FISCAL POLICIES OF CLIMATE CHANGE:
How Fiscal Instruments Cope with the Vulnerability of Climate Change in Indonesia

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OUR CONCERN ABOUT CLIMATE CHANGE

Climate change is indisputably apparent and studies indicate the occurrence of global warming acceleration. Climate-related risks for natural and human systems are higher for global warming of 1.5°C than at present, but lower than at 2°C.

The graph shows an increase of global temperature from the year 1960 - 2000 which indicates the likeness of temperature to spike if real-climate-related actions are not implemented.

RISKS ON INCREASED GLOBAL TEMPERATURE

WATER SECURITY
The increasing level of severe flood and drought will exacerbate the clean water scarcity.

LAND ECOSYSTEM
It is scientifically predicted that severe forest fires will highly occur. This could lead to the lost of ecosystem, biodiversity and a vicissitudes of Biome.

OCEAN
The rise of sea level temperature leads to the extinction of corals, seaweeds, mangroves, several marine biodiversities and ecosystems.

HEALTH
Floods could lead to the spread of vector-borne diseases and deaths related to drowning. The rise of temperature can cause death of heat strokes.

FOOD SECURITY
The changing of biome and ecosystem production could lead to food scarcity for all beings.

INDONESIA IS VULNERABLE FROM CLIMATE CHANGE

Indonesia, the world’s largest archipelago comprising over 17,508 ISLANDS. Covering an area of about 790 million hectares with a total coastline length of 95,181 KM and a land territory of about 200 million hectares. Therefore, Indonesia is highly vulnerable to the adverse impacts of climate change.

Data collected on the average temperature variation across the entire region of Indonesia for the past 100 years shows a trend of increasing temperature level.

Source: RAN-API, 2012
**OUR COMMITMENT TO TACKLE CLIMATE CHANGE**

Indonesia actively participates in controlling climate change at global level through United Nations Framework Convention on Climate Change Conference of the Parties (UNFCCC COP)

1992 - UNFCCC
1997 - Kyoto Protocol
2007 - Bali Road Map
2009 - Copenhagen Accord
2016 - Paris Agreement
2018 - Katowice Climate Package

Kyoto, Japan
Bali, Indonesia
Copenhagen, Denmark
Paris, France
Katowice, Poland

Government of Indonesia is committed to controlling climate change through various ratifications of international policies into national regulations and action plans. Our state budget also contributing to funds climate mitigation and adaptation actions.

**TWO AMBITIOUS AGENDAS IN 2030:**
SDGs (Economy, Society, Biosphere) & NDC

17 targets of SDGs have been mainstreamed into national action plan under the President’s Regulation (Perpres No. 59/2017). Especially to tackle climate change based on SDGs 13.

We have 2 ambitious agenda in 2030 especially related to climate change: SDGs and NDC. Green economy and climate friendly development is needed to achieve those agendas.

**ECONOMY**

<table>
<thead>
<tr>
<th>Source</th>
<th>Data is in Mton CO2e</th>
</tr>
</thead>
<tbody>
<tr>
<td>FOREST</td>
<td>497</td>
</tr>
<tr>
<td>ENERGY &amp; TRANSPORTATION</td>
<td>314</td>
</tr>
<tr>
<td>WASTE</td>
<td>11</td>
</tr>
<tr>
<td>AGRICULTURE</td>
<td>9</td>
</tr>
<tr>
<td>INDUSTRIAL PROCESSES AND PRODUCTUSE</td>
<td>2.75</td>
</tr>
</tbody>
</table>

**Adaptation Sectors based on RAN-API**

1. **LIFE SYSTEM RESILIENCE**
   - Health, Settlement, and Infrastructure

2. **SPECIAL TERRITORY RESILIENCE**
   - Cities, Coastal, and Small Islands

3. **ECONOMIC RESILIENCE**
   - Food Security & Energy Sovereignty

4. **ECOSYSTEM RESILIENCE**
   - Environment, Disaster, and Climate Resilience

5. **SUPPORTING SYSTEM RESILIENCE**

By 2030, Indonesia is determined to reduce its Green House Gasses Emission by:

- Unconditional emission reduction against BAU scenario
- Conditional emission reduction subject to international support

29% up to 41%
Our Progress to Achieve NDC Targets

Indicators

BaU Emission Level in 2030 2,869 MtonCO2eq
Actual Emission Level (Include FOLU) in 2017 1,154 MtonCO2eq
Actual Emission Level (Exclude FOLU) in 2017 861 MtonCO2eq
Emission Reduction in 2017 706 MtonCO2eq

Percentage of Emission Reduction from BaU (Emission Reduction year T/BaU Emission Level in 2030) 24,6%

Climate Financing Needs to Achieve NDC Targets

Source: Second BUR (2018), Billion USD

Based on the 2018 Second Biennial Update Report (BUR), Indonesia submitted an estimated financing needs to achieve the emission reduction target in 2030 reaching USD 247.2 billion or around Rp 3.461 trillion (Rp 266.2 trillion/year).

Sectors | Action Plan | Projected Emission Reduction
--- | --- | ---
Forestry and Land Use | • Forest conservation and protection program  
• Forest fire prevention | 655 million-ton CO2e
Energy and Transportation | • Development of renewable energy power plants  
• Clean technology investment | 398 million-ton CO2e
Industrial Processes and Product Use (IPPU) | Majority for Cement and Iron Industry (80% private investment) | 3.25 million-ton CO2e
Waste | Treatment of Liquid and Solid Waste at Industrial and Household | 26 million-ton CO2e
Agriculture | • Low emission varieties  
• Irrigation efficiency  
• Biogas utilization  
• Increasing the quality of livestock supplements | 4 million-ton CO2e
Based on FPA and Climate Policy Initiative Joint Reports (2014), climate financing in Indonesia is dominated by domestic funding (66%), and the rest from international public finance.

Domestic fund mostly came from state budget, sub-national government spending, revolving fund investment, and SOE’s equity fund and green bonds.

Participation from private sector is encouraged by OJK through the issuance of the Sustainable Finance Roadmap (2014) and OJK Regulation no.51/2017 regarding the Implementation of Sustainable Finance for Financial Service Institutions, Securities Emitter, and Going Public Company.
Fiscal Policies Related to Climate Change
FISCAL INSTRUMENTS RELATED TO CLIMATE CHANGE

Central Government Budget on Climate Change

OUR CLIMATE BUDGET TAGGING MECHANISM

Since 2012, the Ministry of Finance has actively carried out several policy studies in terms of public funding for climate change and was used as the basis for climate change budgeting activities.

In an effort to increase transparency of public funding for climate change in Indonesia, in 2016, the Government of Indonesia c.q. The Ministry of Finance initiate the climate change budgeting (Climate Budget Tagging) system in state budget. Climate budget tagging is a process of marking, tracking and identify climate change outputs and budgets in planning and budgeting documents.

The implementation of CBT is the result of collaboration between the Ministry of Finance and Bappenas and the Ministry of Environment and Forestry by involving a number of related ministries/institutions, through the KRISNA system (Planning and Budgeting System Collaboration).

<table>
<thead>
<tr>
<th>Year</th>
<th>Study of Mitigation Fiscal Framework (MFF) by FPA</th>
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<tbody>
<tr>
<td>2012</td>
<td>Study of Low Emission Budget Tagging and Scoring System (LESS) by FPA</td>
</tr>
<tr>
<td>2013</td>
<td>Implementation of Climate Mitigation Budget Tagging in ADIK system</td>
</tr>
<tr>
<td>2014</td>
<td>Collaboration between FPA &amp; UNDP/UNEP in the Sustainable Development Finance Program. Study of Green Planning &amp; Budgeting</td>
</tr>
<tr>
<td>2016</td>
<td>Implementation of Climate Mitigation Budget Tagging in ADIK system</td>
</tr>
<tr>
<td>2017</td>
<td>FPA Published Climate Change Mitigation Budget Report 2016-2017</td>
</tr>
<tr>
<td>2018</td>
<td>1st Global Green Sukuk Issuance based on climate budget tagging data</td>
</tr>
<tr>
<td>2019</td>
<td>2nd Global Green Sukuk Issuance and Green Sukuk Retail Issuance based on climate budget tagging data</td>
</tr>
<tr>
<td>2020</td>
<td>FPA launch the Public Climate Finance Report FY 2016-2018</td>
</tr>
<tr>
<td></td>
<td>Development of Regional Climate Budget Tagging</td>
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</tbody>
</table>

To find out the size of climate budget in State Budget, Govt. of Indonesia applied the Climate Budget Tagging mechanism in national planning and budgeting system.

Over the past 5 years, the average climate spending was IDR89,6 trillion per year or 3.9% allocated from the State Budget per year.

State budget have funded 34% of the total climate financing needs based on Second Biennial Update Report which is valued IDR3,461 trillion (IDR266,2 trillion per year) to achieve NDC target in 2030.
FISCAL INSTRUMENTS RELATED TO CLIMATE CHANGE

Central Government Adaptation

ADAPTATION SECTORS ON CLIMATE BUDGET TAGGING

- AGRICULTURE, MARINE & FISHERIES (Food Security, Irrigation, Coastal and Small Islands Resilience)
- ECOSYSTEM SERVICES (Biodiversity, Social Forestry, Proklim)
- SOCIAL PROTECTION & DISASTER RISK MANAGEMENT (Data & Services)
- HEALTH SERVICES (Arbovirosis and Malaria Disease Management)
- PUBLIC WORKS (Water Security, Housing, Infrastructures)
- METEOROLOGY, CLIMATE, AND AEROSPACE RESEARCH & DEVELOPMENT (Data & Information System Improvement)
- ECONOMIC RESILIENCE IN RURAL AREA (Financial and Asset Management)

Since 2018, Climate Budget Tagging able to provide information regarding the amount of public funding and outputs related to climate change adaptation actions in Indonesia.

The information of climate change adaptation actions in state budget are used as reference in determining the underlying assets of each sovereign green sukuk issuance (global or retail green sukuk).

Disclamer: Climate Budget on FY 2019 and 2020 still using interim data.
FISCAL INSTRUMENTS RELATED TO CLIMATE CHANGE

Fiscal Transfer to Encourage Green Development in Sub-National level

TRANSFER FUND RELATED TO ENVIRONMENT AND CLIMATE CHANGE ACTIONS

Dana Bagi Hasil Sumber Daya Alam (DBH SDA) (Profit Sharing Fund on Natural Resources):
- DBH SDA Forestry
  Allocated Rp 1,56 trillion in State Budget 2020
- DBH SDA Geothermal
  Allocated Rp 1,07 trillion in State Budget 2020

Dana Alokasi Khusus Fisik (DAK Fisik) (Special Allocation Fund - Physical Development):
- DAK Fisik Agriculture & Irrigation Development
  Allocated Rp 2,26 trillion in State Budget 2020
- DAK Fisik Environment Development
  Allocated Rp 40,6 billion in State Budget 2020
- DAK Fisik Forestry Development
  Allocated Rp 7,99 billion in State Budget 2020
- DAK Fisik Marine & Fisheries Development
  Allocated Rp 40,6 billion in State Budget 2020

Dana Alokasi Khusus Non Fisik (DAK Non Fisik) (Non Physical Special Allocation Fund - Waste Management Service Fund):
- BLPS
  Allocated Rp 53,09 billion

Dana Insentif Daerah (DID) (Incentive Fund):
- DID on Waste Management
  Allocated Rp 83,21 billion for 14 local government

DID is allocated to local government that meet the assessment criteria for obtaining DID. There are 4 main criterias and 11 performance categories as DID indicators. One of the performance category that related to environment and climate change is waste management performance category. The assessment is carried out by the Ministry of Environment and Forestry through a verification process of waste management performance in each region. There are 14 local government that meet the requirement.
FISCAL INSTRUMENTS RELATED TO CLIMATE CHANGE

Sovereign Green Sukuk Financing

Green Sukuk is an instrument to finance climate change actions and also achieve the SDGs target. Climate Budget Tagging data is used as reference / underlying asset for the issuance of Green Sukuk.

Ministry of Finance has launched the Green Sukuk Allocation and Impact Report in March 2020. The report shows the govt. of Indonesia’s commitment on low carbon economy and climate resilience in the future.

Source: DJPPR-Kemenkeu (2020)

Green Sukuk Allocation and Impact Report

Projected Emission Reduction from Global Green Sukuk Issuance

- First Issue 2018: 5.7 millions ton CO2e
- Second Issue 2019: 3.2 millions ton CO2e

Underlying Assets:

- Ministry of Public Works and Housing
- Ministry of Transportation
- Ministry of Energy and Mineral Resources

Green Sukuk Funding Allocation per Sectors

<table>
<thead>
<tr>
<th>Sector</th>
<th>2018</th>
<th>2019</th>
</tr>
</thead>
<tbody>
<tr>
<td>Renewable Energy</td>
<td>8%</td>
<td>5%</td>
</tr>
<tr>
<td>Energy Efficiency</td>
<td>6%</td>
<td>6%</td>
</tr>
<tr>
<td>Improving Climate Resilience for Vulnerable Areas</td>
<td>17%</td>
<td>11%</td>
</tr>
<tr>
<td>Sustainable Transportation</td>
<td>49%</td>
<td>49%</td>
</tr>
<tr>
<td>Waste Management and Waste to Energy</td>
<td>7%</td>
<td>7%</td>
</tr>
</tbody>
</table>

5 years tenor
2.3% Coupon
• Lowest coupon rate for 5 years tenor
• 7.37x Oversubscribed
FISCAL INSTRUMENTS RELATED TO CLIMATE CHANGE

Resilience to Climate Change for Highly Vulnerable Areas and Sectors/Disaster Risk Reduction

Underlying Assets:

Ministry of Public Works and Housing

TYPE OF PROJECTS:

- FOOD SECURITY:
  i. Construction of irrigation networks
  ii. Management of irrigation water for agriculture
  iii. Expansion and protection of agricultural land

- FLOOD MITIGATION & MANAGEMENT:
  i. Flood control facilities
  ii. Lava control facilities
  iii. Urban drainage management
  iv. Coastal protection
  v. Development of residential areas

- DRAUGHT MANAGEMENT:
  i. Provision and management of ground and raw water
  ii. Development and improvement of drinking water supply system

Source: DJPPR-Kemenkeu (2020)

Green Sukuk is an instrument to finance climate change actions and also achieve the SDGs target. Climate Budget Tagging data is used as reference/underlying asset for the issuance of Green Sukuk.
**IN JUNE 2020**

**INDONESIA ISSUED THE 3rd GREEN SUKUK**

Raising a total of **USD 2.75 BILLION** FROM THE THREE GLOBAL GREEN SUKUK ISSUANCES

**2020 Sector Focus**

- **Resilience to Climate Change** for Highly Vulnerable Areas and Sectors/Disaster Risk Reduction
- **Waste to Energy and Waste Management**
- **Sustainable Transport**

**2020**
- Yield 2.30% p.a.
- Tenor 5-years
- USD 750 million
- Investor spread: 12% USA, 11% Europe, 32% Middle East, 40% Asia, and 5% Indonesia.

**Reached 33.74% of Green Investor (an increase from 29% on the previous year)**

Green Sukuk is potential to be developed and used as climate funding in Indonesia even in the midst of COVID-19 pandemic

Source: DJPPR-Kemenkeu (2020)
DISASTER RISK FINANCING AND INSURANCE STRATEGY

Is a strategy to manage the impact of disaster by combining financial instruments to obtain an efficient and effective disaster risk financing scheme, including the budget support, preparing the pooling fund and insurance scheme to transfer risks.
What is GCF?

- UNFCCC’s Financial Mechanism Executing Agency
- Established at the UNFCCC COP in 2010
- Balanced Mitigation-Adaptation Financing
- The Biggest Climate Change Fund in the World
- It Began Operations in 2015 in Songdo
- Diversification of Financial Instrument

Role of MoF as National Designated Authority of Green Climate Fund

**Funding Potency**

- Committed: 5.4 USD Billion
- Mobilized: 4.9 USD Billion
- Replenishment: 9.8 USD Billion

**Funding Mechanism**

- Accredited Entities and NDA are the main components in accessing GCF funding
- The GCF works through AE to channel funding into projects or programs
- Developing countries need to have an NDA / focal point in order to access GCF funding
- The Fiscal Policy Agency representing the Minister of Finance was designated as the Indonesian NDA-GCF based on the Decree of the Minister of Finance Number 756 / KMK.10 / 2017

**Funding Area**

- Mitigation
  - Access and Energy Power Grid
  - Transportation
  - FOLU
- Adaptation
  - Health, Foods, and Water
  - Infrastructure and Environment
  - Society and Community Livelihoods
  - Ecosystem and Environment Services

**Funding Area**

- Access and Energy Power Grid
- Transportation
- FOLU
- Building, City, Industry and Equipment
Take Aways

The Government creates innovative financing and improves policy, for instance:

• The issuance of the 3rd Global Green Sukuk in June 2020, in the midst of pandemic Covid-19, raising a total of USD2,75 billion from three global green sukuk issuance (since 2018 to 2020). And currently, the Ministry of Finance is discussing the potential issuance of SDG Bond and other thematic Bond.

• The adaptation climate budget tagging will refer to the NDC adaptation roadmap. Adaptation budget requires further monitoring and evaluation methods (as a measurement of adaptation budget performance in our national planning and budgeting system).

• To support the achievement of its NDC, the Government is currently on the discussion to prepare the policy on Carbon Pricing and support for Renewable Energy.

• On fiscal policy, MoF is currently preparing the study on Climate Change Fiscal Framework that expected to able to set out fiscal policy strategy on CC.
THANK YOU