



Indonesian Climate Policy Strategic Value of Methane

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Jakarta, 23th September 2011

Outline

1. An Overview of Mainstreaming Climate Change Initiatives in Indonesia
2. Indonesia's National Mitigation Actions
3. Development of NAMAs Framework
4. Emission from methane

An Overview of Mainstreaming Climate Change Initiatives in Indonesia


Why Climate Change Becoming Indonesia's Main Concern?



With more than 17,000 islands, Indonesia is very vulnerable to rising sea levels and floods, while erratic weather patterns will impact agricultural and fishery production which support many communities.

Climate change action is a target to the attainment of both Indonesia's National Development Goals and Millennium Development Goals (MDGs).

CLIMATE CHANGE INITIATIVES: TOWARD LOW CARBON DEVELOPMENT

- 
- 2007: COP-13 on Bali and National Action Plan on Climate Change (RAN-PI)
 - 2007: 'Yellowbook': Integrating CC into development planning (regularly revised)
 - 2009: Technology Needs Assessment (TNA)
 - 2009: Indonesia Climate Change Trust Fund (ICCTF)
 - 2009: President announces mitigation targets (-26% /-41%)
 - 2010: Indonesia Climate Change Sectoral Roadmap (ICCSR)
 - 2010: Indonesian Second National Communication (SNC)
 - 2010: REDD+ Task Force
 - 2011: President Regulation for National Mitigation Actions (RAN-GRK)

Currently: Development of Indonesian NAMAs

Roadmap and ICCTF

Indonesia Climate Change Sectoral Roadmap (ICCSR)

Mitigation

Forestry
Industry
Energy
Waste
Transportation

Adaptation

Water
Marine and Fisheries
Agriculture
Health

Input to Mid-Term (2010-2014) and
Next Development Plan (2014-2019)

Financial mechanism:

Indonesia Climate Change Trust Fund (ICCTF)
international & domestic; public & private funds

Adaptation&Resilience

Energy

Land Based Mitigation

National Priority RPJM 2010 - 2014

11 National Priority –
Indonesia Bersatu Cabinet II
2009-2014

- 1 Bureaucracy Reform and Good Governance
- 2 Education
- 3 Health
- 4 Poverty Alleviation
- 5 **Food Security**
- 6 Infrastructure
- 7 Climate Investment and Climate Business
- 8 **Energy**
- 9 **Environment and Disaster Management (incl. Climate Change)**
- 10 Disadvantaged, Borders and Post-Conflict Areas
- 11 Culture, Creativity and Technology Innovation

Other Priority

- 12 Politic, Law and Security
- 13 Economic Development
- 14 Social Welfare

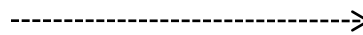
Indonesia's National Mitigation Actions

Scenario of 26% GHG Emission Reduction

President Commitment
G-20 Pittsburgh and COP15
To reduce te GHG Emission in 2020

26%

Unilateral



26%

15%

41%

Unilateral
and
International
Support

RAN-GRK

National Mitigation Action Plan (RAN-GRK)

Overall objective

- Contribute to global efforts to reduce emissions and to tap international funding for Indonesia

What it is

- Integral part of National Development Plan, regularly updated
- Core activities, integrated among sectors, to reduce emissions and support activities to strengthen policy framework
- Compiled based on proposals of actions from implementing agencies, based on existing actions that have co-benefits in reducing GHG emissions

Main principles

- Should not hinder economic growth
- Enhance people's welfare in the sense of sustainable development
- Protection of poor and vulnerable communities

Possible distribution and Target of Emission Reduction

Sector	Emission Reduction (Giga ton CO ₂ e)		Action Plan	Institutions
	26%	+15%		
Forestry and Peatland	0,672	0.367	Forest and land fire control, water and hydrology management on peatland, forest and land rehabilitation, illegal logging control, avoiding deforestation, community development	MoFr, MoPW, MoA, MoE
Waste	0,048	0,030	Sanitary landfill development, 3 R and sewerage system in urban areas	MoPW, MoE
Agriculture	0,008	0,003	Introduction of low carbon rice variety, irrigation efficiency, organic fertilizer utilization	MoA, MoPW, MoE
Industry	0,001	0,004	Energy efficiency, renewable energy development	MoI
Energy and Transportation	0,038	0,018	Biofuel development and utilization, fuel efficiency improvement, mass transportation, demand side management, renewable energy, energy efficiency	MoT, MoEnergy, MoPW, MoF
	0.767	0.422		

Source: Result from a Ministerial Meeting at Coordinating Ministry of Economics, 29 December 2009 – will be reviewed

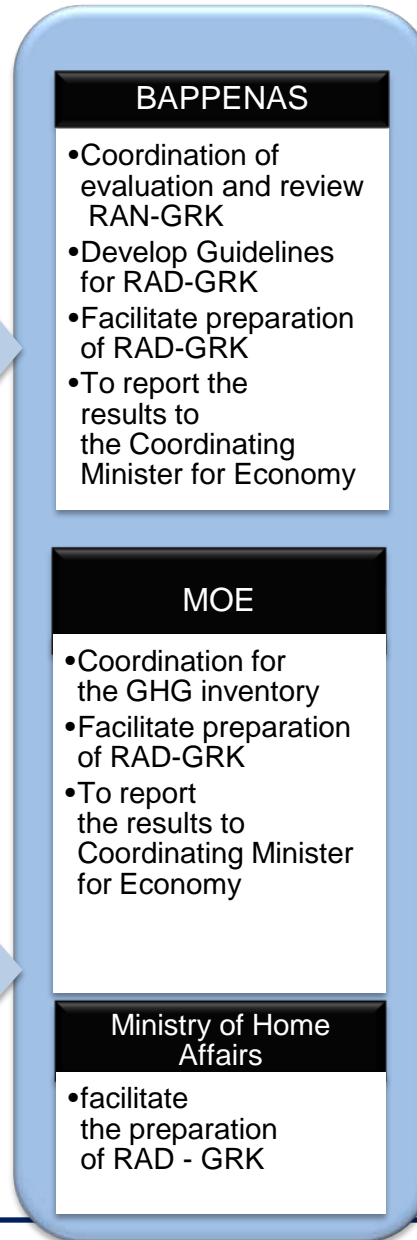
Presidential Regulation of RAN-GRK – Distribution of Duties

Ministries/
Institutions

- Implement RAN-GRK in their respective fields
- To monitor and inventory in their respective fields
- Report the implementation of RAN-GRK activities to the Coordinating Minister for the Economy, Bappenas, and MOE

Province
(Governor)

- Mandatory to develop RAD-GRK (12 months after the Presidential Regulation RAN-GRK) – signed based on action plan at district/city level.
- File a Report RAD-GRK to the Minister of Home Affairs and Minister of Bappenas.



Coordinating Minister for Economy

- Coordination of monitoring for RAN GRK implementation
- Reporting to the President

Coordinating Minister for People's Welfare

- GHG Inventory Coordination

Development of NAMAs Framework

Developing Indonesian NAMAs

**RAN-GRK
(as Indonesian NAMA)**

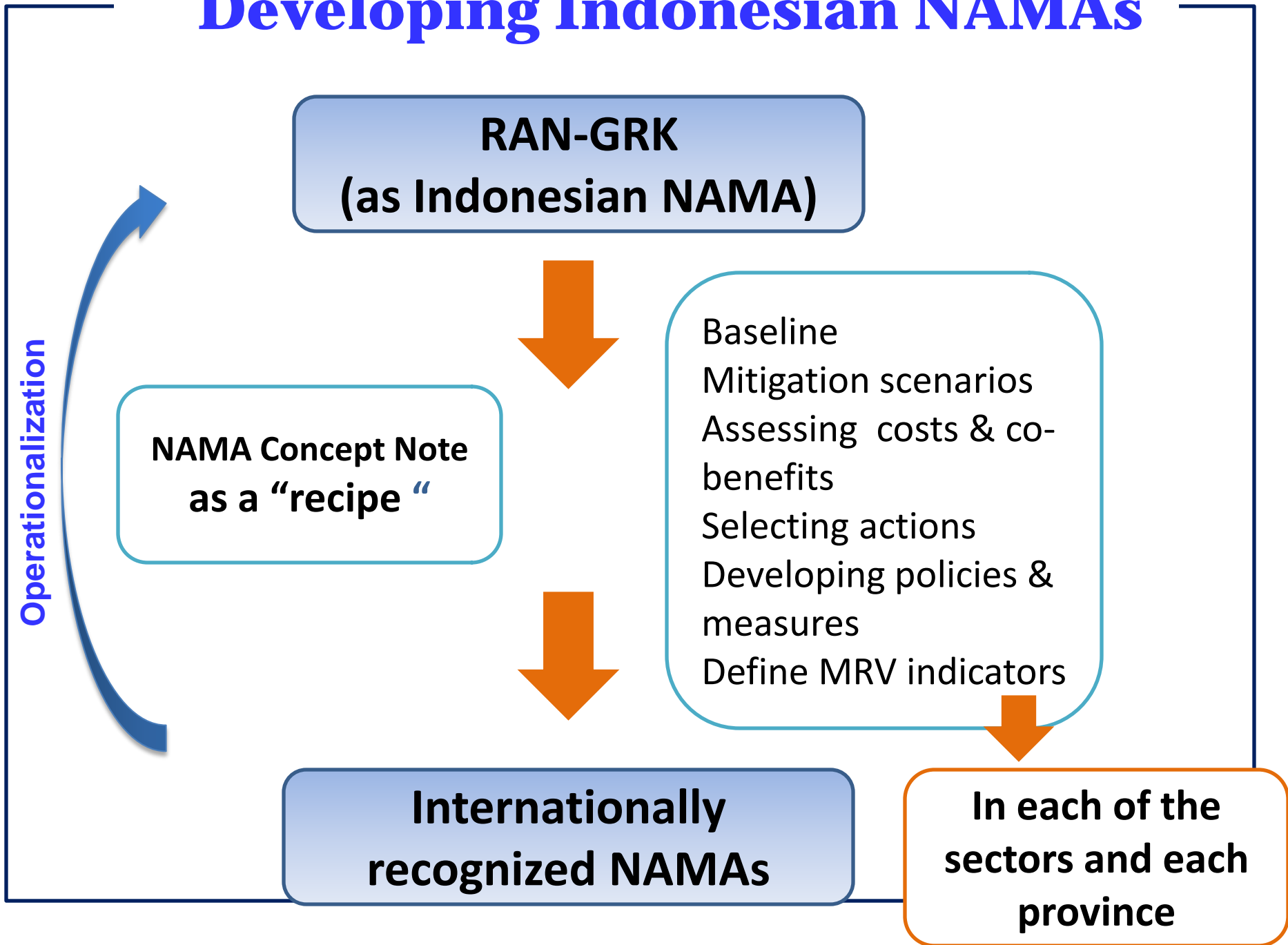
**NAMA Concept Note
as a “recipe “**

Baseline
Mitigation scenarios
Assessing costs & co-
benefits
Selecting actions
Developing policies &
measures
Define MRV indicators

**Internationally
recognized NAMAs**

**In each of the
sectors and each
province**

Operationalization



RAN-GRK: Dual approach

RAN-GRK: Dual approach for allocating mitigation efforts

Sectoral



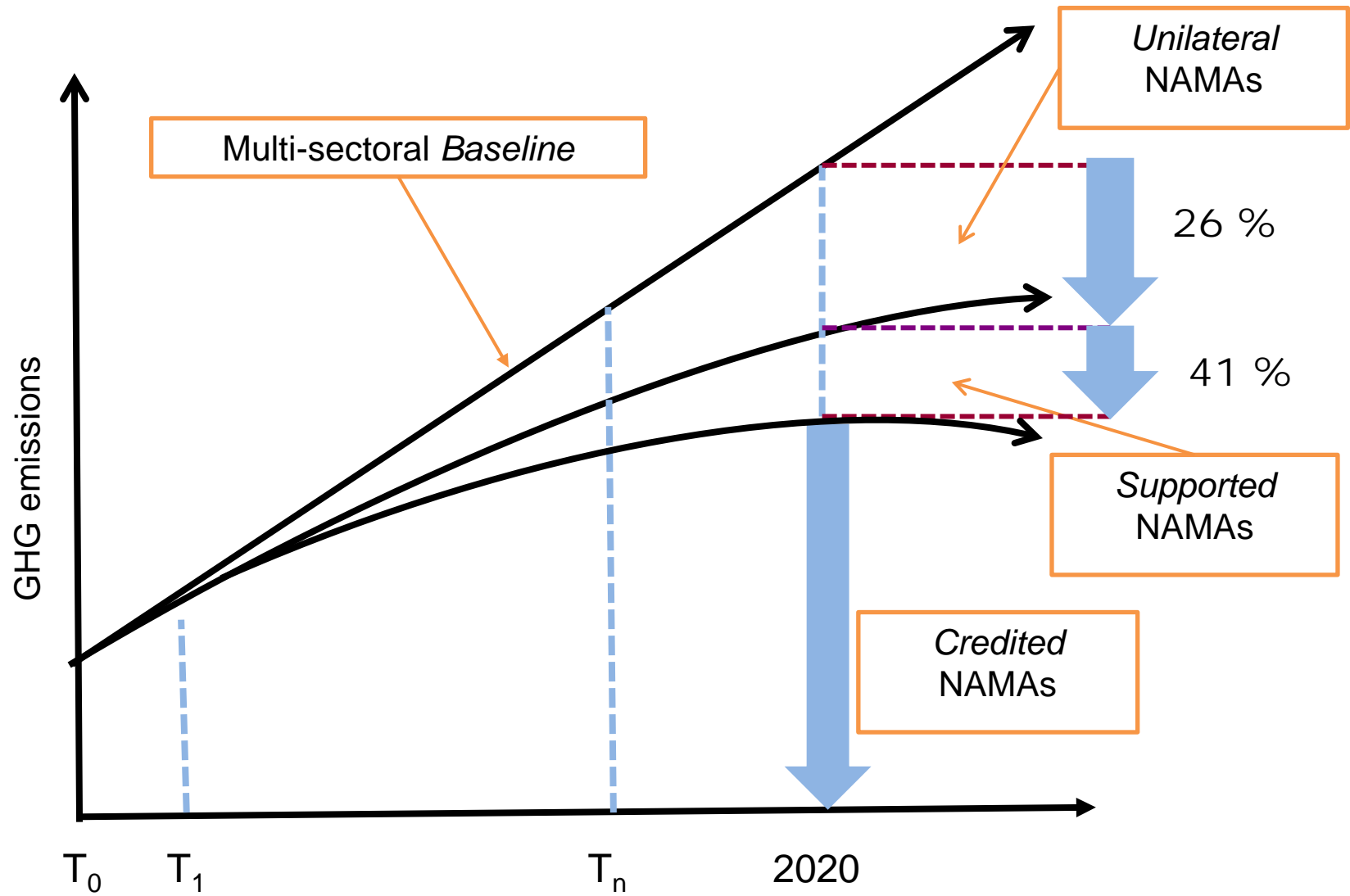
- Land-based: Agriculture, forestry and land use
- Energy (Industry, transportation, electricity)
- Waste

Regional



- Develop local mitigation action plans (RAD-GRK) incl. provincial targets

Multi sectoral baseline





BAPPENAS

Developing Indonesian NAMAs: Tasks ahead I

Set a national multi sectoral baseline for GHG emissions

Establish business-as-usual scenarios for future GHG emission trends and reduction paths

Identification of potential mitigation actions of each sector

Calculate emission reductions

Select mitigation actions: based on cost effectiveness and national development targets

Establish carbon budgets for each sector

Estimate financing needs and related financing schemes

Developing Indonesian NAMAs: Tasks ahead II

Estimate collateral benefits, e.g. non-GHG benefits in the transport sector related to air pollution reduction

Develop and introduce appropriate mitigation policies & measures

Design and establish a coordination mechanism for NAMAs (e.g., a NAMAs registry)

Define roles and responsibilities for (additional) institutions (for example: who will do the MRV)

Connect the NAMA concept with MRV: Development of indicators

Public awareness programme

The Indonesian Mitigation Target (2020)

MRV international / REDD+ MRV
Clear and concise contracts
Clear executing agencies
Higher abatement costs
No offsetting

MRV domestic
Outlined in Medium-Term Dev. Plan (RPJM)
Lower abatement costs, economically feasible
National priorities
No offsetting

- 41%

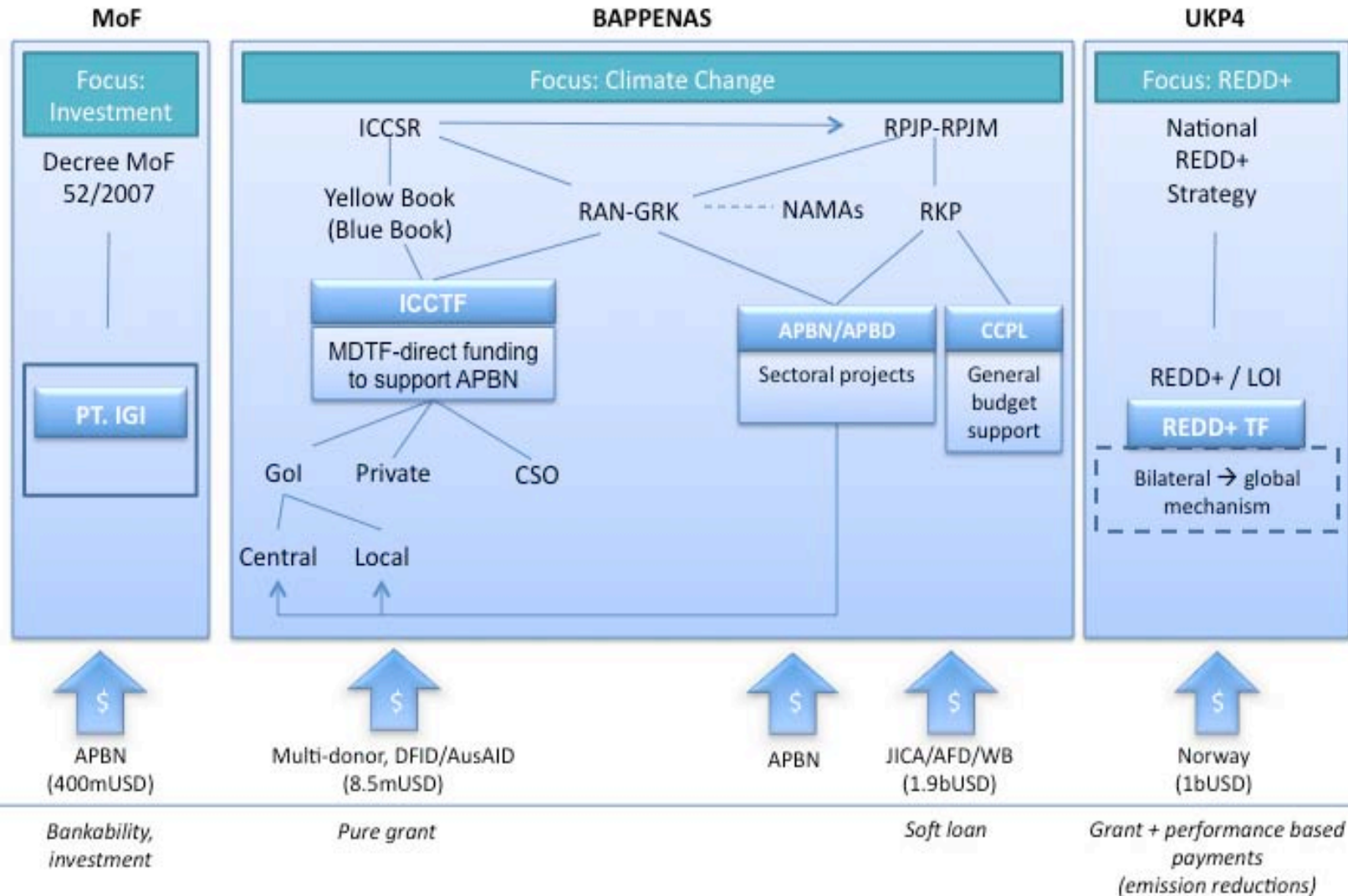
with international support

- 26%

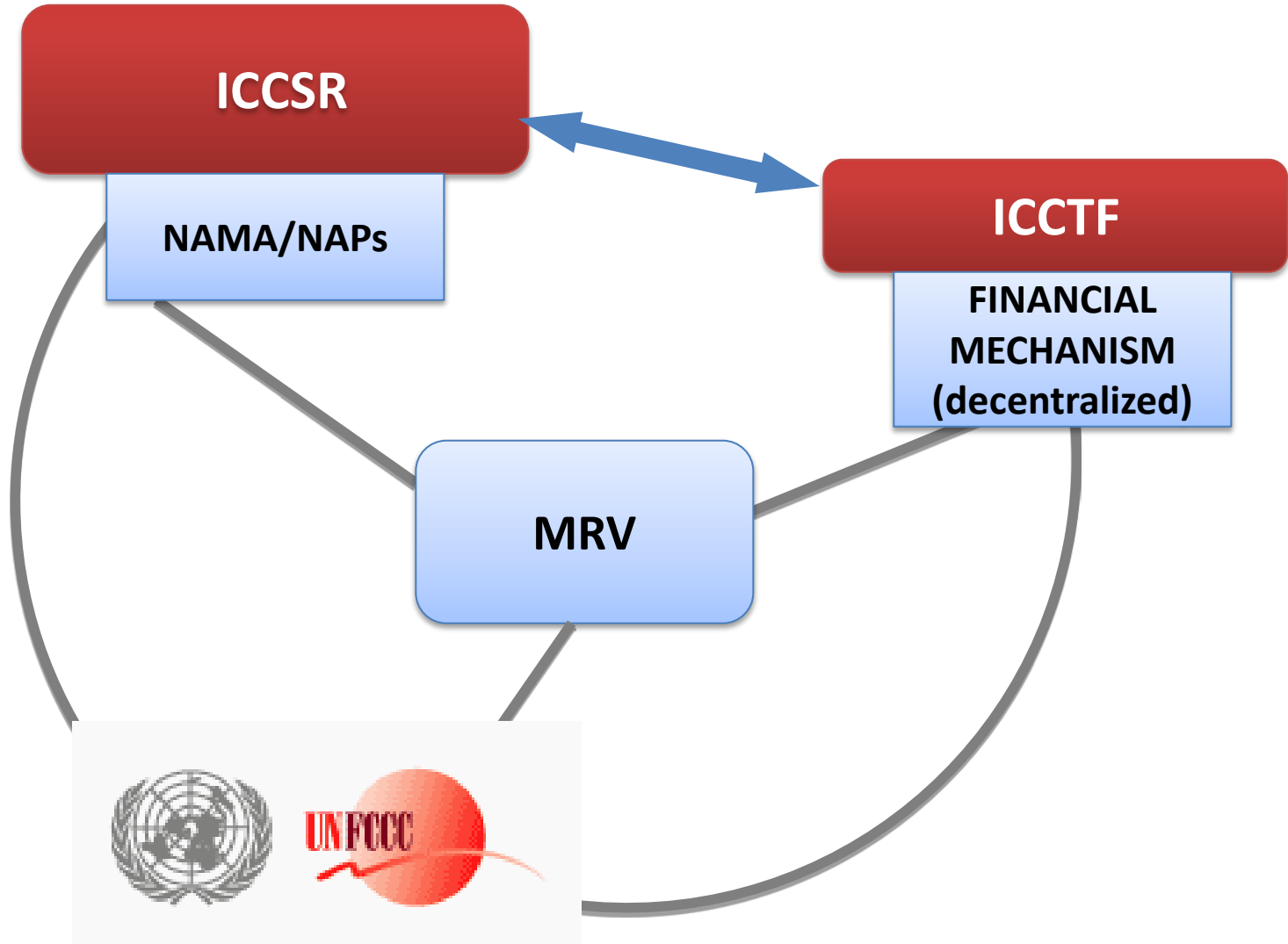
without international support

Sector allocations	Forestry + Peat	REDD+	Agriculture	Power - energy	Transport	Waste	Industry
Actions now	Mid-Term Development Plan, sector-strategic 5-year plans						

Mapping of Climate Change Financing in Indonesia



ICCTF AND ROADMAP IN UNFCCC CONTEXT



The ICCTF

GOAL

The goal of the ICCTF is to support the GOI's efforts to reduce emissions, move towards a low-carbon economy and adapt to the impacts of climate change.

PURPOSE

The purpose of the ICCTF is to attract, manage and mobilise funding to contribute efficiently and effectively to 1) the mainstreaming of climate change issues in national, provincial and local development planning and 2) the implementation of mitigation and adaptation climate change initiatives.

OUTCOME 1 – Land Based Mitigation

The ICCTF aims to contribute to address deforestation & forest degradation issues & to advance sustainable management of peat- lands and forest resources.

OUTCOME 2- ENERGY

The ICCTF aims to contribute to the improvement of energy security and reduction of emissions from the energy sector in Indonesia.

OUTCOME 3- RESILIENCE

The ICCTF aims to contribute to responding to the adverse impacts of and risks posed by climate change that are already occurring, while also preparing for future impacts through cross cutting and inter-sectoral measures.

Emission from methane

Table 1a. Summary of 2000 GHG emission and removal (in Gg CO₂e)

	CO ₂	CH ₄	N ₂ O	PFC	Total
Energy	247,522.25	30,174.69	3,240.64	NO	280,937.58
Industrial Process	40,342.41	2,422.73	133.22	145.15	43,043.52
Agriculture	2,178.30	50,800.18	22,441.25	NO	75,419.73
LUCF ¹	821,173.35	56.35	24.47	NO	821,254.17
Waste	1,662.49	153,164.02	2,501.45	NO	157,327.96
Total	1,112,878.82	236,617.97	28,341.02	145.15	1,377,982.95

¹Note: Emission from peat fire was included

The main source of methane emissions was the waste sector (65%), followed by the agriculture (22%) and energy (13%) sectors. The total methane emissions from all sectors was 236,6 Gg CO₂e.

- Methane (CH₄) is a greenhouse gas that remains in the atmosphere for approximately 9-15 years.
- Methane is over **20 times** more effective in trapping heat in the atmosphere **than carbon dioxide (CO₂)** over a 100-year period and is emitted from a variety of natural and human-influenced sources.
- Human-influenced sources include landfills, natural gas and petroleum systems, agricultural activities, coal mining, stationary and mobile combustion, wastewater treatment, and certain industrial process.
- Methane is also a primary constituent of natural gas and an important energy source.

As a result, efforts to prevent or utilize methane emissions can provide significant energy, economic and environmental benefits.

POLICIES ON NEW AND RENEWABLE ENERGY DEVELOPMENT

National Policies:

- Conservation & Diversification of Primary Energy with the use of renewables.
- President Regulation No. 5/2006, Contribution of renewables in 2025 : 17% (boost by vision 25 % in 2025 (25/25))
- President Decree No. 4/2010 : Fast Track Programs for power plants using renewables, coal and gas (FTP-2), where the portion of energy generated from Geothermal Power Plants (GPP) 40 % and Hydro Power Plants 12 %
- MEMR Decree No. 15/2010 and MEMR Decree No. 02/2011.

Long Term Electricity Supply Planning(RUPTL 2010 -2019) :

- Projection of electricity growth 9,2 % per annum for upcoming decade
- Electrification ratio increases from 68 % in 2010 to 91 % in 2019
- Fossil Fuel Consumption Reduction Program by 3 % starting from 2013.
- Still dominated by Coal Fired Power Plants (CFPP) program (60 %), the certainty of readiness of the GPP may reduce the portion of CFPP.
- **The development of GPP currently is not based on “least cost” however based on the readiness of the geothermal field developers.**

Combine Approach of Technology, Scheme and Mechanism for REFF-Burn

	Pre-Fossil Combustion (Pre-FC)		During Fossil Combustion (D-FC)		Post-Fossil Combustion (post-FC)
<u>A. Technology</u>	Energy Efficiency Technology (EEF)	Renewable Energy Technology (RET)	Energy Efficiency Technology (EEF)	Low Carbon Technology (LCT)	Carbon Capture and Storage
	Efficiency Improvement (Demand Sector): <ul style="list-style-type: none"> Industrial Sector Transport Sector Building Sector 	Non Fossil Combustion: <ul style="list-style-type: none"> Geothermal Hydro Bioenergy Solar Wind Ocean 	Efficiency Improvement (Supply Sector): <ul style="list-style-type: none"> Power Sector Fuel Switching Losses Reduction Cogeneration 	Carbon Reduction: <ul style="list-style-type: none"> Clean Coal Technology Clean Fossil Technology Flared Gas Reduction 	Carbon Capture Storage: <ul style="list-style-type: none"> Carbon Capture & Storage Technology Carbon Utilization
<u>B. Schemes</u>					
1. Financing	<ul style="list-style-type: none"> Intermediary and Risk Mitigation Carbon Market 	<ul style="list-style-type: none"> Long-term Financing Long-term PPA Mandatory Mechanism Carbon Market 	<ul style="list-style-type: none"> Intermediary and Risk Mitigation Carbon Market 	<ul style="list-style-type: none"> Carbon Market 	<ul style="list-style-type: none"> Carbon Market
2. Regulation					
a. Economic		<ul style="list-style-type: none"> Feed-in Tariff Tendering Renewable Energy Portfolio Standards 			
b. Technical	<ul style="list-style-type: none"> Industry Performance Targets Energy Management Standards Fuel Efficiency Standard Appliances Standard Building Codes 		<ul style="list-style-type: none"> Energy management standards Industry Performance Targets 	<ul style="list-style-type: none"> Good & Clean Engineering Practices 	
3. Institutional Reform	<ul style="list-style-type: none"> National Champion ESCO 	<ul style="list-style-type: none"> National Champion 	<ul style="list-style-type: none"> National Champion ESCO 	<ul style="list-style-type: none"> National Champion Carbon Market 	<ul style="list-style-type: none"> National Champion
<u>C. Clean Energy Mechanism</u>					
1. Kyoto Protocol	CDM	CDM	CDM	CDM	CDM
2. Beyond Kyoto Protocol	Voluntary, bilateral mechanism	Voluntary, bilateral mechanism	Voluntary, bilateral mechanism	Voluntary, bilateral mechanism	Voluntary, bilateral mechanism

Coalbed Methane

- CBM is methane (CH₄) which is formed naturally in formation of coal which is trapped and absorbed inside coal.
- Indonesia has 300-453 Trillion Cubic Feet (TCF) 300 - 453 of CBM. CBM reserves are mainly in Kalimantan island (209 TCF) and Sumatra island (239 TCF). The rest of the resource (3 TCF) is in Java island.
- For development of CBM, there are Presidential Regulation number 5 in 2006 (based on Law number 22 in 2001). In this Presidential regulation, CBM is targeted to contribute 3.3% of primary energy consumption in Indonesia in 2025. Then, more details followed up by Ministerial Decree (MEMR) number 33 in 2006 and number 36 in 2008.

Issue Related to CBM

- Fiscal incentive for CBM development and speed up of procurement process
- Article 31, point 1 & 4 of Oil and Gas Law require the investors to pay taxes, import tax, and other during exploration period. This may impact on CBM because it's new technology and the development still generate high risk

THANK YOU