



REPUBLIC OF INDONESIA

PROGRESS OF ADDRESSING
CLIMATE CHANGE
IN INDONESIA

2010-2014



MINISTRY OF NATIONAL DEVELOPMENT PLANNING/
NATIONAL DEVELOPMENT PLANNING AGENCY (BAPPENAS)

SEPTEMBER 2014



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FOREWORD

Indonesia commits to continuously reducing greenhouse gas emission as part of improved sustainable development. In a larger scale, Indonesia also aims to contribute to overcome global warming. Addressing climate change does not only involve mitigation actions, but also adaptation actions to improve community's resilience to climate change. Both measures have been one of Indonesia's development priorities, not only at the national level, but also at regions across Indonesia.



Climate change is mainstreamed into National Development Plan and becomes Climate Change cross-sectoral program in the 2010-2014 National Medium-Term Development Plan document. In order to implement the program, GHG emission reduction/climate change mitigation action plan has been issued as a Presidential Regulation No. 61 Year 2011 on the National Action Plan for Greenhouse Gas Emission Reduction (RAN-GRK). At the local level, climate change related policies have also been set out in Local Development Plan, both at medium term local development plan (RPJMD) and annual local development plan (RKPD). Implementation of mitigation action plan at the local level is regulated under a Governor Regulation of Local Action Plan for Greenhouse Gas Emission Reduction (RAD-GRK). Each province in Indonesia developed RAD-GRK in 2012. In 2013, the Government set a more comprehensive effort to address climate change by issuing National Action Plan on Climate Change Adaptation (RAN-API) as a guideline for relevant stakeholders for carrying out climate change adaptation actions.

This report outlines various concrete steps in addressing climate change, both in mitigation and in adaptation as well as their relevance to national development. It also provides information about financing of climate change and reports some initial concrete steps in the field, based on monitoring result of climate change actions. Next steps that need to be taken are described in the last section of this report.

I hope this report provides concise information on the progress of addressing climate change in Indonesia, starting from 2010 to 2014. There are still gaps in implementation and many rooms for improving the management as well as the monitoring and reporting of the actions. Hopefully this report can serve as a tool to share information and experience from the Government of Indonesia in mainstreaming climate change which encompasses mitigation and adaptation actions into concrete actions in order to support national development.

We would like to extend our gratitude to various stakeholders from related Ministries and Government Agencies, especially those under the Climate Change National Coordination Team, various stakeholders from Local Government and other stakeholders and development partners who have and will continue to address climate change in Indonesia as part of global climate change actions.

Jakarta, September 2014

Prof. Dr. Armida S. Alisjahbana, SE, MA

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GLOSSARY

3R	: Reduce, Reuse, Recycle
APBD	: Regional Budget
APBN	: State Budget
APL	: Other Use Areas
BAU	: Business as Usual
Bappenas	: National Development Planning Agency
BMKG	: Indonesian Agency for Meteorology, Climatology and Geophysics
COP	: Conference of Parties
CSR	: Corporate Social Responsibility
DEEP	: Debottlenecking Project Finance for Least Cost Renewable in Indonesia
DNPI	: National Council on Climate Change
GHG	: Greenhouse Gas
GRLK	: Critical Land Rehabilitation Movement
K/L	: Ministries or Agencies
KLHS	: Strategic Environmental Assessment
KPA	: Proxy of Budget User (Kuasai Pengguna Anggaran)
ICCTF	: Indonesian Climate Change Trust Fund
IPCC	: Inter-governmental Panel on Climate Change
LWA	: Trust Fund (Lembaga Wali Amanat)
MER	: Monitoring, Evaluation and Reporting
MP3EI	: Masterplan for Acceleration and Expansion of Indonesia's Economic Development
MRV	: Measurable, Reportable and Variable
MWA	: Board of Trustees (Majelis Wali Amanat)
NAMA	: Nationally Appropriate Mitigation Actions
NIE	: National Implementing Entity
Perpres	: Presidential Regulation
PLTPH/PLTM	: Pico/Mini Hydro Power Plant
PLTMH	: Micro Hydro Power Plant (PLTMH)
PDA	: Trustee (Pengelola Dana Amanat)
PJU	: Public street lighting
PLN	: State-owned Electricity Company
PLTBm	: Biomass Power Plant
PLTS	: Solar Power Plant
PPCK	: Carbon Stock Reduction Prevention
PPP	: Public Private Partnership
PPN	: National Development Planning
RAN-GRK	: National Action Plan for Greenhouse Gas Emission Reduction
RAD-GRK	: Local Action Plan for Greenhouse Gas Emission Reduction

RAN-API	: National Action Plan on Climate Change Adaptation
REDD+	: Reducing Emissions from Deforestation and Forest Degradation
Renstra	: Strategic Plan
RKPD	: Local Government Action Plan
RPJMN	: Medium Term Development Plan
SHS	: Solar Home System
SKPD	: Government Work Units
SLPTT	: Integrated Park Management School
SRI	: Rice Intensification System
SSLI	: Smart street Lighting Initiative
SUTRI	: Sustainable Urban Transport Indonesia
SWEET	: Sustainable Wood to Effective Energy Technology
TPA	: Final Disposal
TPS	: Temporary Transfer Station
UNFCCC	: United Nations Framework Convention on Climate Change
UPPO	: Organic Fertilizer Management Unit
VIMSWa	: Vertically Integrated Municipal Solid Waste

I. INDONESIA'S ROLE IN GLOBAL CLIMATE CHANGE ACTIONS



I. INDONESIA'S ROLE IN GLOBAL CLIMATE CHANGE ACTIONS

As a large country, Indonesia has successfully maintained its economic growth rate at around 4.5%-6.5% per annum in the last 10 (ten) years. Decrease in unemployment has been a continuous trend hence poverty level has reduced. However, population growth and improving economy need to be balanced by increasing the provision of basic human needs, including needs for food, energy and water. Such increase may escalate the potential of greenhouse gas emissions. With the population being at the world's fourth rank and such high economic growth rate, the provision of energy needs significant improvement, accompanying the increase in energy consumption, which is not only for household use, but also for production sector. Waste generation by public that especially resulted in greenhouse gas (GHG) emissions will also increase due to massive number of social activities and mobility. In other words, Indonesia has the potential to contribute to climate change and play important roles in addressing the causes of climate change.

Related to this, Indonesia's active role commenced since it assumed a task as a host to COP-13 UNFCCC in Bali, in 2007. As the host and President of the COP-13, Indonesia was successful in supporting the establishment of Bali Action Plan. The active role was then followed by the country's improved awareness and taking on greater responsibility in addressing climate change, as reflected in Indonesia's voluntary commitment to emission reduction by 26% from BAU (Business as Usual) from own initiatives and to reduction by 41% with international support in 2020.

To coordinate the implementation of the GHG emission reduction commitment, the Government of Indonesia has established a Climate Change National Coordination Team chaired by the Deputy Minister of Natural Resources and Environment, from Ministry of National Development Planning/Bappenas, with membership consisting of representatives of Ministries or Agencies (K/L) responsible for mitigation and adaptation. The tasks of the Climate Change National Coordination Team are carried out in accordance with the Decision of State Minister of PPN/Head of Bappenas No. Kep.38/M.PPN/HK/03/2012. The National Coordination Team has also a Local Coordination Team in each province, chaired by Governors with a secretariat based in the Local Development Planning Agency (Bappeda).

The National Council on Climate Change (DNPI) was also formed in 2008 as the focal point for climate change at the UNFCCC. Furthermore, to synergise international support for climate change for Indonesia with Indonesia's policies and measures, the Indonesia Climate Change Trust Fund (ICCTF) was established in 2009. When it started its operation financing projects in 2010 ICCTF cooperated with UNDP as the fund management during the transition period Q3 of 2014. Currently, based on the Presidential Regulation No. 80 Year 2011 on Trust Fund, ICCTF is in the process of becoming a National Trust Fund with the appointment of Bank Mandiri as ICCTF trustee. Specifically for coordination on REDD+, in 2010 REDD+ (Reducing Emissions from Deforestation and Forest Degradation) Task Force was formed, which later evolved into an REDD+ Agency based on the Regulation of the President of the Republic of Indonesia No.62 Year 2013 on Management Agency for Reduction of Greenhouse Gas Emission from Deforestation, Forest and Peat land Degradation.

DNPI has established Climate Centre as a communication forum with relevant stakeholders in addressing climate change. Through these fora, measures and actions to address climate change will not only be involving the National Government and Local Government, but will also engage non-governmental agencies and wider public; both within the country and in various international fora, as a concrete form of Indonesia's commitment in addressing climate change.

II. DEVELOPMENT OF NATIONAL POLICY IN ADDRESSING CLIMATE CHANGE



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To carry out national GHG emission reduction commitment, policy(es) related to climate change were included in the RPJMN 2010-2014, and specifically detailed under Climate Change Cross-Sectoral Program. These policies were further developed as a National Action Plan for Greenhouse Gas Emission Reduction (RAN-GRK). In 2011 the action plan was issued in the form of Presidential Regulation No.61/2011. RAN-GRK already mainstreamed as a cross-sectoral program in the RPJMN 2010-2014 which allow funding allocation (for the action plan) be estimated and secured.

In line with decentralisation policy, and as stipulated in the Presidential Regulation No.61/2011, Governors are obliged to develop Local Action Plan for Greenhouse Gas Emission Reduction (RAD-GRK) to reduce GHG emission in their respective province. In this context, the national Government in cooperation with local government has developed 33 Provincial RAD-GRK ratified by a Governor Regulation. With such regulation, governors are able to collaborate with District/City Governments to reduce emissions in their regions.

Complementing these efforts, in 2014 Ministry of PPN/Bappenas issued National Action Plan for Climate Change Adaptation (RAN-API). The RAN-API consists of adaptation steps/actions to improve people's resilience especially farmers, fishermen, and coastal communities in dealing with climate change, as well as to protect particular areas which are vulnerable to climate change. In the RAN-API, action plans of 15 cities have been identified as the initial steps to climate change adaptation. Therefore, in 2014 the Government of Indonesia has thoroughly put in place policies and steps/actions of climate change mitigation and adaptation.

In line with the above steps, greenhouse gas emission reduction calculation is conducted through a national greenhouse gas inventories system as set out in Presidential Regulation (Perpres) No.71 Year 2011. With the regulation No. 71/ 2011, steps to ensure the availability of GHG emission data on the level, status, and development trends on a regular basis can be taken by the Minister of Environment. To operationalise the Presidential Regulation, the Minister of Environment issued the Regulation of Minister of Environment No. 15 Year 2013 on the Guideline for MRV (Measurable, Reportable, and Verifiable) Implementation. In brief, the development of national policy(es) on climate change can be seen in Figure 1.



Figure 1. Development of National Policy(es) on Climate Change

2.1. National Action Plan for Greenhouse Gas Emission Reduction (RAN-GRK)

As an action plan, RAN-GRK consists of: (i) emission reduction target and allocated sectoral target for 5 (five) strategic sectors, namely forestry and peat land, agriculture, energy and transportation, industry, and waste; (ii) strategies, programs and activities contributing to emission reduction; (iii) authority responsible for program and activity, especially line ministries (K/L). Target allocated per strategic sector as provided in Table 1 supports the sectors in setting up mitigation activities.

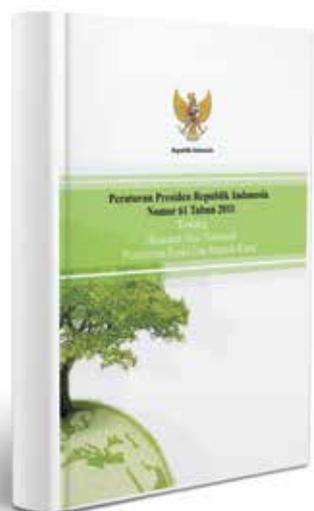


Table 1. Emission Reduction Targets in 5 Key Sectors by 2020 based on RAN-GRK

Sector	Reduction Target (million ton CO ₂ e)	
	26%	41%
Forestry and Peat Land	672	1,039
Agriculture	8	11
Energy & Transportation	36	56
Industry	1	5
Waste Management	48	78
Total	767	1,189

To support the priority sectors, several supporting activities have been set to strengthen policy framework, build the capacity and improve research. In total, there are 123 programs consisting of 50 main activities and 73 supporting activities to be conducted by 15 relevant K/L (Table 2). Mitigation targets, programs, and activities set out in RAN-GRK can be reviewed periodically to improve the effectiveness.

Table 2. Main Activities in RAN-GRK

#Sector	Main Activities	
1. Forestry and Peat Land	<ul style="list-style-type: none"> Development of forest management unit Planning for use and improvement of forest estate use. Development of environmental service utilization The enactment of forest estate Rehabilitation and reclamation of forests and lands in priority watersheds 	<ul style="list-style-type: none"> Social forestry development Forest fire control Investigation and guarding of forests Development of conservation areas, essential ecosystem & protected forest development program Improvement of plantation forest business.
2. Agriculture	<ul style="list-style-type: none"> Land optimization Application of Crop Production Technologies Use of organic fertilizers and bio pesticide Estate crops area development (oil palm, rubber, cacao) in non-forest land/ abandoned land/ degraded land/ Other Use Areas (APL) 	<ul style="list-style-type: none"> Use of animal manure/urine and agricultural waste for biogas Peat land management for sustainable agriculture Development of farming land management in abandoned & degraded peat lands to support plantation, livestock and horticulture sub-sectors
3. Energy	<ul style="list-style-type: none"> Energy conservation partnership program New and renewable energy supply and management Biogas utilization Use of natural gas as fuel for urban public 	<ul style="list-style-type: none"> transport Use of connections to houses supplied with natural gas through pipes. Post-mining land reclamation Bio-diesel utilization

4. Industry	<ul style="list-style-type: none"> • Application of process & technology modification in cement industry • Energy conservation and audit to form industrial management system in 8 industry sectors, namely: cement, steel, pulp and paper, glass and ceramics, fertilizers, petrochemicals, food and drinks, textile, textile products as well as basic chemicals industries. - Elimination of Ozone Depleting Substances in refrigerants, chillers, and fire extinguishers
5. Waste Management	<ul style="list-style-type: none"> • Waste management in TPS (temporary transfer station) 3R (Reduce, Reuse, Recycle) & TPA (final disposal) • Urban waste water management

2.2. Local Action Plan for Greenhouse Gas Emission Reduction (RAD-GRK)

The implementation of emission reduction activities in the regions is carried out in accordance with the Local Action Plan for Greenhouse Gas Emission Reduction (RAD-GRK). RAD-GRK guideline was completed in 2012 and was launched nationally on December 19, 2012 in Jakarta. In the development, mitigation actions within the RAD-GRK were suited to RPJMD, RPKD, Local Strategic Plan (Renstrada) and other local development planning documents. The

RAD-GRK development involved all stakeholders at the central and local level through intensive coordination. Support from experts both from members of the Climate Change National Coordination Team (from line ministries), and universities especially in the regions as well as international organizations have been very significant.



RAD-GRK activities in the land-based sector generally include forest rehabilitation and forest carbon stock reduction prevention. Meanwhile, the activities in the agricultural sector generally include sustainable agricultural activities, the management of animal faces/manure which generate methane. The activities in the energy sector are electricity development from new and renewable energies, biogas utilization to replace kerosene, and energy efficiency. The implementation of RAD-GRK by local government is described in Table 3.

Table 3. Implementation of RAD-GRK, 2010-2013

Sector	Mitigation Action
Forestry	Prevention of Carbon Stock Decrease Carbon Stock Enhancement
Agriculture	Organic Fertilizer Management Unit (UPPO) Integrated Park Management School (SLPTT) Rice Intensification System (SRI) Other activities
Energy	Off Grid Pico/Mini Hydro Power Plant (PLTPH/PLTM) Off Grid Micro Hydro Power Plant (PLTMH) Solar Power Plant (PLTS)/ Solar Home System (SHS) Off Grid Solar Power Plant for Public Street Lighting (PJU). Off Grid Palm Kernel Shell Biomass Power Plant (PLTBm) Kerosene substitution to Biogas Use of Energy-Saving Lights Gas Engine Installation for TPST (Integrated Transfer Station) Green Building

Transportation	Car Free Day Intelligent Transport System Bus Rapid Transit Public Transport Rejuvenation Parking Management
Waste Management	Development of Final Disposal (TPA) Implementation of 3R (Reduce, Reuse, Recycle)

Source: RAN-GRK Secretariat, Bappenas.

2.3. National Action Plan for Climate Change Adaptation (RAN-API)

To complement the mitigation actions, in 2013 the development of the National Action Plan for Climate Change Adaptation (RAN-API) was initiated. The adaptation plan intended to gather the necessary adaptation measures and improve the required adaptive capacity, especially among farmers, fishermen, and coastal communities vulnerable to climate change.

Based on vulnerability assessment results, there were 15 regions vulnerable to climate change impacts, which includes: western and southern parts of Sumatera; western and eastern parts of Java, Papua; almost all regions of Bali and Nusa Tenggara; northern parts of Kalimantan as well as northern parts of Sulawesi. Efforts to encourage the vulnerable regions to carry out adaptation will be continuously carried out in the future. Currently, the provinces of DKI Jakarta, North Sumatera and East Nusa Tenggara, which are among the most vulnerable regions in Indonesia, have started to develop Climate Change Vulnerability Assessment as the basis for developing Climate Change Adaptation Strategy and Actions. Adaptation actions are nationally required to secure the national economic, social and food security activities, as well as to protect the life and welfare of the people.

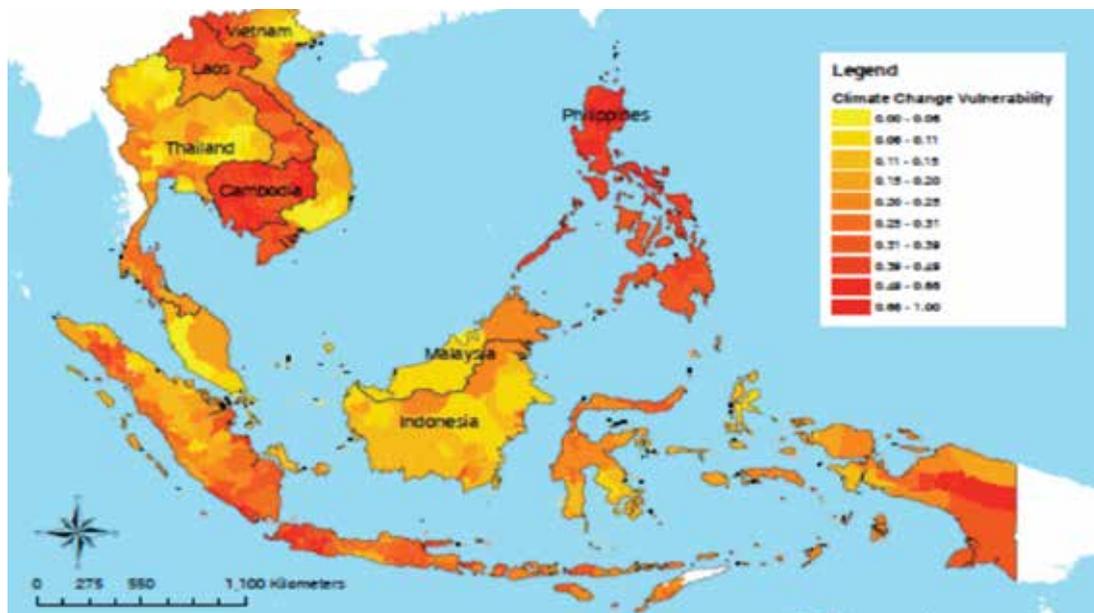


Figure 4. Regions Vulnerable to Climate Change in Indonesia (SIDA, 2009 in RAN-API)

Specifically, RAN-API targets are aimed at: (i) developing economic security, (ii) developing (social) life structure that is resilient to climate change impacts (livelihood resilience), (iii) maintaining environmental ecosystem service sustainability (ecosystem resilience), (iv) strengthening regional resilience especially in urban areas, coastal areas and small islands, and supporting ecosystem including data and information, capacity building as well as research and development.

The development of RAN-API document was carried out by considering the needs of the people, both male and female, equally. The gender aspect is highly considered according to the inputs from the Working Paper of Policy on Gender Mainstreaming in Climate Change Adaptation in Indonesia (Bappenas, 2012). The RAN-API document has been integrated into Disaster Risk Reduction issues which are closely related to climate change adaptation.

Adaptation efforts to address adverse climate change impacts are dependent on the characteristics of the regions and climate condition. Therefore, it is necessary to have climate change adaptation risk and strategy assessments in the development of indicators and in the reporting of climate change impact program responses. In this framework, the initial implementation of RAN-API has been formulated into adaptation actions in 15 pilot cities/ regions, as presented in Table 4.

Table 4. Summary of Evaluation on Vulnerability Assessment for Pilot Locations of RAN-API Activities

No	Pilot Project Locations	Vulnerability Assessment	Action Cluster	Suitability to RAN-API
1.	Bali Province	Agriculture	Training for farmers, establishment of farmers' cooperative, supply of prime seeds	Economic Security sector, Food Security sub-sector
2.	Semarang City	Economic Infrastructures and Settlement	Tidal flood control	Livelihood Resilience sector, Settlement sub-sector; and Special Area Resilience Sector, Coastal Areas and Small Islands sub-sector
3.	Pekalongan City	Settlement Sector and Public Work sector	Tidal rob, clean water and sanitation	Special Area and Small Islands Resilience sector
4.	West Java Province	Clean Water sector		Livelihood Resilience sector, Infrastructure and Health sub-sectors
5.	Blitar City	Agriculture sector, Clean Water sector, and Health sector	Food production system, infrastructure adaptive to climate change, strengthening disaster outbreak alertness	Livelihood Resilience sector, Infrastructure and Health sub-sectors
6.	Bandar Lampung City	Infrastructure sector (Clean Water, Drainage, Waste, Settlement, Coastal Areas, Fishery, Health and Education)	Clean water supply, ground water conservation, waste management, coastal community empowerment, education and health quality	Special Area and Small Islands Resilience sector
7.	East Java Province	Agriculture sector and Clean Water Sector		Economic Security sector, Food Security sub-sector
8.	Malang District	Agricultural sector (corn, apple), Clean Water, Landslide Threat sector, and Health sector	Making of retention basin (embung), certified seeds, agricultural infrastructure, irrigation and drinking water network, reforestation, etc.	Economic Security sector, Food Security sub-sector; Livelihood Resilience sector, Infrastructure sub-sector
9.	Batu City	Agricultural sector (apple production area)	Certified seeds, organic fertilizer, rejuvenation and extension of apple crop, agricultural facilities and infrastructures	Economic Security sector, Food Security sub-sector

No	Pilot Project Locations	Vulnerability Assessment	Action Cluster	Suitability to RAN-API
10.	Malang City	Agricultural sector, Clean Water and Landslide Threat sector	Development of irrigation and drinking water network, supply and management of clean water, development of healthy environment, and reforestation.	Livelihood Resilience sector, Infrastructure and Health sub-sectors
11.	NTB Province	Agricultural sector (Food Security)		Economic security sector, Food Security sub-sector
12.	Lombok Island	Agricultural sector, Estate Crops sector, Forestry sector, Fishery and Coastal Area sector, Health sector, and Clean Water sector	Anticipation for clean water shortage, anticipation for tidal and abrasion hazards	Special Area and Small Islands Resilience sector, Livelihood Resilience sector,
13.	Tarakan District	Health sector	Development of irrigation and water network, supply and management of clean water, and development of healthy environment	Infrastructure and Health sub-sectors
14.	South Sumatera Province	Coastal area and Agricultural sectors and Health sector		Livelihood Resilience sector, Infrastructure and Health Sub-Sectors
15.	North Sumatera Province	Agricultural sector, Clean Water sector, Urban and Coastal Areas sectors		Economic Resilience sector, Food Security sub-sector

Source: RAN-API 2014

In relation to climate change adaptation, data and information on vulnerable areas and communities are needed as basis for building the capacity of the people in addressing and adapt to climate change adverse impacts. This need has been supported by the availability of climate data from BMKG and Data Information and Vulnerability Index System / SIDIK instrument in the Ministry of Environment. Currently, Disaster Vulnerability indicators and Resilience indicators are being developed to identify adaptation steps and adaptive capacity necessary, and to monitor RAN-API implementation progress.

2.4. Monitoring, Evaluation and Reporting (MER) of RAN/RAD-GRK



Monitoring of mitigation actions implementation is conducted in 2 (two) ways. The first is monitoring of emission reduction as the result of mitigation actions/ activities conducted by the parties at national and provincial levels. The result of monitoring is reported in accordance with the following regulations: i) The Government Regulation No. 39/2006 on Regulation and Evaluation Procedure of Development Plan; ii) the Government Regulation No.8/2008 on Development, Regulation and Evaluation Procedure of Local Government Plan Implementation; as well as iii) the Regulation of Minister of Home Affairs No.

54/2010 on the implementation of the Government Regulation. MER primarily focuses on the implementation of activities funded by State Budget (APBN), Regional Budget (APBD) and other official non-binding sources. Implementation of MER is under coordination of the Ministry of National Development Planning/ Bappenas.

The second monitoring is inventory of emission reduction as the results of mitigation actions implementation, in accordance with the Presidential Regulation No.71/ 2011 on Greenhouse Gas Inventory. The Ministry of Environment conducts the inventory. In 2013, the Ministry of Environment already issued Regulation of Minister of Environment No. 15/2013 on Guideline for MRV Implementation. Based on the regulation, the Minister of Environment established a National MRV Commission whose main task is to assess the results of measurement, reporting and verification of emission reduction resulted from mitigation actions implementation, and to conduct National Registry System. The relation between the two monitoring system is described in the Figure 2, as follows.

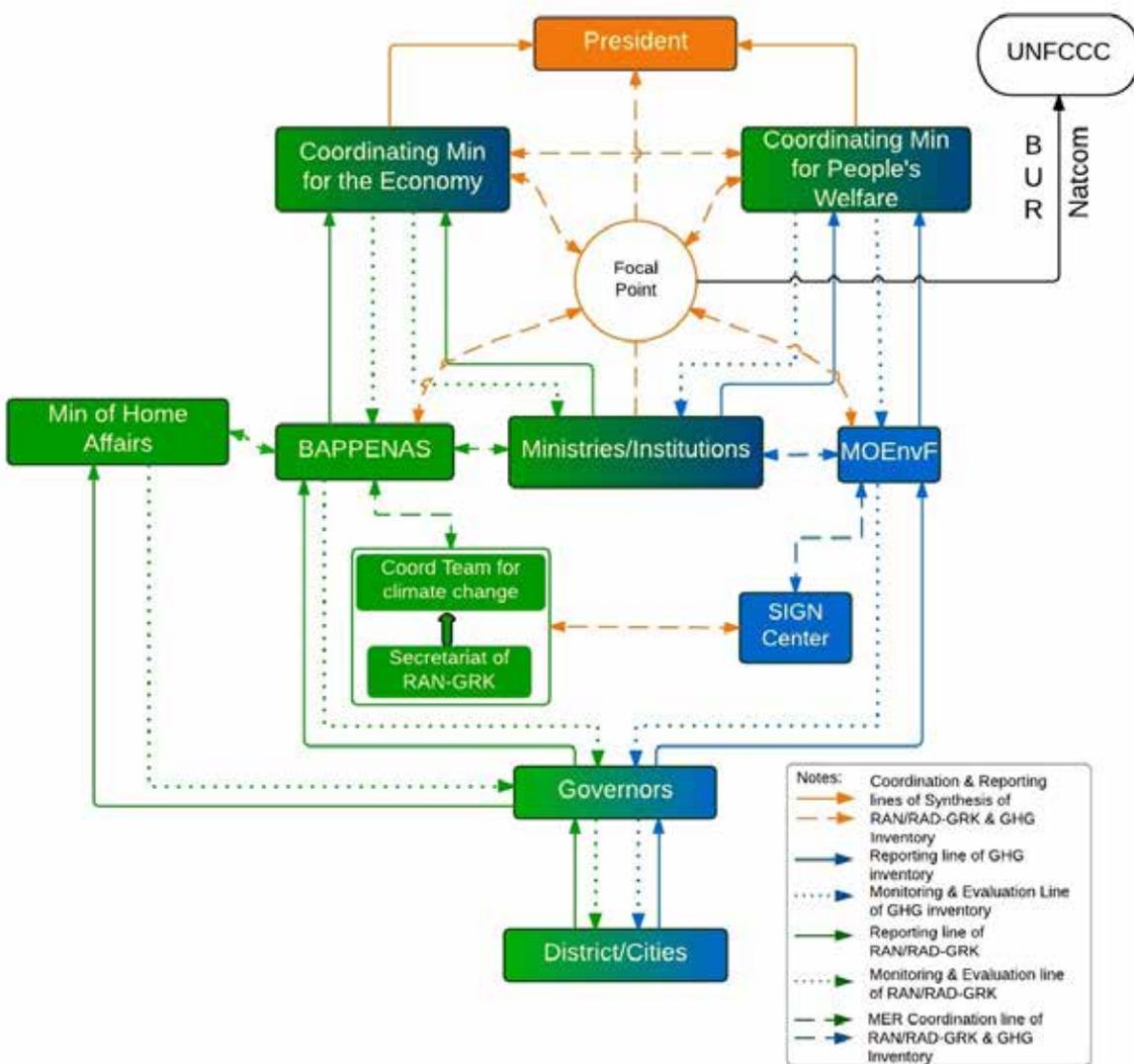


Figure 2. Implementation and Reporting System of RAN/RAD-GRK and National GHG Inventory

in relation to reporting, the implementation of the implementation of mitigation actions by K/L and local governments' is reported based on the General Guideline and Technical Guideline² as guidance for related stakeholders both at the national and provincial levels. The MER General Guideline consists of concise explanation on the substance as well as organizational structure and mechanism of MER at the national and provincial levels. The MER Technical Guideline explains the steps to fill in information on GHG mitigation activities and calculation of GHG emission reduction for the five key sectors as explained earlier.

The objectives of Monitoring, Evaluation and Reporting are:

- To improve effective collection of data and information concerning the implementation of mitigation actions.
- To prepare evaluation materials for reviewing and improving RAN and RAD-GRK implementation.
- To provide reports on activities reducing GHG emission as materials for the national GHG emission reduction planning in the following years.

At the national level, the main coordinator of MER implementation is the Coordinating Minister for Economy. The Minister of PPN/Bappenas is the technical coordinator, while the responsible parties to implement MER activities are the relevant Ministers/head of Agencies. At the provincial level, the responsible party and coordinator of MER of RAD-GRK is the governor, while the responsible parties to conduct MER of RAD-GRK are the heads of provincial Government Work Units (SKPD) following to the relevant sectors.

MER is reported twice in a year, namely in the second week of October (interim report), and the second week of January (final report). The submission of the interim report to the President as the Chairman of DNPI is conducted in the second week of November, and the submission of the final report is in the second week of February.

Mitigation actions as formulated in RAD-GRK are not only aimed to reduce GHG emissions but also to deliver better quality development as well as to overcome certain existing constraints. For example, a mitigation action in energy sector formulated in RAD-GRK in Central Sulawesi overcomes energy constraints, in particular shortage of energy supply (Box 1).

Box 1. Energy Sector Mitigation Actions in Central Sulawesi

The indication of GHG emission reduction in Central Sulawesi until 2012 was 702.65 ton CO₂e. The emission reduction is a result of development of renewable energy, namely: i) development of PLTS (Solar Power Plants) in South Bungku sub-district, Menuai Kepulauan sub-district (year 2010); ii) development of PLTMH (Micro-Hydro Power Plant) in East Bungku sub-district and Morowali district (year 2010); iii) development of PLTH (Hydro Power Plant) in Soyo Jaya sub-district, East Bungku subdistrict and Bahodopi subdistrict (year 2010); (iv) development of PLTS in Toli Toli district, Koso district, Touna district, Banggai Kepulauan district (year 2012) (v) development of PLTMH in Lamantoli village of South Bungku district (year 2012)

Further, the implementation of RAD-GRK is also an opportunity to improve in forest governance and watershed protection to save water supply for drinking water, water for industrial need and irrigation (Box 2).

Box 2. Forestry Sector Mitigation Action of West Java Province

West Java Province has enacted RAD-GRK through Governor Regulation No.56/2012, which has been mainstreamed into the Provincial RPJMD. In order to implement the vision of “Comfortable West Java and Sustainable Strategic Infrastructure Development”, performance indicators for protected area have been developed to achieve 43-45 percent forest covering against the province’s total area. The emission reduction are expected as result of carbon stock reduction prevention (PPCK), particularly by forest and land rehabilitation activities, critical land rehabilitation movement (GRLK), improvement of Juanda Grand Forest Park management and coordination of water catchment area as well as watershed priorities. To carry out the activities, the provincial government allocated a budget of 68.9 billion rupiah from 2010 to 2012, and this predictably increased the carbon sequestration at 1.3 million ton CO₂e.

2.5. Nationally Appropriate Mitigation Actions (NAMAs)



A NAMAs framework, based on mitigation actions listed in RAN-GRK, has been developed in order to promote concern and support from international community. Based on the NAMAs framework, there are 2 types of NAMAs categories which can be developed, as follows:

1. Unilateral NAMAs, namely NAMAs funded by domestic funds, both national and/or provincial government’s funds as well as private sector and society (target 26%)
2. Supported NAMAs, namely NAMAs with international public funding support. The funding of NAMAs which includes grants can be channeled through ICCTF which was established by the Indonesian Government to synergize international funding sources with the national strategy (additional 15% towards 41%).

In addition to the two types of NAMAs, NAMAs support from the private sector is also possible to be conducted through Business to Business mechanism or through international carbon market.

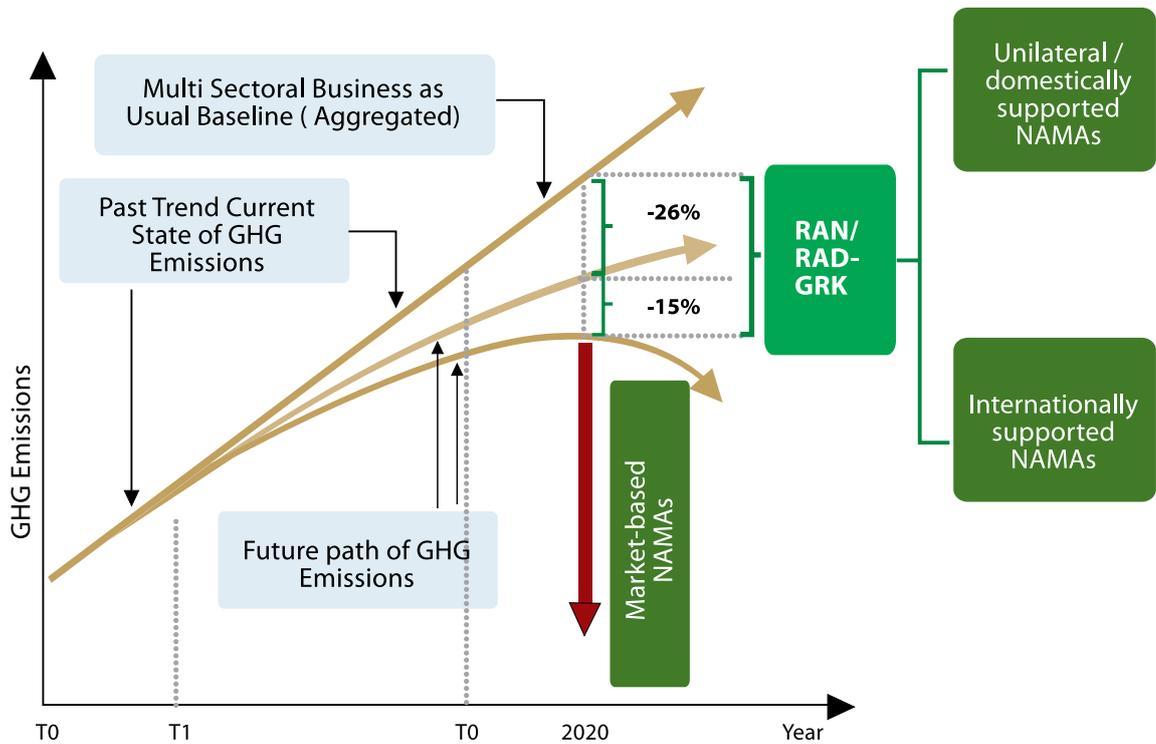


Figure 3. Framework of Mitigation Actions and NAMAs in Indonesia

NAMAs is important for Indonesia not only considering the implementation of mitigation actions, but also because of the following reasons:

- NAMAs enable Indonesia to gain UNFCCC recognition on addressing GHG emission reduction.
- NAMAs are corridor for international communities to support Indonesia in implementing mitigation effort. The mitigation actions listed under NAMAs may access international funding, such as Green Climate Fund and other international funds.

Progress on NAMAs development in Indonesia can be seen in the following Table 5.

Table 5. Status of NAMAs Development in Indonesia, Year 2014

No	Status	Activity	Implementer
1.	Getting funds from NAMAs support facility	SUTRI NAMA (Sustainable Urban Transport Indonesia)	Ministry of Transportation, Bappenas
2.	Registered in UNFCCC	SUTRI NAMA (Sustainable Urban Transport Indonesia)	Ministry of Transportation, Bappenas
		SSLI NAMA (Smart street Lighting Initiative)	Ministry of Energy & Mineral Resources
3.	Proposal is submitted to get international funds, i.e: NAMA Support Facility	VIMSWa NAMA (Vertically Integrated Municipal Solid Waste)	Ministry of Public Works
		DEEP NAMA (Debottlenecking Project Finance for Least Cost Renewable in Indonesia)	Ministry of Energy & Mineral Resources
		SUTRI NAMA (Sustainable Urban Transport Indonesia)	Ministry of Transportation, Bappenas
		SSLI NAMA (Smart street Lighting Initiative)	Ministry of Energy & Mineral Resources
4.	NAMAs proposal being developed	Scaling-up RE NAMA (Scaling-up Investment in Small and Medium Scale Renewable Energy)	Ministry of Energy & Mineral Resources
		SWEET NAMA (Sustainable Wood to Effective Energy Technology)	Ministry of Forestry
		Jakarta (Transport & Green Building) NAMAs	DKI Provincial Government
		Air Transport NAMAs	Ministry of Transportation
		Cement NAMA	Ministry of Industry
		Bio-energy NAMA	Ministry of Energy & Mineral Resources
5.	New suggestions for NAMA proposal	Bio-fuel NAMA	Ministry of Energy & Mineral Resources
		Chiller NAMA	Ministry of Energy & Mineral Resources
		Methane Capture NAMA	Ministry of Energy & Mineral Resources
		Industrial Estate NAMA	Ministry of Industry
		Textile NAMA	Ministry of Industry
		Carbon Sequestration & Livelihood Improvement NAMA	Ministry of Agriculture
		Green Building NAMA	Ministry of Environment and UNEP

Source: Ministry of PPN/Bappenas, 2014.

III. FINANCING CLIMATE CHANGE ACTIONS



III. FINANCING CLIMATE CHANGE ACTION

3.1. National Budget

As mentioned previously, RAN-GRK has been mainstreamed as cross-sectorial climate change program in the 2010-2014 RPJMN. Related Ministries/Agencies are obliged to implement programs and activities as stated in RAN-GRK under their budget allocation for the respective 5 years.

A total of IDR 110.3 trillion has been allocated for GHG emission reduction in the 2010-2014 RPJMN. It consists of IDR 68.4 trillion for climate change adaptation, and IDR 37.9 trillion for climate change mitigation. Meanwhile, IDR 4 trillion has also been allocated for supporting activities (Table 6)

Table 6. Planned Budget Allocation Related to Climate Change Based on 2010-2014 RPJMN.

No.	Activity Group	2010-2014 RPJMN (IDR Billion)
1.	Climate Change Adaptation	68,371.42
2.	Climate Change Mitigation	37,899.01
3.	Supporting Activities	4,049.90
TOTAL		110,270.37

Source: Mid-term Development Plan 2010-2014

In reality, budget allocation for climate change related program in 2010-2014 has reached IDR 165.9 trillion. The implementation of mitigation actions turned out to exceed the predicted budget in the RPJMN, namely reaching IDR 96.7 trillion (Table 7). The big difference in the budget is due to more activities related to emission reduction have been conducted than planned previously as in RPJMN. It also shows that there are more potential in addressing climate change in Indonesia.

Table 7. Budget Allocation for Addressing Climate Change 2010-2014

No.	Activity Group	RKP 2011 (IDR Billion)	RKP 2012 (IDR Billion)	RKP 2013 (IDR Billion)	RKP 2014 (IDR Billion)	Total 2011-2014 (IDR Billion)
1.	Climate Change Adaptation	13,737.50	16,333.52	17,321.72	16,458.12	63,850.86
2.	Climate Change Mitigation	7,392.60	4,689.58	28,939.08	55,660.28	96,681.54
3.	Supporting Activities	1,135.80	1,321.40	1,451.70	1,490.80	5,399.7
TOTAL		22,265.90	22,344.47	47,712.46	73,609.19	165,932.1

Source: 2011-2014 RKP (Annual Government Work Plan), Ministry of PPN/Bappenas, 2004

On the other hand, the budget spent for the GHG emission reduction conducted by the Provincial Government through RAD-GRK implementation in 33 provinces was IDR 8.9 trillion, consisting of IDR 4.7 trillion for carrying out main activities, and IDR 4.2 trillion for supporting activities (Table 8).

Table 8. Budget Expenditures for Addressing Climate Change based on RAD-GRK

Sector	2010		2011		2012		Total	
Core Activities								
	Number of Activities	Budget (IDR billion)						
Forestry	150	123	143	150	163	2,701	456	2,974
Agriculture	55	33	101	76	142	43	298	151
Energy	59	70	72	104	78	143	209	317
Transportation	37	62	32	60	37	240	106	362
Waste Management	37	128	209	216	276	589	522	934
TOTAL	338	417	557	606	696	3,716	1,591	4,738
Supporting Activities								
	236	80	314	4	349	118	899	4,205

Source: Monitoring of Climate Change as Cross-Sectoral Program, Ministry of PPN/Bappenas, 2014.

3.2. International Financial Support

Currently Indonesia has been receiving international funding support in the form of grants for the improvement of environmental quality and addressing climate change from several countries and development partners. Grant committed from 2008 through 2014 is IDR 3.04 trillion, and the realization up to 2014 is IDR.1.1 trillion (Table 9).

Table 9. International Financial Support for the Improvement of Environmental Quality and Addressing Climate Change

No	Source of Funding	Duration (Yr)	Commitment	Total(USD) Realization
1	ADB Implementing Agency: Ministry of PPN/ Bappenas: Capacity Building: Dissemination and awareness raising on Climate Change	2014-2017	700,000	-
2	UNDP, DFID/UKCCU, SIDA, AusAID Implementing Agency: Ministry of PPN/ Bappenas: Capacity Building: Institutional strengthening of ICCTF	2010-2013	11.4 million	6.4 million
3	Japan Implementing Agency: Ministry of PPN/ Bappenas, Ministry of Environment & BMKG: Capacity building of K/L and local government in developing mitigation policy strategy	2012-2014	11.2 million	6.4 million

No	Source of Funding	Duration (Yr)	Commitment	Total(USD) Realization
4	UK	2009-2015	Pound sterling 54.8 million	Pound sterling 14.7 million
<p>Implementing Agency: Ministry of PPN/Bappenas: Establishment and Strengthening of ICCTF Institution Ministry of Finance: Study on Environmentally Friendly Financial Policy Ministry of Forestry: Implementing Timber Licensing System</p>				
5.	Germany	2010-2016	EURO 44.7 million	EURO 24.5 million
<p>Implementing Agency: Ministry of Forestry: a. Institutional improvement, forest management methods and service, conservation, biodiversity and GHG emission reduction. b. Development of reformation implementation strategy in the forestry sector c. Development of sustainable forest management and forest protection concepts. d. Development and construction of geothermal sources in Indonesia Ministry of PPN/Bappenas: Compatible, energy-saving and environmentally friendly urban transport planning Ministry of Environment: Implementation and scaling up of mitigation action and adaption activities BMKG: Web-based information system in climate service Ministry of Energy and Mineral Resources: Development and Construction of geothermal sources in Indonesia</p>				
6	South Korea	2010-2015	6.5 million	3.0 million
<p>Implementing Agency: Ministry of PPN/Bappenas: - Protecting Indonesian coastal zones along with the structures, off-shore forests and the ecosystem - Developing master plan for priority coastal areas</p>				
7	Denmark	2008-2017	D Krone 490 million	D Krone 149.7 million
<p>Implementing Agency: Ministry of PPN/Bappenas, Ministry of Environment and Ministry of Energy and Mineral Resources: 1. Implementation of Strategic Environmental Assessment (KLHS) for Masterplan for Acceleration and Expansion of Indonesia's Economic Development (MP3EI) 2. Improving energy efficiency in trade sector and public sector</p>				

Source: Monitoring of Foreign Cooperation, Ministry of PPN/Bappenas 2014

3.3. Funding Support through ICCTF

The Ministry of PPN/Bappenas and the Ministry of Finance established Indonesia Climate Change Trust Fund (ICCTF) on September 3rd, 2009 to realise the commitment of the Government of Indonesia in reducing Greenhouse Gas (GHG) emission by 20% with its own efforts and by 41% with international support in 2020. The legal basis for the establishment of ICCTF is the Regulation of Minister of PPN No.44/M.PPN/HK/09/2009 on ICCTF, which ensures the harmony between the national government, international donors and private sector, as well as the synergy of climate change-related programs and the national development plans.

In November 2011, Presidential Regulation No. 80 Year 2011 on Trust Fund was issued, followed by the Regulation of Minister of PPN No. 3 Year 2013 on the Establishment of Indonesia Climate Change Trust Fund (ICCTF). ICCTF consists of Trustees (LWA) and Board of Trustees (MWA) as regulated under decree of Minister of PPN No. 97/M.PPN/HK/10/2014.

The tasks of the ICCTF are to facilitate and coordinate financial support for climate change-related programs. The ICCTF funding comes from the State Budget (APBN) and support from

International Development Partners. Since 2010 until 2014, ICCTF has received total funding of USD 11.7 million, coming from the UK, Australia and Sweden.

In order to carry out the tasks, ICCTF has seven Standard Operating Procedures, among others are finance, goods procurement, and monitoring and evaluation. The enactment of ministerial regulation and ministerial decree, finalization of SOP as well as development of Enterprise Resource Planning (ERP) system have supported ICCTF to become an independent and credible organization.

Priority Areas

The ICCTF funding targets three priority areas, namely: (1) Land-Based Mitigation, (2) Adaptation and Resilience, as well as (3) Energy.

1. Land-Based Mitigation aims to contribute in reducing deforestation and forest degradation, and to improve efforts towards sustainable land, peat land and forest resource development.
2. Adaptation and Resilience aims to anticipate for adverse impacts of climate change as well as risks and uncertain climate disturbance, in order to ensure the synergy of Indonesia's development with the path towards sustainable development, balanced economic development and stimulant efforts to reduce vulnerability and improve community's resilience in the most-vulnerable sectors.
3. Energy-based Mitigation aims to reduce emission and simultaneously improve energy security in Indonesia.

In addressing climate change, ICCTF has an important role in supporting the implementation of the National Action Plan for Greenhouse Gas Emission Reduction (RAN-GRK) and National Action Plan for Climate Change Adaptation (RAN-API).

Several projects funded by ICCTF, such as sustainable peat land management and biomass energy estate have the potential for reducing GHG emission and draw investment for the private sector. The connection between ICCTF, RAN-GRK and RAN-API can be seen in the following diagram.

Table 10. Types of ICCTF Projects and Work Priority Areas

		TYPE OF PROJECT	PRIORITY AREAS				
AREA SUPPORT 1	RAN/RADGRK MITIGATION	NAMAs	ENERGY SECTOR			LAND-BASED MITIGATION	
		Stranded CDM	↓	↓	↓	↓	↓
		Green PPPs	Energy Efficiency	Sustainable Transportation	Renewable Energy	Peat Land Management	Social Forestry
		Climate Partnerships	E.g. SMART Street Lighting & Green Chillers	E.g. SUTRI-NAMA	E.g. POME-Waste to Energy & Wood Pellet Biomass		
		Small Grant Program					
AREA SUPPORT 2	RAN/RADGRK ADAPTATION	Lighthouse Program	Marine Affairs-Fisheries	Agriculture	Public Health		
		Impact Study	↓				Food Security
							Water Management
		Small Grant Program					Public Awareness Campaign

Until 2014, ICCTF has financed 12 projects consisting of 6 projects under cooperation with Ministries/ Agencies and 6 projects under cooperation with Non-governmental organizations and Universities. Total funding disbursed is USD 7.8 million. The distribution of project locations can be seen in Figure 5 below.

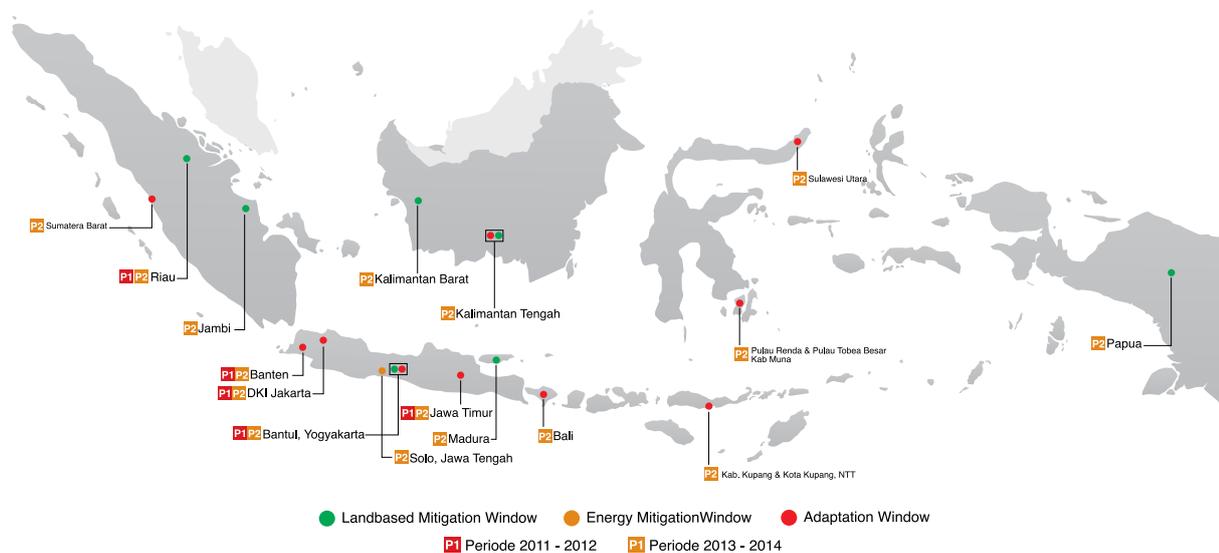


Figure 5: Distribution of Mitigation and Adaptation Actions financed by ICCTF

ICCTF and NAMAs

ICCTF Business Plan 2014-2020 mentions that the priority of ICCTF is investment and fund raising strategy for Nationally Appropriate Mitigation Actions (NAMAs), with a target to draw interests from development partners and private sector to finance NAMAs projects.

Bappenas and ICCTF with the support from GIZ and CDKN (Climate and Development Knowledge Network) as development partners have, organized the first ICCTF NAMAs Summit on 12 September 2014. In the event, six NAMAs proposals were presented, namely: Sustainable Urban Transport Program (SUTRI-NAMA), Smart Street Lighting Initiative (SSLI NAMA), Vertically Integrated Municipal Solid Waste (VIMSWa NAMA), Cement NAMA, Sustainable Wood-to-Effective Energy Technology (SWEET NAMA), and Debottlenecking Project Finance for Least Cost Renewables in Indonesia (DEEP NAMA) .

The role of the ICCTF in disbursing funds for NAMAs can support the implementation of RAN-GRK and RAN-API. ICCTF also plans to submit a request as National Implementing Entity (NIE) to international funding agencies such as Green Climate Fund and Adaptation Fund.

IV. NEXT STEPS



IV. NEXT STEPS

1. Continuation of Climate Change Mitigation and Adaptation

Further efforts on climate change mitigation and adaptation will be implemented since the population and economic growth will keep on increasing. The continuation of climate change mitigation and adaptation is aimed at ensuring the implementation of climate change actions in accordance with the Government's commitment in the UNFCCC forum and the national development quality improvement. These next steps have been formulated in the cross-sectoral programs of Technocratic Draft of 2015-2019 RPJMN.

In addition, the coordination of the climate change mitigation and adaptation with the Local Governments will still be carried out according to the established RAN/RAD-GRK coordination mechanism as well as RAN/RAD-GRK activity monitoring system. The coordination will also be conducted in relation to the implementation of activities supported by ICCTF, so that implementation of mitigation and adaptation coming from the State Budget (APBN), community and support from development partners, will be synergized.

2. Review of RAN-GRK and RAD-GRK

Within the 3 years implementation of RAN-GRK and RAD-GRK, and based on RAN-GRK and RAD-GRK monitoring results, as well as the existing developments, many experiences and inputs have been gained to improve RAN-GRK and RAD-GRK in accordance with existing activities.

The review and improvement will be done as follows.

- a. Updating RAN-GRK and RAD-GRK activities in accordance with on-going activities. RAN-GRK and RAD-GRK were developed based on initial knowledge on the program and policy prior to the implementation. However, during the implementation stage, it was discovered that there are many activities carried out by the community and private sector, which have not been included in RAN-GRK and RAD-GRK yet. On the other hand, there were some planned activities that have not been implemented yet or were not implemented properly in the field. Thus, improvement of RAN-GRK and RAD-GRK is necessary.
- b. Merging RAN-GRK with RAN-API, so that climate change documents will consist of climate change mitigation and adaptation programs and activities. This step will simplify documentations on addressing climate change and synergize climate change programs and activities. In the field, mitigation and adaptation activities can be carried out in a synergic manner. Climate change adaptation steps can basically strengthen the public capacity in conducting climate change mitigation.
- c. Developing indicators and strengthening reporting system as well synergise with MRV system that has been established under Presidential Regulation no. 71/2011 and Ministerial Regulation no. 15/2013.
- d. Synergising mitigation and adaptation program and activities with potential innovative funding source utilization, namely trust fund, NAMA, Corporate Social Responsibility (CSR) and Public Private Partnership (PPP). Therefore, it is hoped that climate change mitigation and adaptation efforts can become part of Indonesian society's transformative change in the coming years.

The improvement of RAN-GRK and RAD-GRK above is also related to the agreement with the parties in COP 19, Warsaw on Intended Nationally Determined Contribution (INDCs). INDCs will become the next step in the global climate change agreement and will be announced in COP 20 in 2015, Paris. The term “contribution” will be introduced to alter the term ‘commitment’, which has been used for the developing countries until now. In addition to the RPJM 2015-2019, the results of RAN/RAD-GRK review can become the main references for INDCs development in Indonesia.

By carrying out the review and improvement of RAN-GRK and RAD-GRK, Indonesia has undertaken the necessary preparation steps in order to meet technical requirements for the INDC submission, such as development of GHG inventories, understanding the potential for mitigation, GHG projection (BAU scenario and scenario after policy intervention), as well as needs assessment of support. Technical requirements also need other consideration particularly related to: (i) the type of commitment and target, (ii) scope of contribution, (iii) time arrangement for contribution, (iv) potential characteristics of INDCs in Indonesia, as the basis for information for INDC submission in early 2015.

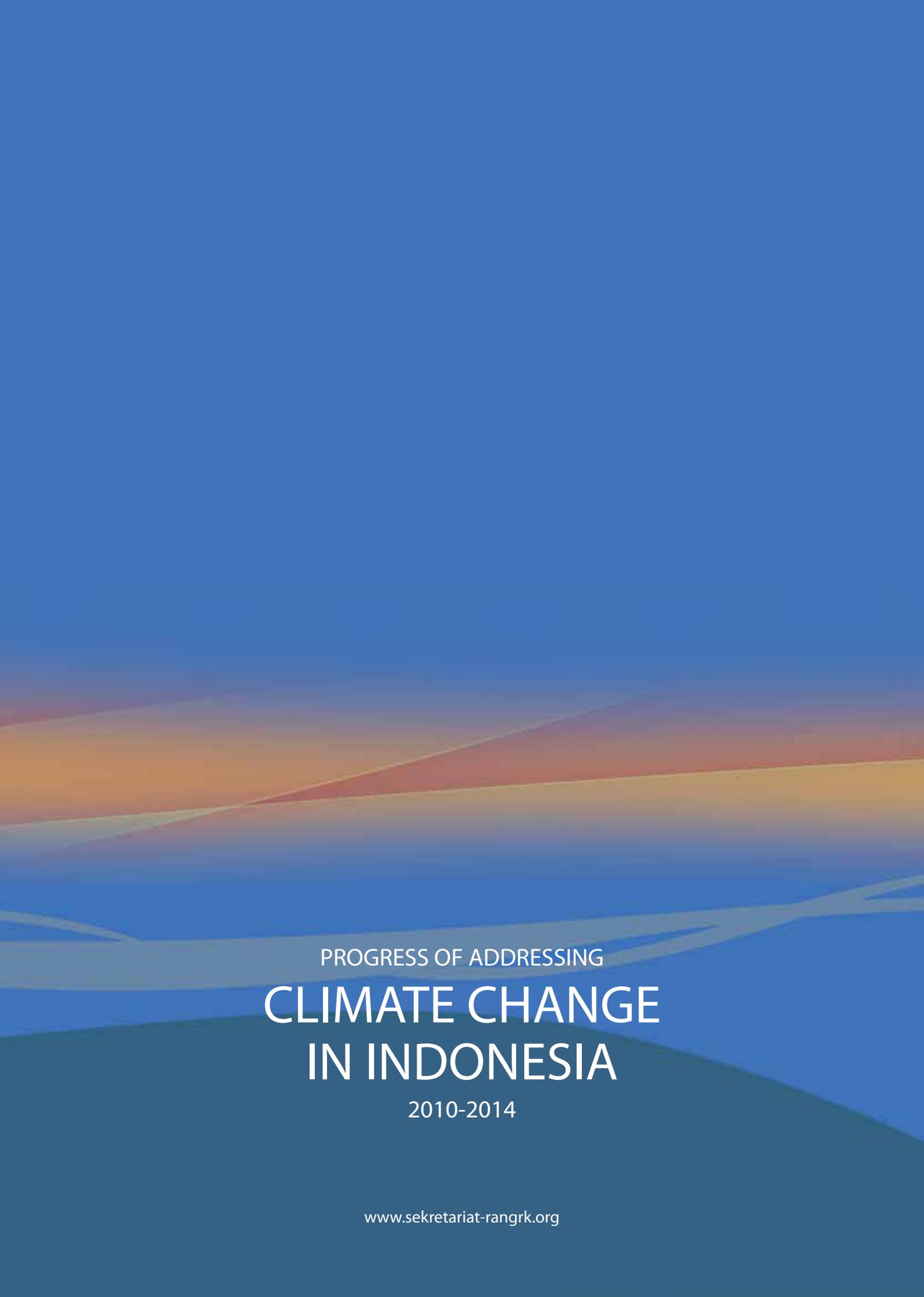
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