap include:

- increased supply of environmentally friendly financing by providing incentives, including fiscal incentives, and capacity building to financial services institutions;
- increased demand of environmentally friendly financing products by campaigning and public education on green financial products, covering all aspect of the products. This is expected to overcome limited understanding from the business community not only on the potential of green projects, but also on the risk assessment and mitigation of such projects; and
- increased oversight and coordination of sustainable finance implementation.

¹ Houerou, Philippe Le (2018, August 2). “A Catalyst for Green Financing in Indonesia”. Retrieved from <https://www.jakarta-post.com>

² Amanda, Putri (2019, February). “Green Bonds in Indonesia: Prospects and Challenges”. Retrieved from www.pefindo.com

³ Otoritas Jasa Keuangan (2014). “Roadmap for Sustainable Finance in Indonesia 2015-2019”. Retrieved from www.ojk.go.id

FIGURE 7 Roadmap for Sustainable Finance

Source: Roadmap for Sustainable Finance in Indonesia (2015)

Abbreviation: SF = Sustainable Finance

3.3 International Support in Climate Finance

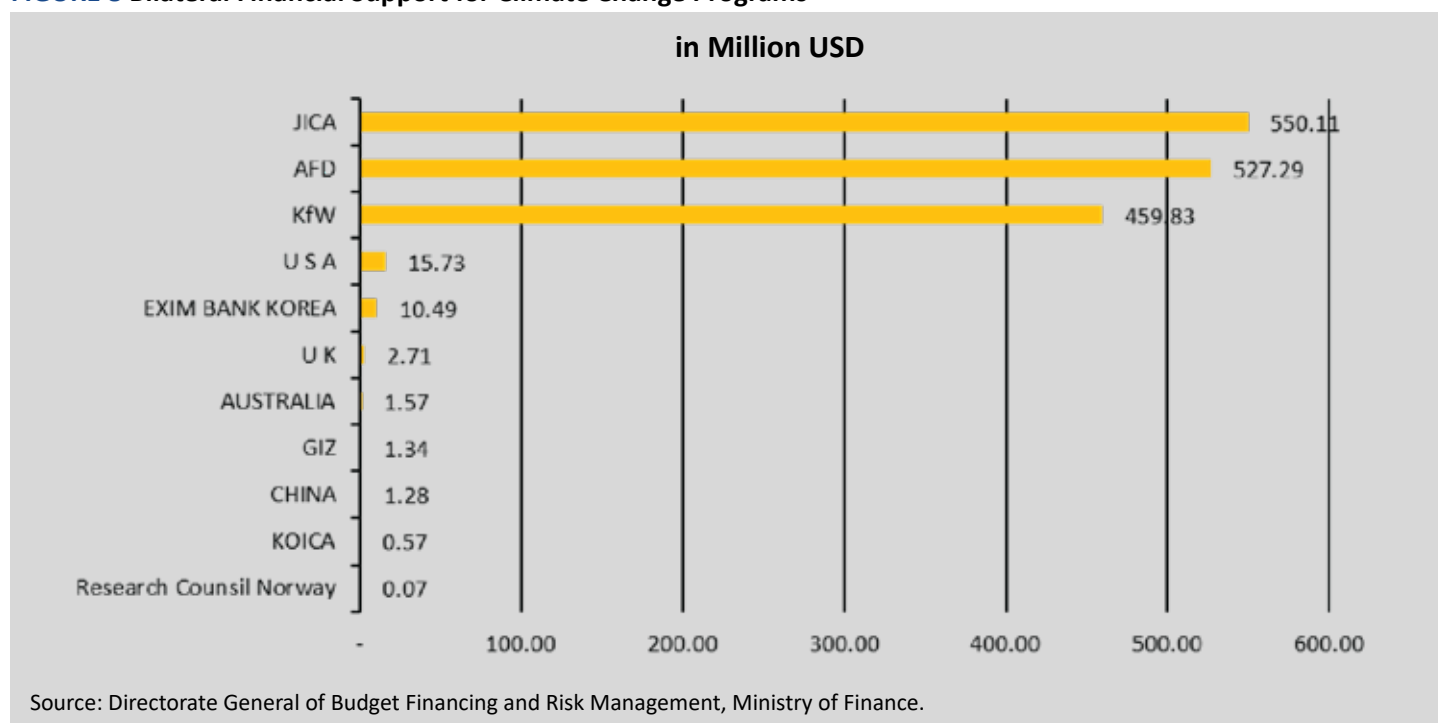
Within the period of 2016-2019 with a cut-off date of November 15th, 2019, Indonesia has received USD 3,102.80 million, 51% from bilateral and 49% from multilateral cooperation. As much as 97% of the funding was received as loans; meanwhile, only 3% was received as grants. The concessional loans were classified as domestic finance, hence, USD 2,282 million was used to achieve the unconditional emission reduction targets for mitigation, USD 428 million for adaptation, and USD 392.6 million for cross-sector. Energy and transportation sectors received 72% (USD 2,231 million) of the financial support from the bilateral and multilateral cooperation in 2016-2019, meanwhile forestry, waste, and agriculture for mitigation received a small portion of 2% out of the total. Water security, agriculture water irrigation, marine, and agriculture were the sectors for the portion of climate adaptation support received.

In realization, Indonesia received a total of USD 1,571 million of financial support in 2016-2019 from bilateral agreements, with the highest contribution from JICA Japan, followed by AFD France and KfW Germany. Figure 8 displays the bilateral financial support for

climate change in 2016-2019. Around USD 1,495 million of the financial support through bilateral was in the form of a concessional loan. The loan was spread to over six sectors, which were energy (USD 614 million), transportation (USD 446 million), multi-sector programs (USD 373.15 million), waste (USD 13.28 million), water (USD 40.40 million), and agriculture water irrigation (USD 8.45 million). The rest of the funds (USD 76.06 million) were received as grants and were allocated for forestry (USD 23.16 million), water (USD 30.24 million), transportation (USD 2.38 million), waste (USD 2.8 million), agriculture (USD 0.07million), and multisector (USD 14.4 million).

The total financial support provided based on the realization of multilateral agreements was USD 1,532 million in 2016-2019, with the highest contribution coming from IBRD World Bank Group, and followed by Asian Development Bank (ADB). From the multilateral funds, USD 1,503 million was in the form of a concessional loan, and the rest of USD 29.24 million was in a form of grants. The multilateral concessional loan was used to finance the energy sector (USD 1,160 million), water

FIGURE 8 Bilateral Financial Support for Climate Change Programs



Abbreviation: KfW (Kreditanstalt für Wiederaufbau), GIZ (Gesellschaft für Internationale Zusammenarbeit), EXIM Korea (The Export-Import Bank of Korea), MCC (Millennium Challenge Corporation), JICA (Japan International Cooperation Agency), AIF (ASEAN Infrastructure Fund).

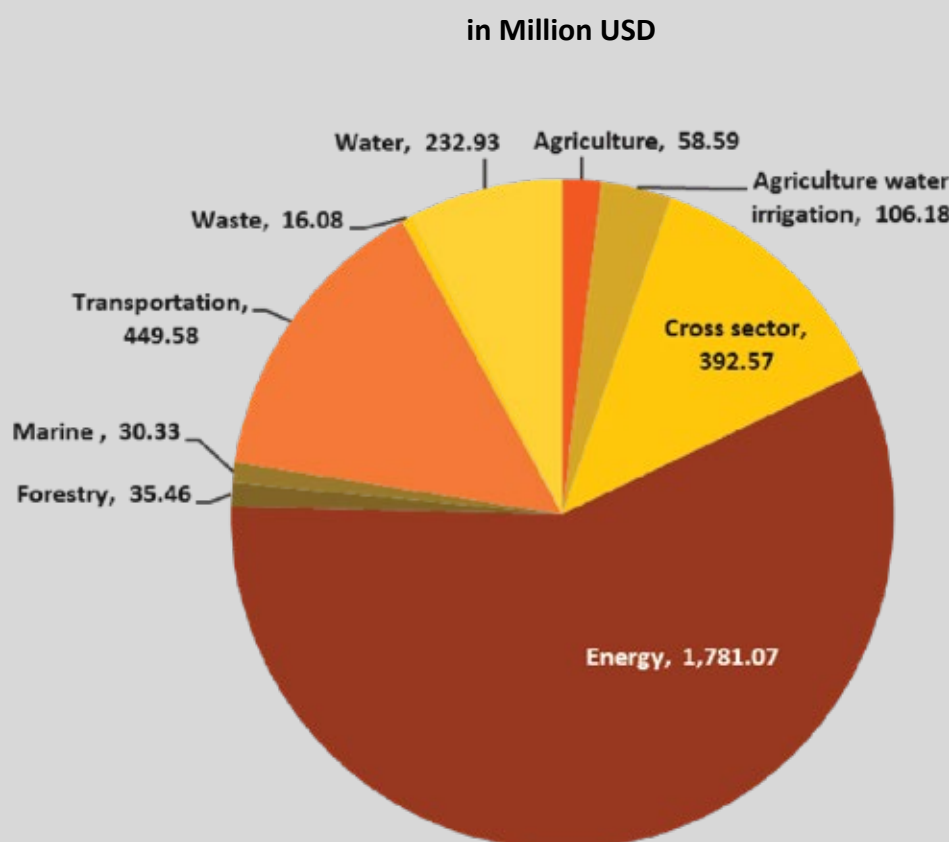
sector (USD 160 million), agriculture (USD 58.52 million), agriculture water irrigation (USD 97.79 million), and the marine sector (USD 26.73 million). As for the multilateral grants, the funds were mainly allocated for the forestry sector (USD 12.3 million), energy (USD 7.7 million), marine (USD 3.6 million), water (USD 2.37 million), and transportation (USD 1.25 million). The rest of the grants were multi-sector programs (USD 2.01 million).

International financial support received during the period 2016 – 2019 consists of climate mitigation for USD 2,282 million, climate adaptation for USD 428 million, and cross-sector multiprogram for USD 392.57 million.

Similar to the domestic spending shown by the budget tagging results, the international climate finance

from multilateral support was predominantly allocated for the energy, transportation, and cross-sectors. Figure 9 depicts the composition of international support for climate change programs by sector. Total support in 2016-2019 for the energy sector was USD 1,781 million, followed by transportation with support of USD 450 million, cross-sector multi-program with support as much as USD 392.57 million, and water with USD 233 million. The rest of the funding (USD 200.32 million) was for the water sector; USD 106.18 million for the agriculture climate irrigation and USD 106.18 million for agriculture water irrigation. The rest was distributed for agriculture sector (USD 58.52 million), forestry (USD 35.46 million), marine (USD 30.33 million), and waste (USD 16.08 million).

FIGURE 9 2016-2019 International Support by Sectors



Source: Directorate General of Budget Financing and Risk Management, Ministry of Finance.

3.4 Indonesia Environmental Fund Agency

In 2017, Government Regulation No 46/2017 was issued to stipulate the use of economic instruments for managing the environment. This Regulation is also important for managing climate finance as it provides a legal basis for the government to establish environmental funds.

Several environmental funds that are stipulated under the Regulation include: i) environmental rehabilitation bond; ii) pollution control and environment rehabilitation fund and: iii) conservation fund. In 2018, the President issued the Regulation No. 77 of 2018 to Indonesia Environmental Fund Agency, or known as Badan Pengelola Dana Lingkungan Hidup (BPD LH) as a Service Delivery Unit (*Badan Layanan Umum*) under the Ministry of Finance. The Steering committee of the Board is chaired by the Coordinating Ministry for Economic Affairs and co-chaired by the Ministry of Environment and Forestry with the following members: Ministries of Finance, Home Affairs, Energy and Mineral Resources, Transportation, Agriculture, National Development

Planning, Industry, Marine and Fisheries (Figure 11). A custodian bank can be appointed as a trustee to manage the funds.

Different sources of fund that can be accessed by BPD LH for its fundraising strategy are national and local government budget including from environmental taxes and retributions, grants and donations (Figure 10). The fund collected can be further invested in banks, capital markets and other financial instruments established by the regulations. Furthermore, BPD LH can distribute the fund using different mechanism such as domestic carbon trades, loans, subsidies, grants, and other mechanisms as long as it is stipulated in the regulations.

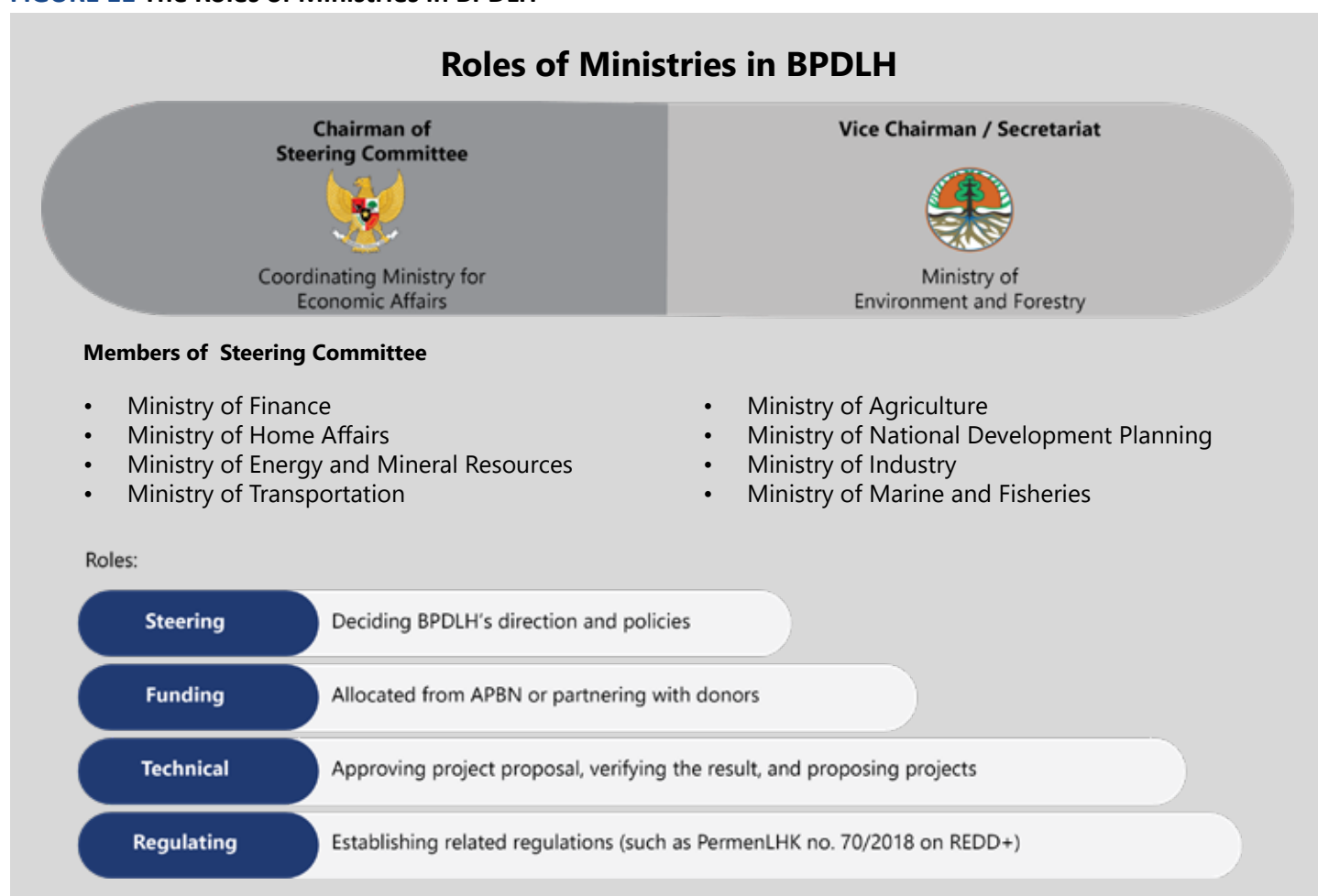
Under the BPD LH, several funding windows will be established including on climate change. Under the climate change window, a mechanism will be developed to coordinate the management of REDD+ funding from various sources to improve efficiency, effectiveness and coherence.

FIGURE 10 Design of the BPD LH according to Presidential Regulation 77/2018

Type of Funds	Pollution and/or environmental damage response and rehabilitation fund. The fund can be collected from the national and local government budget, and other sources in accordance with prevailing laws and regulations, including from environmental taxes and retributions.
	Trust Fund or Conservation Assistance Fund. Fund can be obtained from grants or donations including for natural resources conservation, natural resource reserves, and atmospheric function protection.
Investment Instruments	Banking instruments
	Capital market instruments
	Other financial instruments as stipulated by regulations
Distribution of Fund	Domestic carbon trade
	Loans
	Subsidies
	Grants
	Other mechanisms as stipulated by regulations

Source: Presidential Regulation 77/2018

FIGURE 11 The Roles of Ministries in BPDH



Source: Presidential Regulation No. 77/2018, Coordinating Ministry of Economic Affairs (2019)





04 **Priorities for Green Climate Fund**

The GCF should be used strategically to achieve Indonesia's climate mitigation and adaptation targets.

The GCF can potentially contribute to finance climate actions to achieve the NDC targets. The current portfolio of the GCF funding in Indonesia is USD 110.8 million ranging for 10-20 years¹. This amount is reasonably low compared to other countries. As a comparison, Brazil, for instance, obtained around USD 195 million for climate mitigation and adaptation project. Moreover, the largest project size financed by the GCF is up to USD 378 million for the GCF-EBRD Sustainable Energy Financing Facilities, which is allocated for three regions within 15 years. Around 90% of GCF contribution to this GCF-EBRD project is in a form of loan, and 10% as grant.

The financial instruments of the GCF projects are 75% loans, and 25% grant on average. At the global level, there is no agreement on how grants or loans from international climate finance will be recorded and accounted. In-country discussions propose that the GCF fund will be counted as contributions to achieve the unconditional emission reduction (29%) target only when they are received as loans. When the GCF fund is received as a grant, it could contribute to the achievement of the conditional emission reduction (41%) target, although it is unclear how the result-based payment or REDD+ would be counted at the moment. When determining the priorities for the GCF, this document adopts this proposition.

In Indonesia, three projects that are currently financed by the GCF are: Bus Rapid Transit Development in Semarang, Geothermal Resource Risk Mitigation and Climate Investor One² (Figure 12). If Indonesia could triple its GCF portfolio, for instance, the amount is still relatively insignificant compared to the total climate

public expenditure presented in Table 6 above. The potential resource that may be accessed under the GCF is only 3% as compared to the government climate change budget (budget tagging results). Therefore, the GCF should be used strategically to achieve Indonesia's climate mitigation and adaptation targets.

This section is divided into two parts. The first part explains about several important considerations for prioritizing the GCF funding over other sources and for selecting priority thematic areas identified by stakeholders (Subsection 4.1). The second part of this section (Subsection 4.2) details the criteria that will be used by the NDA to screen project concepts that will be submitted to the GCF. The considerations and criteria presented in both subsections below were developed based on in-depth interviews and focus group discussions with relevant stakeholders as well as the analyses on the secondary data collected related to climate finance and climate actions in Indonesia. Furthermore, the recommendations presented in this section rely on the present situation including national spending on climate change. The strategic direction of national development and spending may change over the years, therefore, the priority sectors financed by the government budget on climate change may also vary over time. This situation emphasizes the need to treat this Country Programme Document as a living document that should be revisited regularly.

There are eight result areas of the GCF which are categorized into mitigation and adaptation clusters. On the mitigation cluster, four result areas include: (i) low-emission energy access and power generation; (ii) low-emission modes of transport; (iii) buildings, cities,

¹ Retrieved from GCF's website as of November 2019

² Climate Investor One is a multi-countries finance facility project aiming to provide financing for the development of renewable projects in countries with power deficits. These countries are Burundi, Cameroon, Djibouti, Indonesia, Kenya, Madagascar, Malawi, Mongolia, Morocco, Nigeria, Uganda.

industries and appliances; (iv) land use, deforestation, forest degradation, and through sustainable management of forests and conservation and enhancement of forest carbon stocks.

On the adaptation cluster, four result areas include: (i) livelihoods of people, communities and regions; (ii) health and well-being of people, food and water security; (iii) infrastructure and built environment; (iv) ecosystems and ecosystems services.

The GCF also recognizes the importance of gender in terms of impact and access to climate funding. Through GCF's gender equality policy³, GCF commits to enhance gender equality within its governing structure and day-to-day operations and to promote the goals of gender equality and women's empowerment through

its decisions on the allocation of funds, operations and overall impact.

The objectives of GCF's gender policy are to: (i) support climate change interventions and innovations through a comprehensive gender-responsive approach, applied both within the institution and by its network of partners, including accredited entities (AEs), national designated authorities (NDAs) and focal points, and delivery partners for activities under the GCF Readiness and Preparatory Support Programme; (ii) promote climate investments; and (iii) reduce the gender gap resulting from climate change exacerbated social, economic and environmental vulnerabilities and exclusions through strategic climate investments that mainstream gender equality issues.

FIGURE 12 GCF Projects in Indonesia



³ Green Climate Fund (2019). "Updated Gender Policy and Action Plan 2019-2021". Retrieved from https://www.greenclimate.fund/documents/20182/1424894/GCF_B.22_06_-_Updated_Gender_Policy_and_Action_Plan_2019_2021.pdf/615cc0e0-4582-28f4-083a-43f12657ea24



Photo from GCF Website

Geothermal Resource Risk Mitigation

A facility for de-risking geothermal exploration in Indonesia.

Financing

GCF	: USD 100 million
Total	: USD 410 million

Accredited Entity

World Bank



Photo by GGGI Indonesia

Bus Rapid Transit in Semarang

A Project Preparation Facility to develop new routes and add green buses to the existing BRT system.

Financing

GCF	: USD 788 thousand
Total	: USD 1.26 million

Accredited Entity

PT. Sarana Multi Infrastruktur

Source: NDA GCF Indonesia (2019)

4.1 Priorities for the GCF

This sub-section proposes climate priorities that can be financed by the GCF. First, it presents the list of important considerations that should be taken into account for Indonesia when prioritizing the GCF funding as compared to other sources of funding. The list of important considerations was developed based on expert judgement and inputs from stakeholder consultations and interviews. Second, this sub-section also describes the list of priority themes that can be financed by the GCF. The priorities were selected based on those defined by the stakeholders particularly in the formal government documents such as the national communication with UNFCCC and also national as well as sectoral planning documents. Stakeholders were also invited to provide their priority climate actions, which was further categorized into the priority themes based on the climate priorities listed in the national documents (Figure 13 and 14). For climate mitigation, the NDC has provided clear targets for relevant sectors. However, no specific target set for climate adaptation specified in the NDC document. Hence, the discussion on the priorities are separated between climate adaptation and mitigation priorities.

Based on the technical assessment of the documents and discussion with the stakeholders, several considerations could be taken into account by the NDA when selecting climate projects or programs to be financed by the GCF. From the mitigation aspect, they are: cost-effectiveness, financial gap, and mitigation beneficiaries. While from the adaptation aspect, they are: vulnerability of provinces and adaptation beneficiaries.



Regardless of the sector, GCF should be prioritized for financing projects or programs involving cutting-edge and capital intensive technologies.

Cost-effectiveness

The emissions reduction actions in the forestry and land use sector are considered as the most cost-effective compared to other sectors. The forestry and land use sector can also contribute to the achievement of the emissions reduction target faster than the other sectors. The government can therefore finance climate mitigation actions in the forestry and land use sector to achieve the unconditional targets using the government budget.

As discussed before, the GCF contribution to achieve the unconditional emissions reduction (29%) target should be received as loans. The GCF can contribute to promote green investments that require soft-loans such as in the agricultural and forest downstream industries to reduce the pressure on standing forests. It is also important to make sure that the interest rate coming from the soft-loan is 'lower enough' to make the return of the project more attractive, or at least equally attractive, than without the GCF.

Given that the cost of green technology could vary by industries/sectors, it is crucial to consider a varying soft-loan interest rate by industries/sectors. Stakeholders believe that the GCF can finance activities that involve cutting-edge and capital intensive technologies. Hence, the energy sector, although not cost-effective, can also be considered to receive the GCF funding.



GCF should be allocated to high priority sectors with significant financing gap such as the energy sector.

Financial Gap

The energy sector requires the greatest financial allocation for achieving the national emission reduction target, followed by the forestry and land-use sector (Table 6). However, the government budget allocated for climate action is not proportionately distributed according to the emissions reduction target or the financial need per sector. PUPR was the largest spender on the mitigation budget tagged in the Climate Budget Tagging between 2016-2018 (61%), and then followed by Kemenhub (30%). Whereas, KLHK and ESDM contribute only less than 5% respectively between 2016 and 2018. The GCF fund can therefore focus on financing activities in the energy sector to close the financial gap as detailed in Table 6. Indonesia can promote the private sector to access soft-loans from the GCF to achieve sustainable energy sufficiency.



Private sector should be prioritized to access the loan which will be accounted for achieving the unconditional emission reduction target.

Mitigation Beneficiaries

As discussed previously, financial support from the GCF will be counted as the contribution to achieve the unconditional emissions reduction (29%) target when it is received in the form of a loan. Grants received for climate mitigation will be classified as contribution to the achievement of the conditional target. Hence, Indonesia can focus on accessing loans for climate mitigation to prioritize the achievement of the unconditional emissions reduction target by 2030.

To access loans, private actors should be encouraged to access the GCF fund as they will have the capacity to generate revenues for loan repayment. In addition, potential grantees should consider gender and social inclusion aspects in accordance to the GCF Gender Policy, GCF Indigenous People Policy, and GCF Environmental and Social Safeguards. GCF can be used to encourage private firms to undertake green projects by subsidizing the market interest rate—and hence providing soft-loan scheme for the firms. The extent of the funding from GCF varies by sectors according to the green technological variation across the sectors.

Table 6 provides the illustration on how the above considerations based on the data extracted from the 2nd Biennial Update Report and the Ministry of Finance's budget tagging analysis.

Considering the analysis, Indonesia can prioritize accessing loans for climate mitigation projects in relevant sectors, which will be accounted as domestic resources to achieve the unconditional emissions reduction targets (Table 6). Loans can be accessed for companies particularly to access cutting-edge and capital-intensive technologies. When accessing grants under the GCF, the priority should be given to innovative

projects particularly to achieve the conditional emissions reduction target.

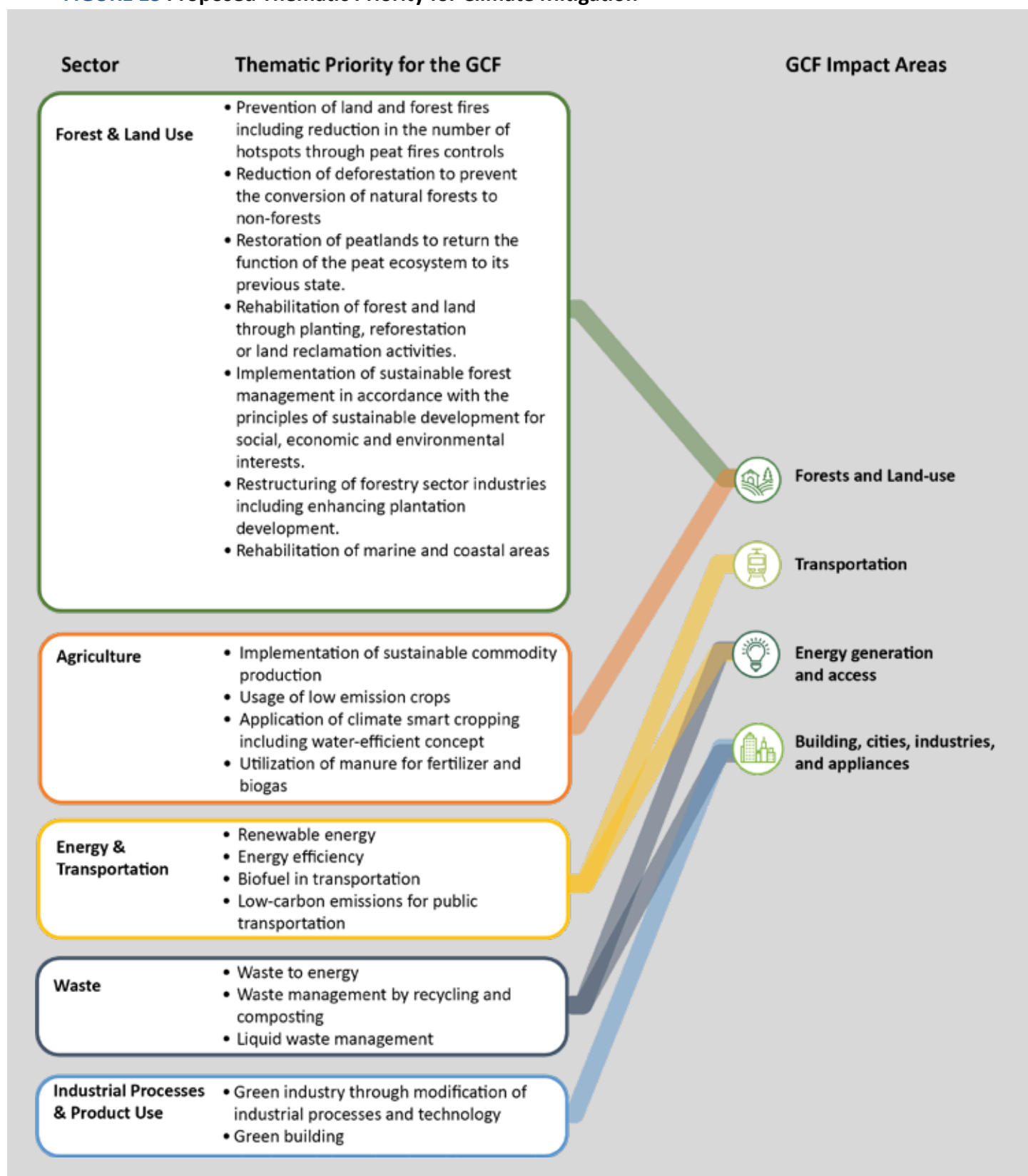
Figure 13 proposes the thematic priorities for climate mitigation that can be financed by the GCF. The sector listed in Figure 13 is based on the five major sectors listed in the NDC document. The thematic priority was then developed based on the list of actions in the NDC combined with the list of project or programs that are proposed by the relevant stakeholders. The themes proposed in Figure 13 are general enough to ensure to cover many relevant activities, projects or programs.

TABLE 6 GCF Priorities for Climate Mitigation

Sector	Target (Mton CO ₂ e)		Benchmark Price	Cost and Required Fund ¹		Government Spending (2016-2019)
	Unconditional	Conditional		Domestic Resources	International Support	
Forest & Land Use	479	53	Most cost effective: USD 8 per tonCO ₂ Eq	IDR 59 trillion	IDR 18 trillion	IDR 10.4 trillion together with waste by KLHK
Energy & Transportation	314	84	Most expensive: USD 594 per tonCO ₂ Eq	IDR 2,609 trillion	IDR 698 trillion	IDR 9.4 trillion by ESDM and IDR 86.4 trillion by Transportation Ministry
Waste	11	15	Most expensive: USD 82 per tonCO ₂ Eq	IDR 13 trillion	IDR 17 trillion	Included in KLHK
Agriculture	9	5	Most expensive: USD 26 per tonCO ₂ Eq	IDR 3.3 trillion	IDR 1.8 trillion	IDR 12.8 trillion
IPPU	2.75	0.25	Most expensive: USD 952 per tonCO ₂ Eq	IDR 34 trillion	IDR 6 trillion	N/A

¹ Exchange rate USD 1 = IDR 14,000
Source: 2nd Biennale Updated Report

FIGURE 13 Proposed Thematic Priority for Climate Mitigation



The proportion of the GCF funds allocated for mitigation and adaptation activities should be equal as suggested by the GCF. Currently, the NDA has also provided NOL or received project concepts for one climate adaptation projects from a total of 12 projects, while three other projects have both mitigation and adaptation benefits. The NDA can encourage more project proposals on climate adaptation to be submitted to the GCF. Different to climate mitigation, the NDC however does not provide specific details on climate adaptation actions and targets.

articulated explicitly in the NDC document is the Special Areas Resilience. The theme includes the sub-sectors of urban area and coastal as well as small islands area. These sub-sectors seem to be integrated into the social and livelihoods resilience theme. Both RAN-API and NDC documents include a specific theme on the supporting system, although specific explanation provided for the supporting system theme between the two documents vary. Since the GCF cannot finance activities listed under the supporting system theme, it was therefore excluded from Figure 14.

The thematic priorities listed in the NDC and the RAN-API are summarized into Figure 14. Similar to the climate mitigation, the thematic priorities for climate adaptation also rely on technical review of government documents and also list of climate actions submitted by the stakeholders to the NDA. The three themes listed in Figure 14 refer to the NDC including: economic, social and livelihoods, ecosystem and landscape. One theme included in the RAN-API document that is not



Vulnerable regions (in accordance with the vulnerability index), underdeveloped, remote, and frontier regions should be prioritized for adaptation programs.

Vulnerability of Provinces

Geographically, localities in Indonesia have different capacity to adapt to climate variability and climate change. Some provinces have more vulnerable villages as compared to others (Figure 5). The vulnerability index, issued by KLHK (2015), is measured based on the exposure and sensitivity of villages to climate change and variability in Indonesia and also the capacity villages to adapt to the impact of climate change.

Indonesia can prioritize the GCF to finance climate adaptation activities in the vulnerable provinces. However, it is also important to consider the fiscal capacity of the district and provincial governments as some provinces such as Riau has higher capacity as compared to others, while Papua, West Papua and Aceh have received special grants from the national government at the moment. Other regions that should also be prioritized are the under-developed, remote and frontier regions, or known as *daerah tertinggal, terdepan dan terluar (3T)*.



The beneficiaries should include communities, local government, and CSOs as well as companies assisting communities. In this respect, CSOs should be allowed to access grants for micro and/or small projects.

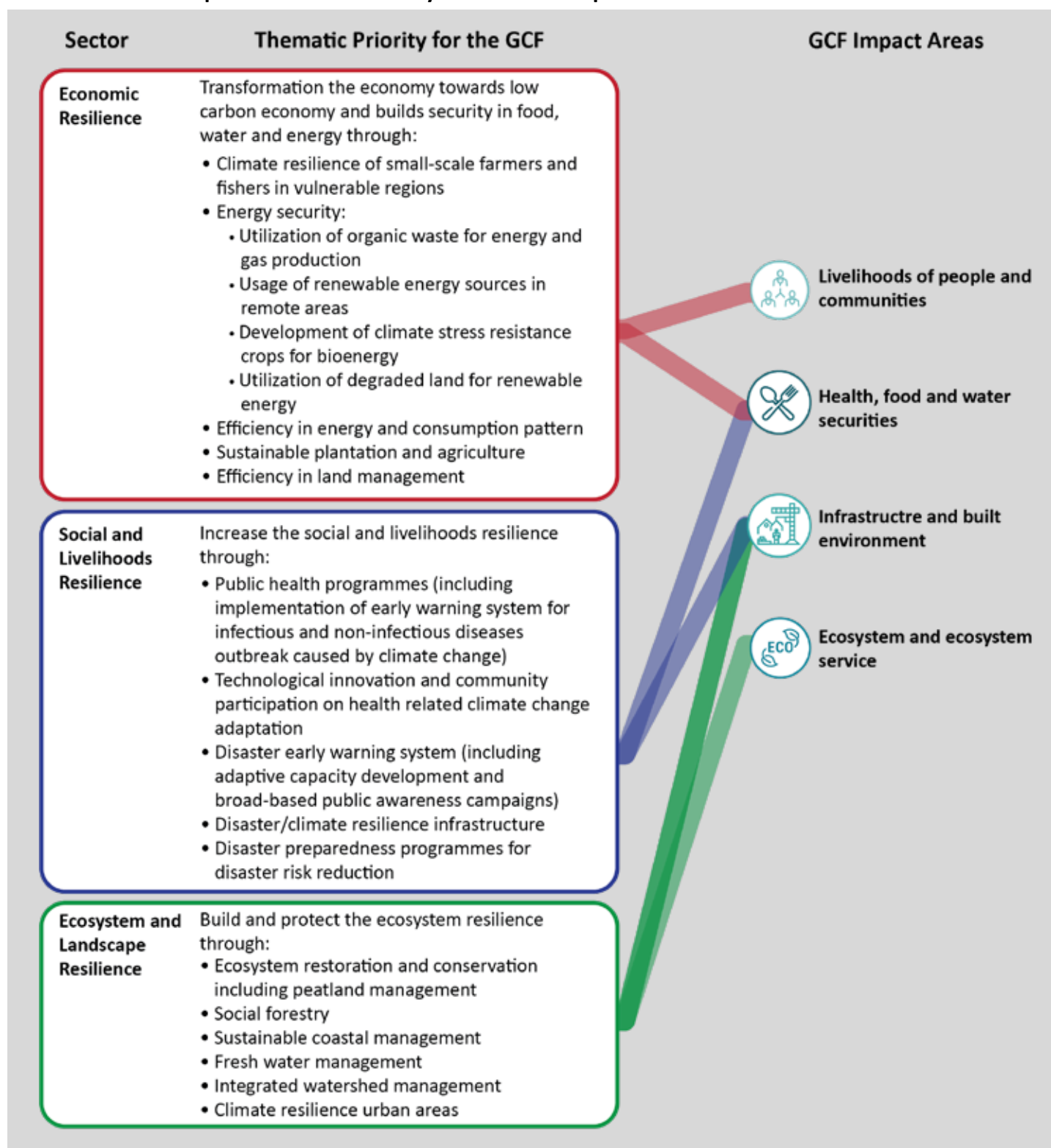
Adaptation Beneficiaries

For climate adaptation, most activities should take place at the local level to build resilience economy, livelihoods and ecosystems, including for women, indigenous people, people with disabilities, and other vulnerable groups. The transformation should be manifested directly in communities' livelihoods and housing, infrastructure, food production and others. Hence, the GCF fund should also be accessible for local communities that include women's group and other vulnerable groups, local governments, and CSOs whose roles often are to assist local communities and government in making real transition to adapt to climate change and variability. In particular, CSOs involved in community assistance for women farmer group, women of Family Welfare Empowerment (PKK), activity-based women group, and indigenous people.

For climate adaptation projects, Indonesia should consider accessing grants from the GCF, instead of loans. CSOs can also be allowed to access grants under the GCF for climate mitigation actions that also have climate adaptation benefits. Instead of accessing the medium to large projects,¹ the CSOs can access micro and/or small projects. The small-medium and or state-owned enterprises can be encouraged to access the fund to implement projects at the subnational level, in cooperation with district level governments, for instance. These entities are currently facing significant challenges in terms of resource mobilization for financing climate actions.

¹ Four categories of institution are established based on institutional financial capacity: (1) Micro (IDR 8.8 billion, or USD 10 million); (2) Small (> IDR 8.8 billion up to IDR 440 billion, or USD 50 million); (3) Medium (>IDR 440 billion up to IDR 2,200 billion, or USD 250 million); (4) Large (>IDR 2,200 billion) (Exchange rate assumption: 1 USD= IDR 8,800 (GCF Guide-line document: Annex VI. Policy on fees for accreditation of the Fund)

FIGURE 14 Proposed Thematic Priority for Climate Adaptation



4.2 GCF Investment Criteria in the Indonesia's Context

The GCF Secretariat provides a list of GCF investment criteria that will be used to assess the proposals submitted. The investment criteria can also help the project proponents to understand the expected performance of projects and programmes that will be financed by the GCF. There are six criteria included as the Investment Criteria: Impact Potential, Paradigm Shift Potential, Sustainable Development Potential, Needs of Recipients, Country Ownership, and Efficiency and Effectiveness. In the context of Indonesia, the NDA

together with stakeholders have agreed to use the same criteria to assess that will be later be proposed to the GCF by project proponents. Several adjustments were however made to the investment criteria taking into account Indonesia's specific situation. The adjusted criteria are only for the purpose of assessment by the NDA. The AEs are still required to address the GCF criteria in Concept Note/Funding Proposal in accordance to GCF standards. The agreed criteria are discussed below.



1. Impact Potential

The main important indicators to measure the impact potential of a project or program according to the GCF Investment Criteria are:

- a) Climate mitigation actions: Total tons of CO₂e to be avoided or reduced per annum
- b) Climate adaptation actions: Expected total number of direct and indirect beneficiaries and number of beneficiaries relative to total population (e.g. total lives to be saved from disruption due to climate-related disasters)

Both indicators can be applied to Indonesia's contexts with specific adjustments including:

- Climate mitigation actions: the potential emissions reduction measured by ton CO₂e. Measuring the exact emissions reduction target and realization may be difficult, so the estimation or potential reduction should be sufficient for the project proponent.
- Climate adaptation actions: number of household or population as the beneficiaries of the project or program disaggregated by gender.



2. Paradigm Shift Potential

In terms of paradigm shift, there are several indicators that can be considered as included in the GCF Investment Criteria including:

- a) Innovation: for example, fostering new market segments, creation of business models and/or the development or adoption of new technologies.
- b) Potential for scaling-up and replication: scaling up and replication potential will have a number representing the multiples of initial impact size combined with supporting justification.

- c) Potential for knowledge and learning: for example, useful lessons learned that can be captured and shared with other individuals, projects or institutions including the knowledge and experience working with women and other vulnerable groups as elaborated in the GCF Gender Policy.
- d) Contribution to the creation of an enabling environment: for example, the sustainability of outcomes and results beyond the completion of the intervention and the arrangements that provide for long-term and financially sustainable continuation of key outcomes and activities.
- e) Contribution to the regulatory framework and policies.
- f) Overall contribution to climate-resilient development pathways consistent with a country's climate change adaptation strategies and plans.

All indicators presented above are applicable in the context of Indonesia. The project proponent should meet at least one out of six indicators listed above.



3. Sustainable Development Potential

The expected environmental, social and health, and economic co-benefits should also be highlighted in the project or program proposals, together with the gender-responsive development impact. The indicators included in the GCF Investment Criteria are:

- a) Economic co-benefits: total number of jobs created, amount of foreign currency savings, and amount of government's budget deficits reduced.
- b) Social co-benefits: improved access to education to project beneficiaries including girls and vulnerable groups, improved regulation or cultural preservation, and improved health and safety of project beneficiaries particularly women and vulnerable groups.
- c) Environmental co-benefits: improved air and/or water quality, improved soil quality, and improved biodiversity and ecosystem services
- d) Gender-responsive development impact: proportion of men and women in jobs created including increasing women's employment, access to economic resources, and opportunity in the decision-making process regarding socio-economic development and environmental management.

All the criteria above are applicable in the context of Indonesia. Specifically, for Indicator (d), the coverage should also include the vulnerable groups such as people with disabilities and indigenous people, instead of only focusing on the gender aspect only. At least one out of the four indicators listed should be met by project proponents.



4. Needs of Recipients

The needs of recipients are measured based on the scale and intensity of vulnerability of the country and beneficiary groups. The GCF Secretariat proposes several indicators to measure the needs of recipients including:

- a) Vulnerability of the country and beneficiary groups for climate adaptation actions: the scale and intensity of exposure to climate risks for the beneficiary country and groups. Exposure could be expressed in terms of size of population and/or social or economic assets or capital.
- b) Economic and social development level of the country and affected population: the level of social and economic development (including income level) of the country and target population.
- c) Absence of alternative sources of financing: describe the barriers that have created the lack of alternative funding sources for the project/programme.
- d) Needs for strengthening institutions and implementation capacity: describe the opportunities to strengthen institutional and implementation capacity in relevant institutions

The implementation of the criteria in the context of Indonesia requires the following adjustments:

- Indicator (a) regarding vulnerability to climate change can be measured at the subnational level to show the variability of the risks and the capability to adapt to the risks in each region. See Figure 5 which summarizes the variability in terms of climate vulnerability in Indonesia.
- Indicators (d) can be omitted for the case of Indonesia as all proposals should by default lead to strengthening the institutional and implementation capacity of relevant institutions for addressing climate change issues.



5. Country Ownership

Country ownership is fundamental to all concept notes submitted to the GCF. Several indicators that should be considered as included in the GCF Investment Criteria are:

- a) Alignment with the country's national climate strategy and priorities as well as other existing policies.
- b) Capacity of accredited entities or executing entities to deliver the program or project.
- c) Stakeholder engagement process and feedback received from civil society organizations and other relevant stakeholders

In the context of Indonesia, the NDA and stakeholders agreed to omit Indicator (b) as the capacity to execute the project or program will be assessed directly by the GCF. On the other hand, the two other indicators are seen as very crucial for Indonesia.



6. Efficiency and Effectiveness

Economic and financial analysis primarily drives the efficiency and effectiveness criterion. Efficiency and effectiveness include two core indicators:

- a) Estimated cost per tCO₂ eq (total investment cost/expected lifetime emission reductions)
- b) Expected volume of finance to be leveraged as a result of the GCF's financing, disaggregated by public and private sources

In the case of Indonesia, stakeholders will focus on Indicator (a) when deciding on the efficiency and effectiveness of a project. Indicator (b) will be omitted, although it will later be required by the GCF in order to make the final decision on the proposals.



7. Sustainability of Project or Programme

One specific indicator that is considered crucial for Indonesia's context is related to the sustainability of the proposed project or program. Although this indicator seems to be implicitly included in the Criteria 2 (d), stakeholders perceive this factor as very important that it deserves to stand alone.

All the above criteria and indicators can be summarized into Table 7 below.

TABLE 7 Indonesia's Criteria for Assessing Climate Actions Proposed to the GCF

Criteria	Value
1. Impact potential For climate mitigation For climate adaptation tonCO ₂ e household or population as the beneficiaries of the project or program
2. Paradigm Shift a) <i>Innovation:</i> b) <i>Potential for scaling-up and replication</i> c) <i>Potential for knowledge and learning</i> d) <i>Contribution to the creation of an enabling environment</i> e) <i>Contribution to the regulatory framework and policies</i> f) <i>Overall contribution to climate-resilient development pathways</i>	Scale 1 to 10 <i>(at least one indicator should be met)</i>
3. Sustainable Development Potential a) <i>Economic co-benefits</i> b) <i>Social co-benefits</i> c) <i>Environmental co-benefits</i> d) <i>Gender-responsive development impact</i>	Yes or No <i>(at least one indicator should be met)</i>
4. Needs of Recipients a) <i>Vulnerability of the country and beneficiary groups for climate adaptation actions</i> b) <i>Economic and social development level of the country and affected population</i>	Yes or No <i>(at least one indicator should be met – refer to the vulnerability map of Indonesia in Figure 5)</i>
5. Country Ownership a) <i>Coherence and alignment with the country's national climate strategy and priorities as well as other existing policies</i> b) <i>Stakeholder engagement process and feedback received from civil society organizations and other relevant stakeholders</i>	Yes or No <i>(at least one indicator should be met)</i>
6. Efficiency and Effectiveness For climate mitigation For climate adaptation USDper tCO ₂ e USD per person beneficiary
7. Project/Programme Sustainability	Yes or No



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05 Limitations and Proposed Next Step

This Country Programme Document is a living document. It would be revisited regularly to ensure its relevance to the latest situation in Indonesia.

This Country Programme Document (CPD) is a living document. It would be revisited regularly to ensure its relevance to the latest development in Indonesia. In this document, the national government's commitment on climate change is clear. Such commitment will be further detailed in the Mid Term National Development Plan (RPJMN) according to the visions' and missions' statement of the elected president. This CPD is taking reference from the Draft RPJMN. The CPD should hence be updated following the finalization of the RPJMN. Furthermore, there are several other limitations of the document including the absence of data on robust cost assumptions for achieving the climate targets and data of the private sector's spending on climate actions. As new assumptions are available, it is crucial to updating this document to ensure that it remains relevant. Furthermore, there is no existing national coordination between sectors that brings together all different stakeholders on climate actions. Hence, the role of the NDA is fairly limited to the financing aspect of the climate priorities identified by the implementing agencies.

Addressing the aforementioned limitations, the suggested next steps are as follows. First, further studies and robust data collections are required on emission reduction cost, international finance and private sector contributions to climate actions in Indonesia. Second, strengthening the coordination mechanism within the NDA. The coordination mechanism can use the existing mechanism between the Ministry of Finance and Bappenas as well as Line Ministries regarding grants and loans to be received by the government. The coordination mechanism is stipulated by Government Regulation No. 10 year 2011 and further detailed by the Minister of National Development Planning Regulation No. 4 year 2011. Based on these regulations, both Bappenas and the Ministry of Finance coordinate the identification of projects and programs financed by international grants and loans. For instance, projects or programs financed by international grants should be based on the Mid-Term National Development Plan (RPJMN) and the Grant Utilization Plan or *Rencana Pemanfaatan Hibah* (RPH). RPH is developed based on RPJMN, three months after RPJMN is issued consisting of the direction and strategy

for utilizing grants. Based on RPH, a list of projects or programs to be financed by grants—or known as *Daftar Rencana Kegiatan Hibah* (DRKH), will be developed annually. The DRKH is proposed by the line ministries to the Ministry of Finance, donors, and institutions which the activities will take place. The regulation also stipulates the mechanism for monitoring and evaluating of performance in terms of the implementation or the projects and programs. Using this existing mechanism for overseas grant and loan coordination is suggested, although a specific regular coordination meeting should also be established at least between three ministries—Bappenas, the Ministry of Finance, and the Ministry of Environment and Forestry. Depending on specific sectors that will be selected as the priority of the GCF, more ministries can also involved in the regular coordination meeting. This is mainly because the GCF is not only intended for governments, as the recipients should also be the private sector and non-government organizations who usually need more flexibility in terms of identification and execution of projects.

Considering the size of the GCF as compared to the financial need to implement climate actions, the GCF should be used to leverage more resources to close the financial gap for climate action implementation. On climate mitigation, the GCF should be used as the catalyst for transforming financial and capital markets to finance low carbon projects/programs. On climate adaptation, the focus should be given to the vulnerable regions where micro and small grants should be made available for marginal communities to adapt to climate variabilities and climate change.

ANNEX 1 CONSULTATION PROCESS

No	Time	Activity	Participants	Description
1	30-Jan-19	Kick off meeting: Multi-Stakeholder Forum on National Program within the GCF Framework for Inclusive Climate Change Funding	<p>Agence Française De Développement (AFD)</p> <p>Arbeiter Samariter Bund (ASB)</p> <p>Asosiasi Energi Surya Indonesia (AESI)</p> <p>Asosiasi Industri dan Pelaku Pengembangan Energi Baru Terbarukan Indonesia (ASIPEBTI)</p> <p>Asosiasi Pemerintah Kabupaten Seluruh Indonesia (APEKSI)</p> <p>Badan Pengembangan Infrastruktur Wilayah (BPIW) – Ministry of Public Works</p> <p>Bandung Institute of Technology (Institut Teknologi Bandung/ITB)</p> <p>Bank Artha Graha Indonesia</p> <p>Bank Central Asia</p> <p>Bank Mandiri</p> <p>Bank Muamalat</p> <p>Bank Pembangunan Daerah Jawa Barat dan Banten</p> <p>Center for Climate Change and Multilateral Policy - Ministry of Finance</p> <p>Center for Climate Change ITB</p> <p>Center for Sustainable Transportation Development – Ministry of Transportation</p> <p>Conservation International (CI)</p> <p>Departemen Internasional – Indonesia Financial Services Authority (OJK)</p> <p>Directorate General of Climate Change – Ministry of Environment and Forestry</p> <p>Directorate General of New Renewable Energy and Energy Conservation – Ministry of Energy and Mineral Resources</p> <p>Directorate of Adaptation – Ministry of Environment and Forestry</p> <p>Directorate of GHG Inventory and MRV – Ministry of Environment and Forestry</p> <p>Directorate of Mobilization of Sectoral and Regional Resources – Ministry of Environment and Forestry</p> <p>Direktorat Adaptasi Perubahan Iklim (API) – Ministry of Environment and Forestry</p> <p>Direktorat Jenderal Pengelolaan Pembiayaan dan Resiko (DJPPR) – Ministry of Finance</p> <p>Direktorat Jenderal Pengelolaan Ruang Laut – Ministry of Maritime Affairs and Fisheries</p> <p>Fiscal Policy Agency – Ministry of Finance</p> <p>Global Green Growth Institute (GGGI)</p> <p>Global Water Partnership Southeast Asia (GWP-SEA)</p> <p>Himpunan Wanita Disabilitas Indonesia (HWDI)</p> <p>Hivos Southeast Asia</p> <p>Hutan Kemasyarakatan (HKm) Mandiri Kaliburu Yogyakarta</p> <p>Indonesia Agency of Agricultural Research and Development – Ministry of Agriculture</p> <p>Indonesia Chamber of Commerce and Industry</p>	<p>Two main agenda of the meeting were: (i) public dialog between ministries and non-governmental institutions and (ii) focus group discussion with stakeholders on climate change.</p> <p>The public dialog aimed (i) to disseminate information about the GCF; (ii) to obtain inputs from relevant ministries and governmental institution regarding the priorities on climate change mitigation and adaptation program or project; (iii) to explain and obtain input on the upcoming process of revising the Country Programme Document of the GCF.</p> <p>The output of the focus group discussion was to gather inputs from stakeholders, includes women, people with disabilities, and indigenous group regarding inclusive natural resources management program so that the funding benefit could be easily accessed by the society.</p>

No	Time	Activity	Participants	Description
			Indonesia Clean Energy Development II (ICED II) – USAID Indonesia Indonesia Climate Change Trust Fund - Indonesia Ministry of National Development Planning Indonesia Ministry of National Development Planning Indonesia Red Cross Society (IFRC) Indonesia Renewable Energy Society (Masyarakat Energi Terbarukan Indonesia/METI) Inovasi Bumi (INOBU) Institute for Essential Services Reform (IESR) International Fund for Agricultural Development (IFAD) Kantor Utusan Khusus Presiden untuk Pengendalian Perubahan Iklim Kemitraan Kiroyan Partners Landscape Indonesia Lingkar Temu Kabupaten Lestari (LTKL) Ministry of Agriculture Ministry of Industry Ministry of Internal Affairs Ministry of Public Works Mitra Aksi Foundation National Institute of Public Administration Indonesia (LAN) Penabulu Foundation Presidential Staff Office PT 3GT Servis Indonesia PT Adhi Karya (Persero) Tbk. PT Reksa Multi Usaha (RMU) PT. Sawit Nagan Raya Makmur Resource Management Development and Consultant (REMDEC SWAPRAKARSA) Rumah Energi Solidaritas Perempuan The Samdhana Institute United Nations Development Programme (UNDP) Wahana Lingkungan Hidup Indonesia (WALHI) World Bank World Wildlife Fund (WWF) Yayasan Pemberdayaan Perempuan Kepala Keluarga (PEKKA)	
2	4-Apr-19	Focus Group Discussion: Method of Prioritization on Green Climate Fund Program	Badan Pengembangan Infrastruktur Wilayah (BPIW) – Ministry of Public Works Center for Climate Change and Multilateral Policy – Ministry of Finance Directorate General of New Renewable Energy and Energy Conservation – Ministry of Energy and Mineral Resources Direktorat Kehutanan dan Konservasi Sumber Daya Air - Indonesia Ministry of National Development Planning Direktorat Pengembangan Penyehatan Lingkungan Permukiman Cipta Karya – Ministry of Public Works Global Green Growth Institute (GGGI)	The focus group discussion aimed: (i) to discuss method of program/project prioritization based on GCF criteria; and (ii) to update mitigation and adaptation program that are potentially proposed as GCF's funded project.

No	Time	Activity	Participants	Description
			Inovasi Bumi (INOBU) Ministry of Industry Presisi Indonesia	The FGD was intended to compile climate change program or project from ministries or governmental institution in the template provided by the NDA GCF.
	25-Apr-19	One on one interview with Ministry of Transportation	Center for Sustainable Transportation Development – Ministry of Transportation Fiscal Policy Agency – Ministry of Finance	The interview aimed to gather inputs regarding the priority project for GCF and how the GCF should be best used considering the existing climate finance in Indonesia. The directorate conveyed that they needed additional time to discuss the priority project internally.
	26-Apr-19	One on one interview with Ministry of Public Works	Badan Pengembangan Infrastruktur Wilayah (BPIW) – Ministry of Public Works Fiscal Policy Agency – Ministry of Finance Kiroyan Partners	<p>The interview aimed to discuss communication strategy within NDA GCF and to coordinate potential program or project from Ministry of Public Works to Country Programme NDA GCF.</p> <p>The ministry would coordinate internally and the interview attendees (Kepala Pusat Perencanaan Infrastruktur PUPR, tim pelaksana MAPI, dan PRB PUPR) will be the PIC for climate change project in the ministry.</p>
	2-May-19	One-on-one interview with the Ministry of Environment and Forestry	Director for Resource Mobilization for Climate Change, Ministry of Environment and Forestry	The interview gathered the perspectives of the Ministry particularly Directorate General of Climate Change on climate priorities that should be financed by the GCF.

No	Time	Activity	Participants	Description
3	3-May-19	NDA GCF Indonesia's Routine Coordination Meeting with National Accredited Entities (AE), Prospective National AE, and International AE that have Activities in Indonesia	Conservation International (CI) Fiscal Policy Agency – Ministry of Finance Food and Agricultural Organization (FAO) Global Green Growth Institute (GGGI) Indonesia Infrastructure Finance (IIF) International Fund for Agricultural Development (IFAD) Japan International Cooperation Agency (JICA) Kemitraan Presisi Indonesia PT Sarana Multi Infrastruktur (Persero) Swisscontact Indonesia United Nations Development Programme (UNDP) World Wildlife Fund (WWF)	The routine coordination meeting was conducted as part of regular consultation to share information and experience between NDA-GCF Secretariat Indonesia, national AE, prospective national AE, and international AE. The meeting was also meant to evaluate GCF project or program progress which are both planned and/or executed by national AE, prospective national AE, and international AE. Finally the meeting also aimed to disseminate information regarding GCF funding opportunity, accreditation mechanism, and accreditation benefit to prospective AE.
4	17-May-19	One on one interview with Ministry of Energy and Mineral Resources	Directorate General of New Renewable Energy and Energy Conservation – Ministry of Energy and Mineral Resources Global Green Growth Institute (GGGI) Presisi Indonesia	The interview was conducted to gather information on the climate change program or project which are potentially funded by GCF.
5	8-Aug-19	FGD CPD GCF	Badan Pengembangan Infrastruktur Wilayah (BPIW) – Ministry of Public Works Bank Pembangunan Daerah Jawa Barat dan Banten Conservation International Directorate General of New Renewable Energy and Energy Conservation – Ministry of Energy and Mineral Resources Direktorat Jenderal Pengelolaan Pembiayaan dan Resiko (DJPPR) – Ministry of Finance Direktorat Jenderal Pengendalian Perubahan Iklim – Ministry of Environment and Forestry ENGIE Indonesia Fiscal Policy Agency – Ministry of Finance Indonesia Climate Change Trust Fund - Indonesia Ministry of	The FGD aimed to obtain inputs for the CPD draft and to review the list of compiled priority projects. The output of the FGD was inputs from ministries and non-governmental institutions on the thematic priorities for climate mitigation and

No	Time	Activity	Participants	Description
			National Development Planning Indonesia Infrastructure Finance (IIF) Indonesia Ministry of National Development Planning Indonesia Palm Oil Association (IPOA) – Pusat Penelitian Kelapa Sawit (PPKS) Inovasi Bumi (INOBU) International Finance Corporation (IFC) International Fund for Agricultural Development (IFAD) Kantor Utusan Khusus Presiden untuk Pengendalian Perubahan Iklim Kemitraan Ministry of Agriculture Ministry of Health Ministry of Industry Ministry of Maritime Affairs and Fisheries Ministry of Transportation Mitra Aksi Foundation Penabulu Foundation Presisi Indonesia PT Sarana Multi Infrastruktur (Persero) Pusat Kebijakan Ekonomi Makro – Ministry of Finance Rumah Energi Solidaritas Perempuan The Committee for Acceleration of Priority Infrastructure Delivery The National Disaster Management Agency (BNPB) Tropical Landscape Finance Facility (TLFF) United Nations Development Programme (UNDP) Wahana Lingkungan Hidup Indonesia (WALHI) World Bank World Wildlife Fund (WWF) Yayasan Keanekaragaman Hayati Indonesia (KEHATI)	adaptation. The inputs were included in the existing draft.



FISCAL POLICY AGENCY
MINISTRY OF FINANCE
REPUBLIC OF INDONESIA

NDA
GCF

National Designated Authority
Green Climate Fund
Indonesia

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