



FISCAL POLICY AGENCY  
MINISTRY OF FINANCE



# INDONESIA

# CLIMATE CHANGE MITIGATION AND ADAPTATION BUDGET

## 2018-2020





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# CLIMATE CHANGE IN INDONESIA

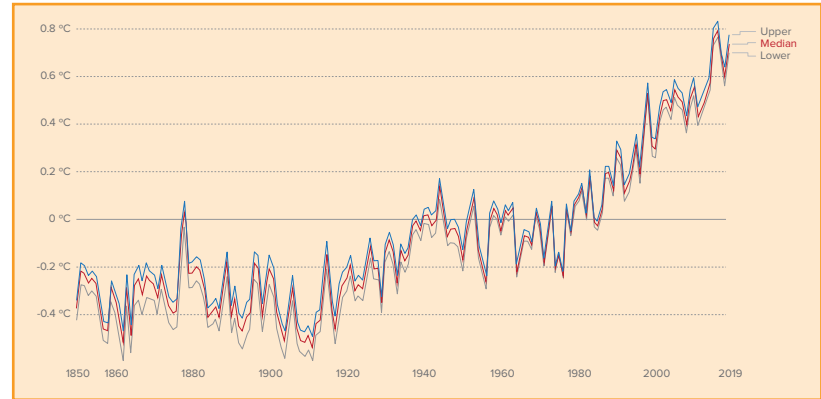
# CLIMATE CHANGE GLOBAL RISK

Climate change is indisputably apparent and studies indicate the occurrence of global warming acceleration.

Climate-related risks for natural and human systems are **reduced at a global temperature increase of 1.5°C and become significantly more disastrous with an increase of 2°C.**

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

## AVERAGE TEMPERATURE ANOMALY, GLOBAL



Source: Hadley Centre (HadCRUT4)

Note: The red line represents the median average temperature change, and grey lines represent the upper and lower 95% confidence intervals.

## 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 occur more frequently. This could lead to the loss of ecosystems, biodiversity, and the vicissitudes of biomes.



### OCEAN

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



### HEALTH

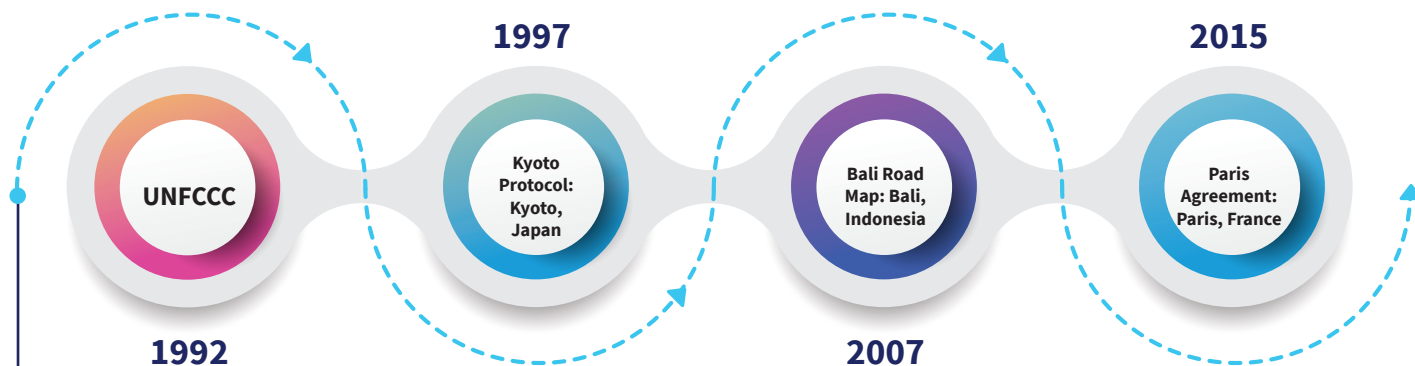
Floods could lead to the spread of vector-borne diseases and deaths related to drowning. The rise of temperature can cause death of heat strokes.



### FOOD SECURITY

The change of biomes and ecosystems could lead to food scarcity for all beings.

## GLOBAL COMMITMENTS



**United Nations**  
Framework Convention on  
Climate Change

United Nations Framework Convention on Climate Change was established in 1992 as a global response to the threat of climate change. Since its establishment, several important agreements have been enacted.

Conférence sur les Changements Climatiques 2015

COP21/CMP11

Paris, France



PARIS2015  
COP21-CMP11

The main goal of this agreement is to strengthen the global response to the threat of climate change by **keeping a global temperature rise well below 2 degrees Celsius** above pre-industrial levels and to pursue efforts to limit the temperature increase to 1.5 degrees Celsius.

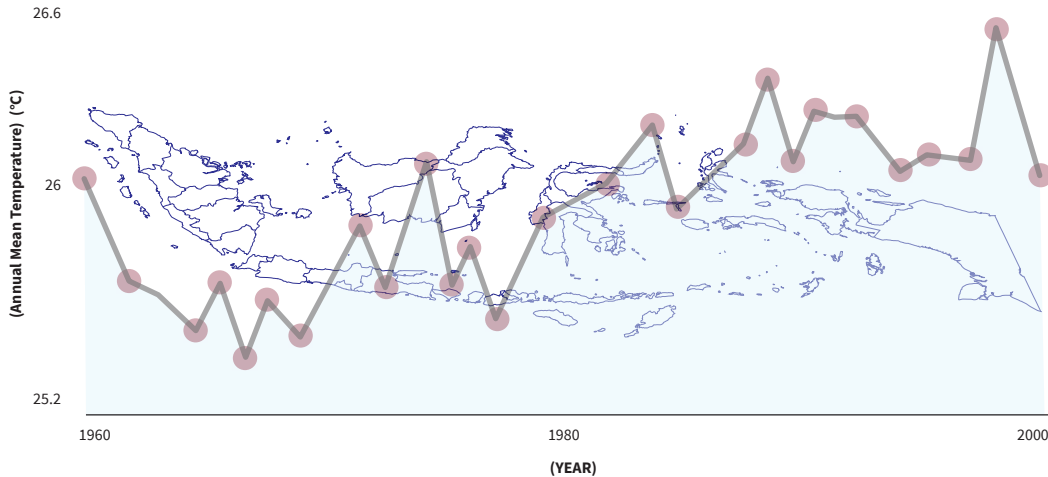


**190 out of  
197 countries**

have ratified to the Paris agreement  
(as of August, 2020).

## INDONESIA'S VULNERABILITY AND IMPACT TO CLIMATE CHANGE

Indonesia is 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

Indonesian GHG emissions of 2016 is

**1,514,949.8 GgCO<sub>2</sub>e**



which is an increase of from the year 2000

**50.3%**

Source: The GHG Inventory and MRV Report, MoEF 2017

The monetary value of the economic loss annually due to climate change in 2050 is amounted to

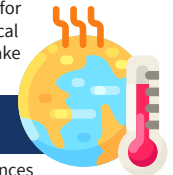
**USD 14.8 BILLION**  
(IDR 132 TRILLION)

Source: Cost of Climate Change, USAID, 2016

Climate change is believed to increase the risk for hydro-meteorological disasters, which make up to

**80%**

of disaster occurrences in Indonesia.



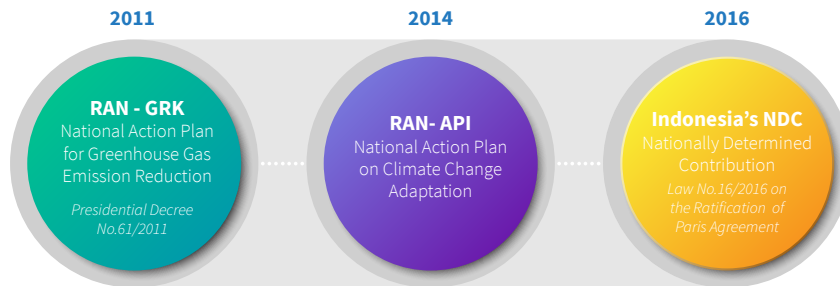
Source: NDC, 2016



## INDONESIA'S COMMITMENTS



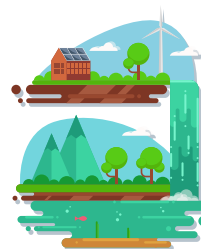
Since 2010, GOI has shown its strong commitment in tackling climate change by issuing several policies.



The Government has also mainstreamed climate mitigation and adaptation in the National Mid-Term Development Plan (RPJMN 2020-2024), as cross-cutting issues. As part of Global commitments, Indonesia has ratified Paris Agreement and submitted NDC in 2016.

FOREST	ENERGY & TRANSPORTATION	WASTE	AGRICULTURE	INDUSTRIAL PROCESSES AND PRODUCT USE
497	314	11	9	2.75
650	398	26	4	3.25

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



**29%**

Unconditional emission reduction against BAU scenario

**up to 41%**

conditional emission reduction subject to international support

Source: Indonesia's NDC

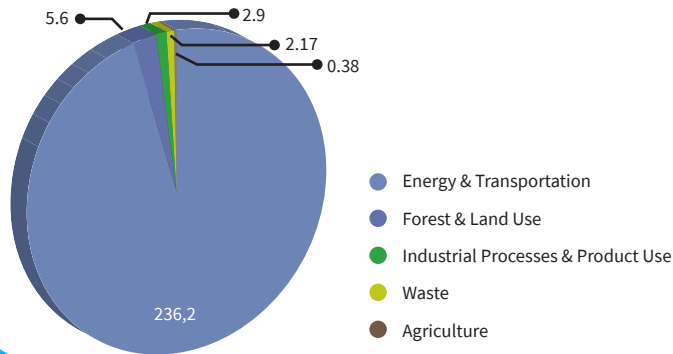
note: data is in MTon CO<sub>2e</sub>

## FINANCING CLIMATE ACTIONS

Implementing climate actions to achieve national target require a massive amount of financial resources and the funding can be obtained from the national budget or other potential financial resources.

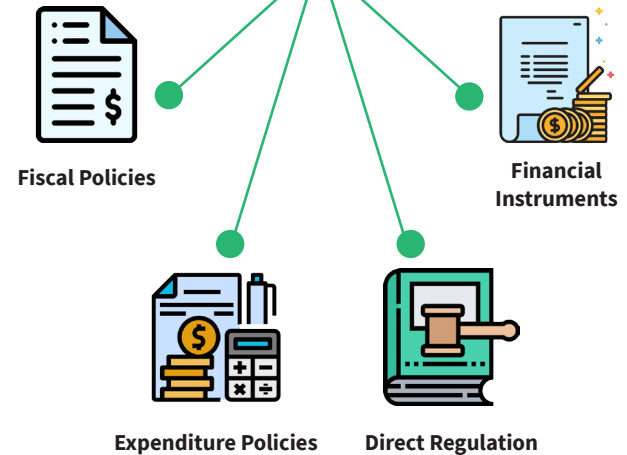
The government plays a crucial role in ensuring that adequate funding is available to finance climate change programs, as well as tracking and monitoring the results of the programs implemented.

### Estimated funding needs for Climate Change Mitigation Activities 2018-2030 (in billion USD)



Source: Second Biennial Update Report (BUR), 2018

### Government roles to financially support the national commitments



# CLIMATE CHANGE BUDGET TAGGING

Climate Change Budget Tagging (CBT) is a tool to identify and track how much the Government has spent on climate change mitigation and adaptation by tagging all of the spending that fits into the Government of Indonesia's climate objectives.

CBT has been developed and implemented since 2014 with the support from UN Development Programme and UN Environment Programme through the Sustainable Development Financing (SDF) program. It involves a detailed assessment of the climate benefits of projects undertaken by line ministries. Initially, CBT involves six line ministries related to the climate change mitigation action plans (RAN-GRK). Since 2018, CBT has expanded to include line ministries related to climate change adaptation action plans (RAN-API) to reach 18 ministries/institutions across adaptation and mitigation activities.



## WHY CBT



### LEGAL BASIS

CBT is regulated under the Minister of Finance Regulation No. 142/2018



### SYSTEM

CBT is integrated into the National Planning and Budgeting system.



### GUIDELINES

Guideline/manual on CBT at the national and sub-national level have been developed to support the line ministries and local governments.

CBT supports green development budgeting in order to prioritize climate change-related investments.

CBT acknowledges public transparency and aims to improve accountability by giving public access to the government's spending information.

CBT supports policymakers in mainstreaming climate change actions in the national development programs.


Climate change mitigation and adaptation are 2 out of 8 budget thematic areas that must be tagged by the line ministries in the planning and budgeting process.

 Education (001)

 Public Health (002)

 **Climate Change Mitigation (003)**

 **Climate Change Adaptation (004)**

 Infrastructure (005)

 South-south Cooperation (006)

 Gender Responsive (007)

 Stunting (008)

## CBT IN THE NATIONAL DEVELOPMENT SYSTEM

Climate Budget Tagging (CBT) has been integrated in the national planning and budgeting named KRISNA, which is an abbreviation of (Collaboration for Performance Budgeting Planning and Information system).

In the beginning, CBT is implemented under the budgeting system called ADIK (Data Architecture and Performance Information). As mandated under the Government Regulation (PP) No. 17/2017 on the synchronisation of planning and budgeting process, a new system called KRISNA was established.

KRISNA is a platform for the government to facilitate the budget and activity planning process of every Ministry/Agency. The system is borne of the collaboration between three ministries; Ministry of Finance, Ministry of National Development Planning and Ministry of Administrative and Bureaucratic Reform.

The budget is tagged at the output level because the information on both the performance indicator and budget allocation is available at this level. This eases the identification of the budget allocation to climate change budget.

Ministry/Institution	Echelon I	Echelon II
Strategic Outcome	Programme & Activities	Output
●	●	●
		●
		●
		●

- Mitigation
- 
- Adaptation
- 



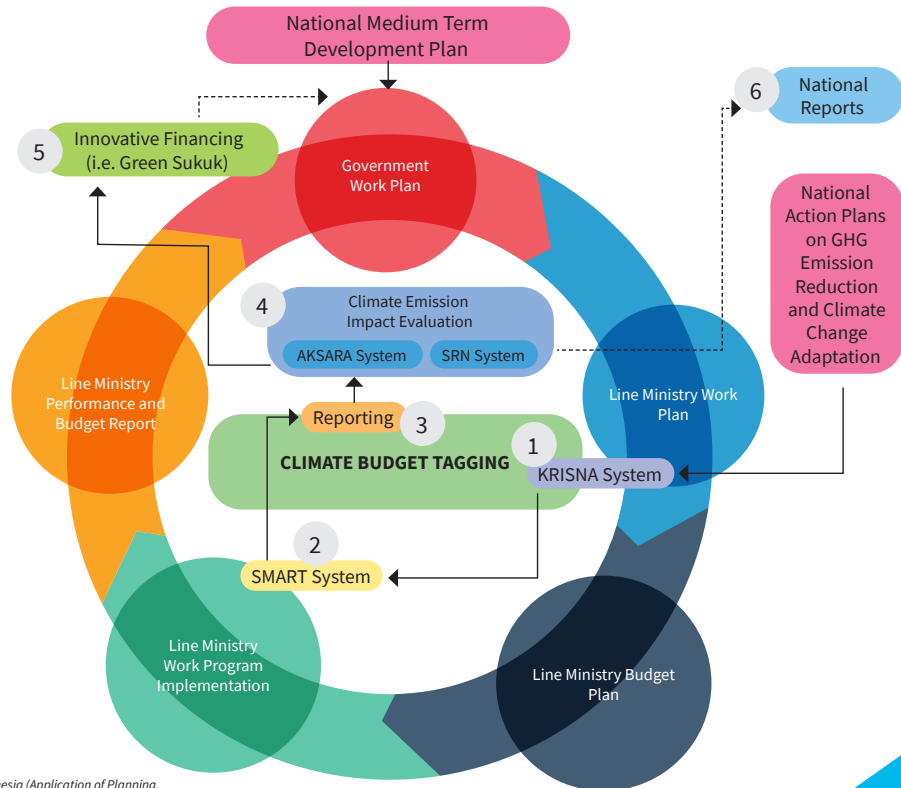
# INDONESIA'S CLIMATE BUDGET TAGGING PROCESS

The implementation of CBT is following the national planning and budgeting cycle.

1. The **Line Ministries** tag their climate-related output into the **KRISNA** system during the work plan formulation.
2. The allocated climate budget is monitored through the **SMART**\* system, which is then used for climate expenditure reporting.
3. The Climate Expenditure Report is developed annually and is published by the Ministry of Finance.
4. The impact of these climate change related outputs is evaluated through the **AKSARA**\* and **SRN**\* system.

The climate expenditure and climate impact can be used for:

5. Developing innovative financing instruments to re-financing and financing climate actions (i.e Green Sukuk/Bond).
6. Reference for reporting to national and international stakeholders (UNFCCC).



\*AKSARA: Aplikasi Perencanaan dan Pemantauan Aksi Pembangunan Rendah Karbon Indonesia (Application of Planning, Monitoring, Evaluation and Reporting of the Implementation of the Indonesia's Low Carbon Development)

\*SMART: Sistem Monitoring dan Evaluasi Kinerja Terpadu (Integrated Performance Evaluation and Monitoring System)

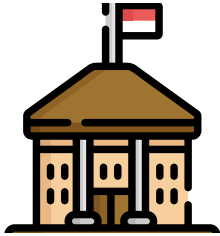
\*SRN: Sistem Registri Nasional (National Registry System)



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# CBT 2018-2020 RESULTS





the Government of Indonesia is allocating

**4.3%**

(average per year)

of State Budget to respond to climate change from 2018 to 2020



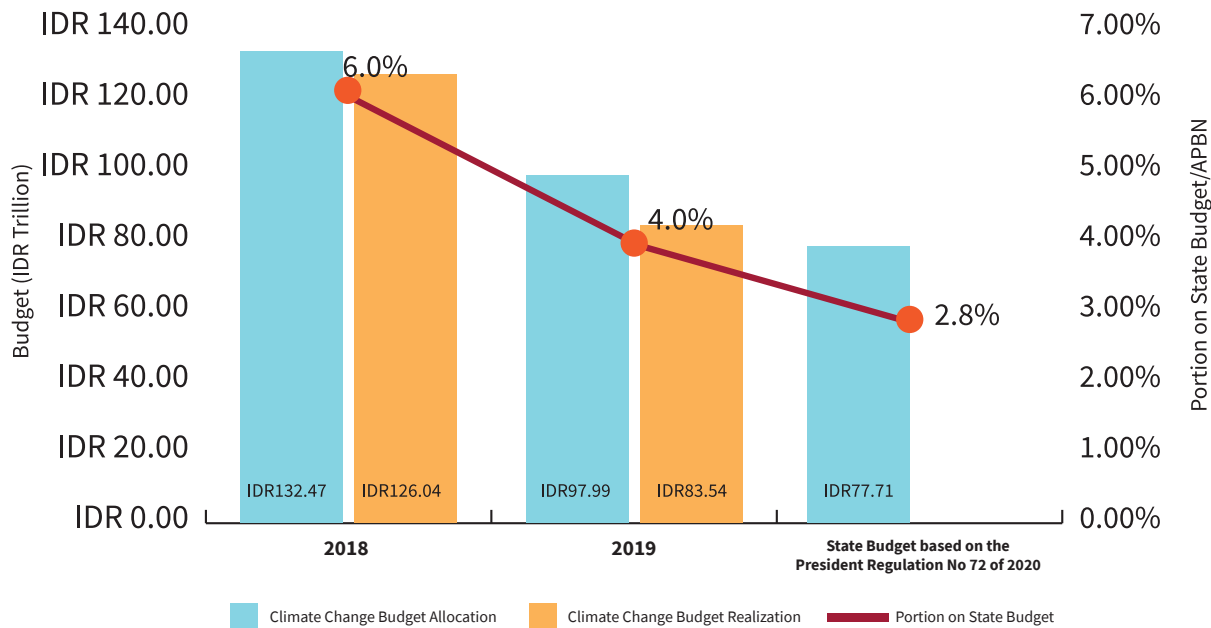
Comparison to State Budget (BILLION USD)

Fiscal Year	Climate Budget	State Budget			Percentage of Climate Budget to State Budget
		Central Expenditure	Local Transfer	Total	
2018	9.43	103.52	54.53	158.05	6.0%
2019	6.95	116.32	58.84	175.16	4.0%
2020*	5.53	140.58	54.37	194.95	2.8%

\*State Budget based on the President Regulation No 72 of 2020

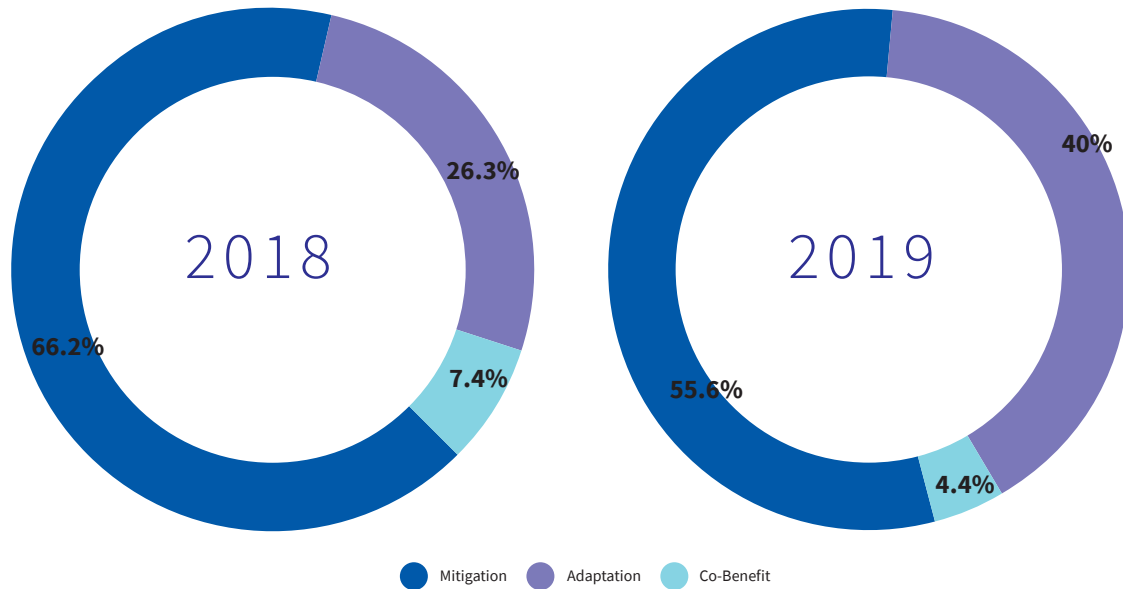


## ALLOCATION AND REALIZATION OF THE CLIMATE CHANGE BUDGET 2018-2020 (IDR TRILLION)



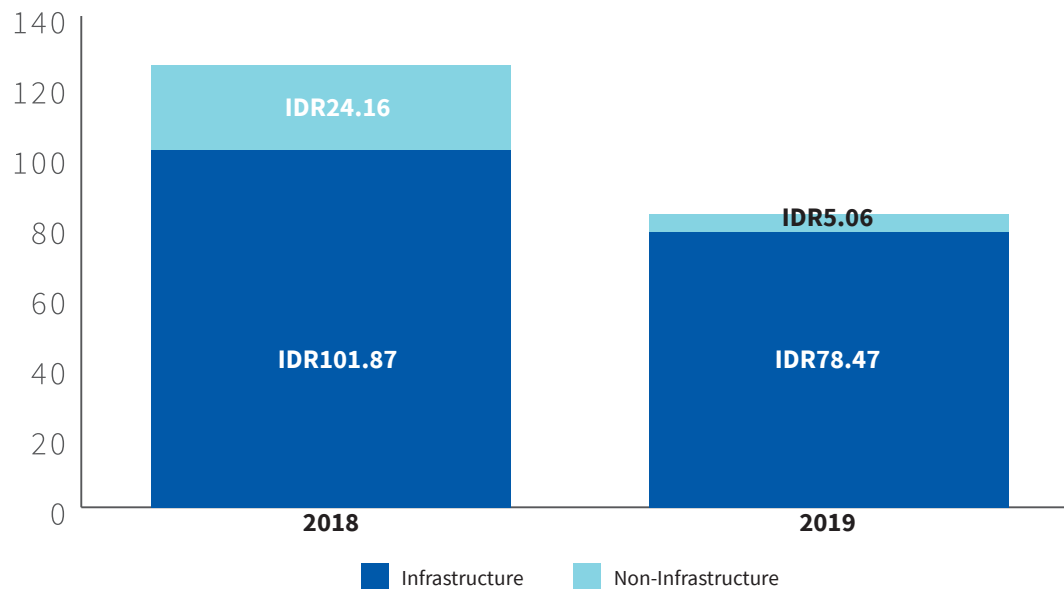
There has been a downward trend in climate change budget allocations over the past three years (2018-2020), caused by a decrease in the amount of output and a change in the composition of the type of output for climate change mitigation and adaptation in Line Ministries/Institutions.

## CLIMATE CHANGE BUDGET REALIZATION BASED ON ACTIVITIES AND CO-BENEFIT (FY 2018-2019) (IDR TRILLION)



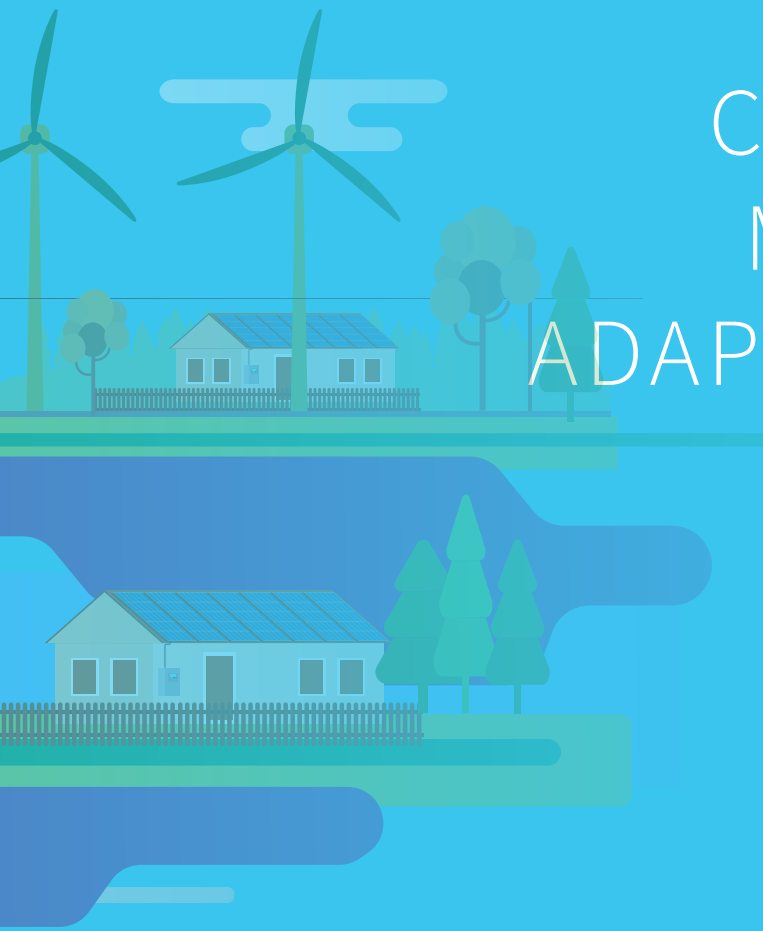
In 2018, around 66.2% of the climate change budget in the Central Government was primarily used to finance climate change mitigation activities, as well as in 2019 (55.6%).

## CLIMATE CHANGE BUDGET REALIZATIONS BASED ON THE OUTPUTS (FY 2018-2019) (IDR TRILLION)



Based on the type of output, the climate change budget of 2018 & 2019 were dominated by physical infrastructure development in waste management, energy, transportation, and agriculture sector.

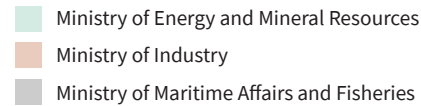
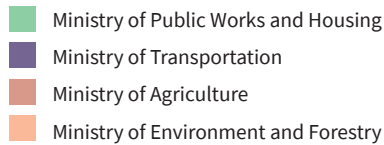
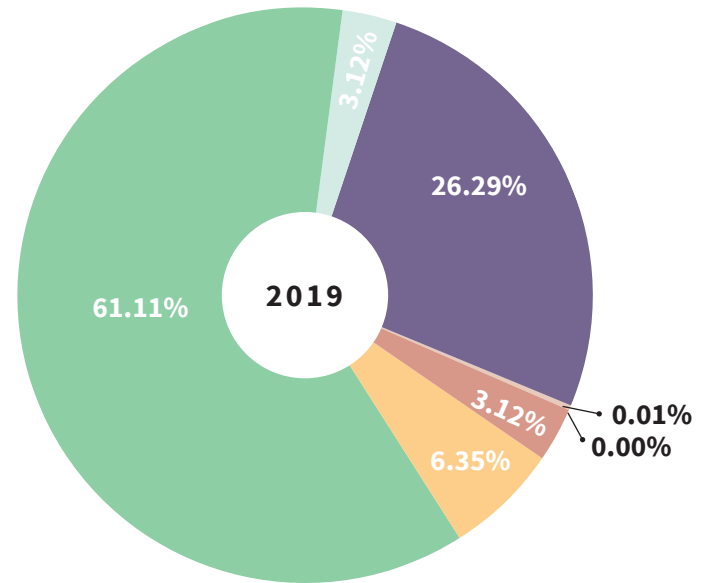
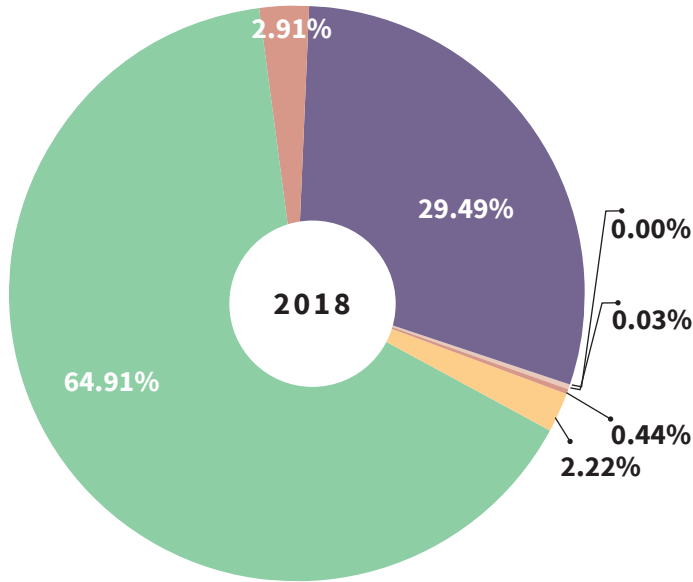




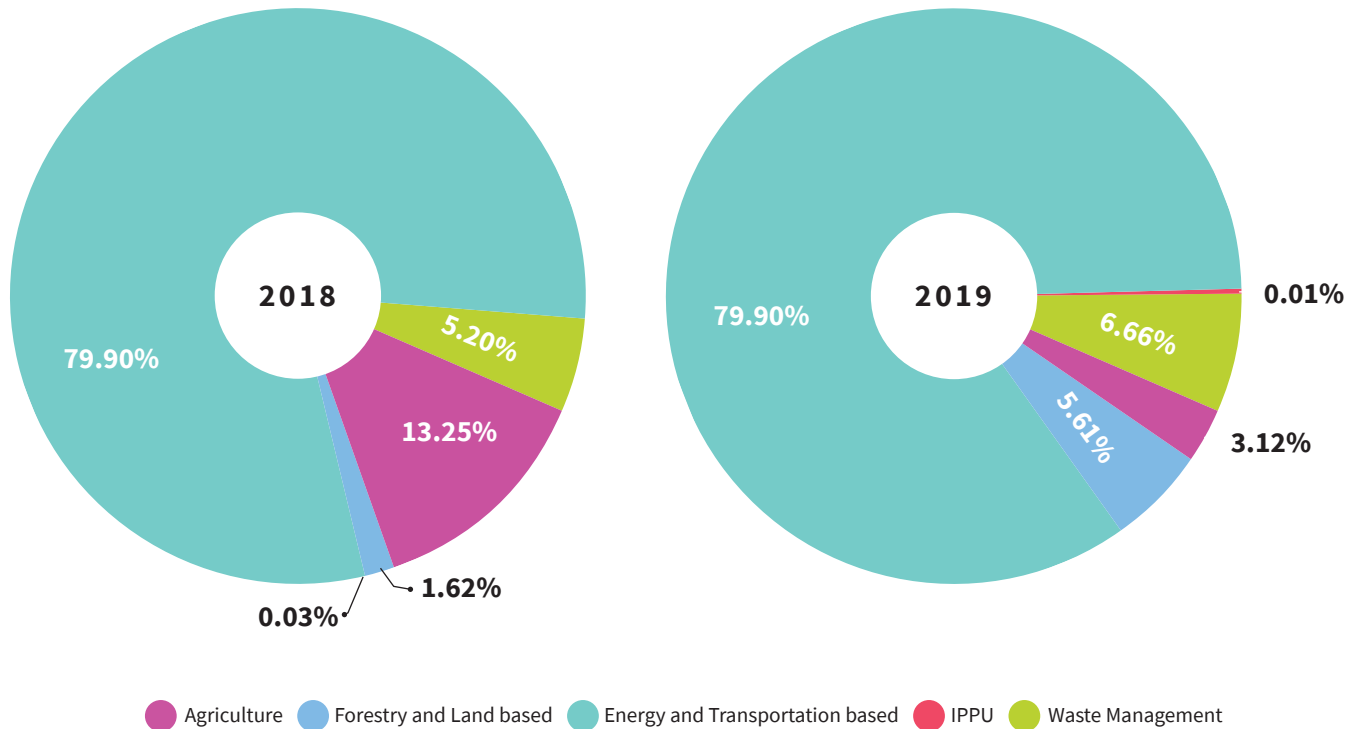
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# CLIMATE CHANGE MITIGATION AND ADAPTATION BUDGET

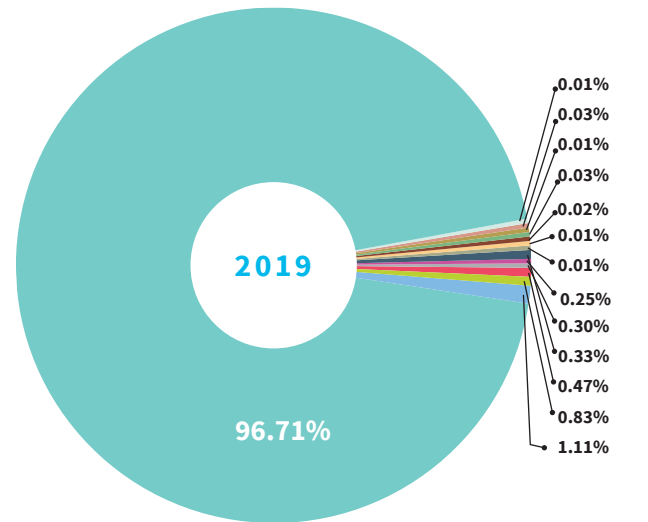
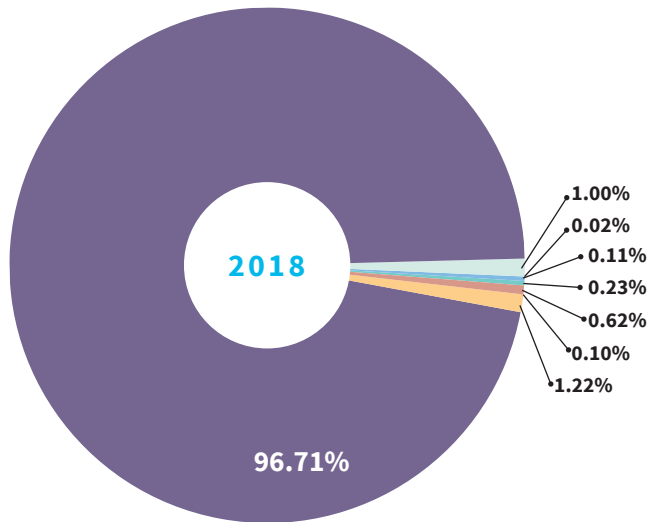
## CLIMATE BUDGET ALLOCATION FOR MITIGATION BY MINISTRIES/AGENCIES 2018-2019



## CLIMATE CHANGE BUDGET BY SECTOR



## CLIMATE BUDGET ALLOCATION FOR ADAPTATION BY MINISTRIES/AGENCIES 2018-2019

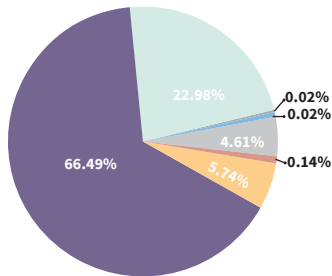
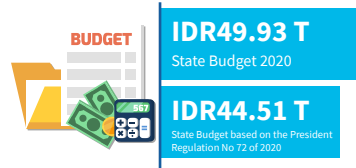




# CLIMATE CHANGE MITIGATION & ADAPTATION BUDGET 2020 (REFOCUSING)

Due to COVID-19 pandemic, the government priorities and strategies have shifted. The financial flow and 2020's budget are being re-allocated towards health and social sectors as a response to depress the impact of the crisis.

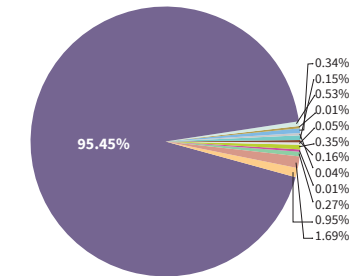
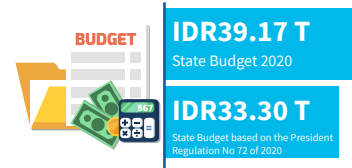
## MITIGATION & COBENEFIT



- Ministry of Agriculture
- Ministry of Environment and Forestry
- Ministry of Public Works and Housing
- Ministry of Energy and Mineral Resources
- Ministry of Transportation
- Ministry of Industry
- Ministry of Maritime Affairs and Fisheries

In 2020, the initial mitigation budget allocation is IDR 49.93 trillion. However, since the policy of refocusing activities and budget reallocation, the mitigation budget allocation has decreased by 11% to Rp44.51 trillion. The three ministries with the largest budget revisions are the Ministry of Energy and Mineral Resources, Ministry of Environment and Forestry, and the Ministry of Transportation.

## ADAPTATION



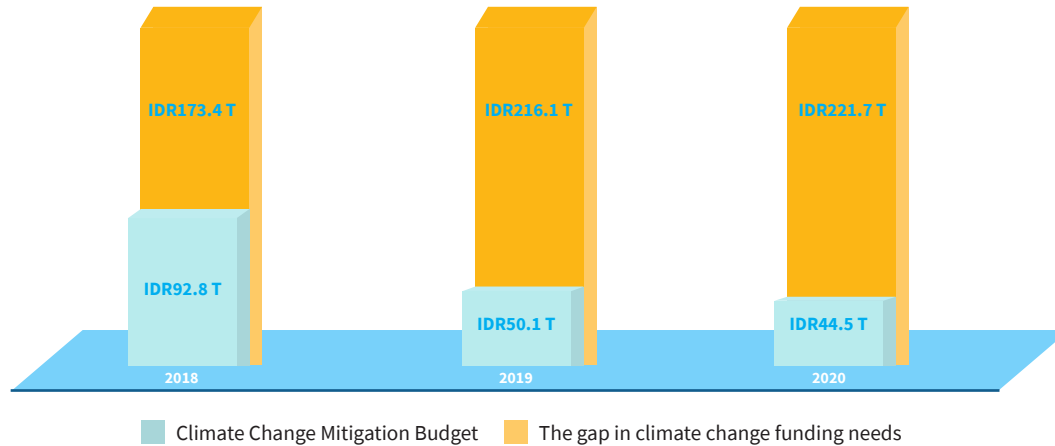
- Ministry of Agriculture
- Ministry of Environment and Forestry
- Ministry of Public Works and Housing
- Ministry of Social Affairs
- Ministry of Maritime Affairs and Fisheries
- Ministry of Land and Spatial Planning
- Ministry of Health

- Indonesian National Board for Disaster Management/BNPB
- Meteorological, Climatological and Geophysical Agency
- Geospatial Information Agency
- Statistics Indonesia
- National Institute of Aeronautics and Space/LAPAN
- Indonesian Academy of Sciences/LIPI

In 2020, the initial adaptation budget allocation is IDR 39.17 trillion. However, since the policy of refocusing activities and budget reallocation, the adaptation budget allocation has decreased by 15% to Rp33.30 trillion. The three ministries with the largest budget revisions are the Ministry of Public Works and Housing, the Ministry of Agriculture, and the Ministry of Environment and Forestry.

## ANALYSIS OF STATE BUDGET CAPACITY TO FINANCE CLIMATE CHANGE MITIGATION (BASED ON SECOND BUR REPORT, 2018)

Showing the fiscal capacity to finance mitigation actions in achieving NDC's target is still limited



Referring to the need for climate change funding in Second BUR Report which requires around IDR266.2 trillion per year, the State Budget (APBN) for the last three years has only been able to cover around 23.5% per year of the total climate change funding needs on average.

## THE PROCESS OF PILOTING CBT AT SUB-NATIONAL LEVEL

The Sub-National governments play a role in improving the economic and social welfare of the community, ensuring inclusive development, and maintaining the quality of the environment which includes dealing with climate change.

### PHASE 1

#### INTRODUCTION

Introducing Climate Budget Tagging and listing the data requirements to sub-national governments



### PHASE 2

#### TRAINING

Budget tagging, Sub-National Budget's (APBD) data collection for preparation study and mainstreaming climate change issues in the Sub-National Budget Planning (RAPBD)



### PHASE 3

#### VALIDATION

Socializing the Sub-National Climate Budget Tagging results



### PHASE 4





#### DISSEMINATION

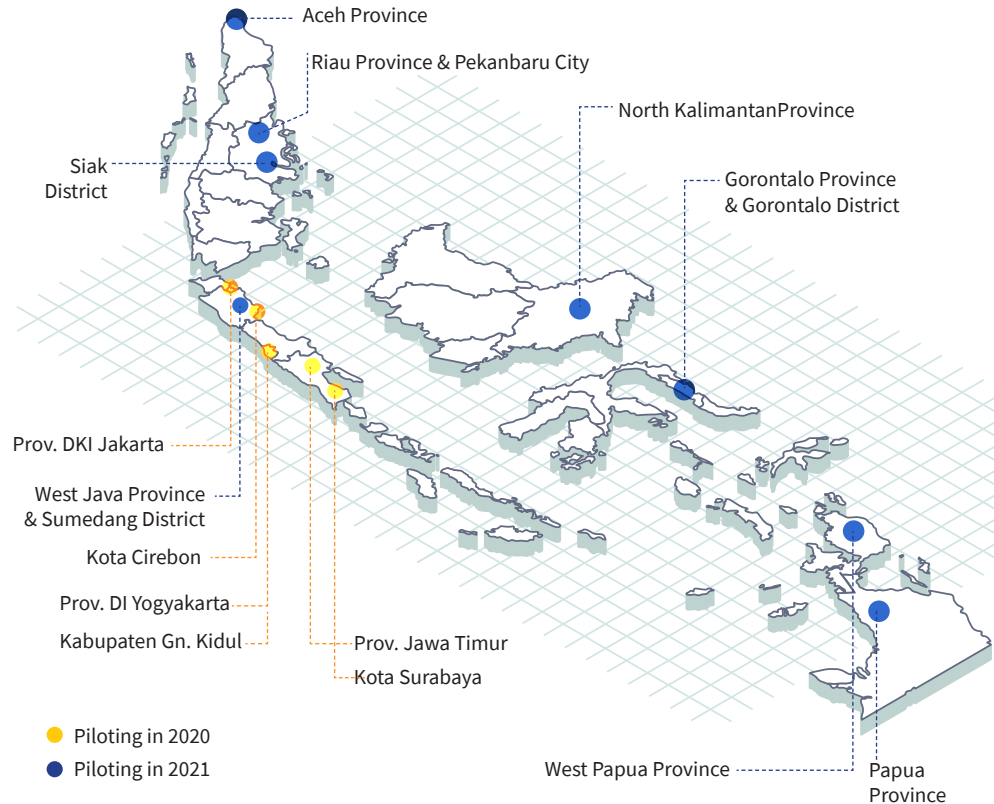
Disseminating the study of Climate Budget Tagging at Sub-National level to the public



## PILOTING CBT AT SUB-NATIONAL LEVEL 2020 AND 2021

The Ministry of Finance, through the Center for Climate Change and Multilateral Policy with support from UNDP, has conducted a pilot project for climate budget tagging in several provinces and districts, with the result of the rapid assessment as follows:

-  Sharpening the role of local governments in contributing to tackling climate change
-  Strengthening the coordination of central and local government
-  optimizing the benefits of budget tagging
-  Developing the climate change awareness ecosystem



# INDONESIA GLOBAL GREEN SUKUK

Since 2018, Indonesia's Green Sukuk issuance has raised over



(USD 2.75 billion and USD 490 million from the sovereign global and retail issuance consecutively)

The world's first sovereign green sukuk & world's first retail green sukuk

First country to issue green bond/sukuk three times consecutively

## Global Green Sukuk Issuance

2018



USD  
1.25 billion



Tenor  
5-years



Yield  
3.75% p.a.



Investor spread: 18% USA, 15% Europe, 32% Middle East, and 35% Asia

2019



USD  
750 million



Tenor  
5.5-years



Yield  
3.90% p.a.



Investor spread: 23% USA, 22% Europe, 29% Middle East, and 25% Asia

2020



USD  
750 million



Tenor  
5-years



Yield  
2.30% p.a.



Investor spread: 12% USA, 11% Europe, 32% Middle East, 40% Asia, and 5% Indonesia.

## Retail Green Sukuk Issuance

2019



IDR 1.46 trillion  
(USD 104.4 mln)



7,735 total investors



51.07% millennials, 48.66% Gen X, Baby Boomers, Traditionalist, 0.27% Gen Z

2020



IDR 5.4 trillion  
(USD 385.7 mln)



16,500 total investors



44.51% millennials, 23.31% baby boomer, 29.4% gen X, 2.19% traditionalist, 0.34% Gen Z

## Sectors financed by Green Sukuk (2018-2020)



Renewable  
Energy



Energy  
Efficiency



Waste to Energy &  
Waste Management



Resilience to  
Climate Change



Sustainable  
Transport

## Projected Emission Reduction from Global Green Sukuk Issuance


5.7 Mt  
**CO<sub>2</sub>e**  
1st issuance  
(2018)

3.2 Mt  
**CO<sub>2</sub>e**  
2nd issuance  
(2019)


Over  
**690** km  
off railway  
track  
construction



Improved solid  
waste management  
for more than  
**5** million  
households



**7.3**  
million kWh  
of electricity  
capacity generation




 **SUSTAINABLE  
DEVELOPMENT GOALS**





**SUSTAINABLE  
DEVELOPMENT  
FINANCING  
PHASE 2**

*Mobilizing Green Finance Through Fiscal Policies*



**Poverty-Environment Action**  
*for Sustainable Development Goals*



European Union



**Austrian  
Development  
Cooperation**  
Austrian Development Agency



NORWEGIAN MINISTRY  
OF FOREIGN AFFAIRS  
Norwegian Ministry  
of Foreign Affairs



Swedish International  
Development Cooperation Agency



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