REPUBLIC OF INDONESIA
Bappenas

REPUBLIC OF INDONESIA
CLIMATE CHANGE
PROGRAM LOAN 2007-2009
PROGRAMME EVALUATION REPORT

August 2010

Japan International Cooperation Agency (JICA)

Global Group 21 Japan, Inc.
Institute for Global Environmental Strategies (IGES)

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CR(3)
10-027

TABLE OF CONTENTS

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Abbreviation

A&M	Advisory and Monitoring
ACIAR	Australian Centre for International Agricultural Research
ADB	Asian Development Bank
AFD	Agence Française de Développement
APBN	State Budget of Revenues and Expenditures
ARRD	The Agency for Agricultural Research and Development
AusAID	The Australian Agency for International Development
Bappenas	The National Development Planning Agency, Republic of Indonesia
BAU	Business as usual
BMG	The Meteorology and Geophysics Agency
BMKG	The Agency of Meteorology, Climatology, and Geophysics, Republic of Indonesia (reorganised from BMG in September 2008)
BNPB	The National Disaster Management Agency, Republic of Indonesia
BPBDs	Local Disaster Management Agencies
CAIT	Climate Analysis Indicators Tool
CCPL	Climate Change Program Loan
CDM	Clean Development Mechanism
CFL	Compact Fluorescent Lamp
CFS	Climate Field School
CO_2	Carbon Dioxide
COP	Conference of the Parties
COREMAP	Coral Reef Rehabilitation and Management Program
CTI	Coral Triangle Initiative
CY	Calendar Year
DAK	Special Allocation Fund
DEN	National Energy Council
DGEEU	Directorate General of Electricity and Utilization
DFID	Department for International Development, the United Kingdom
DGFC	Directorate General of Food and Crops
DGLWM	Directorate General of Land and Water Management
DGWR	Directorate General of Water Resources
DISIMP	Decentraliszed Irrigation System Improvement Project in Eastern Region of Indonesia
DME	Energy Self-sufficient Village Program
DNA	Designated National Authority
DPR	House of Representatives (Dewan Perwakilan Rakyat)
EKUIN	Coordinating Ministry of Economy, Republic of Indonesia
ESDM	Ministry of Energy and Mineral Resources, Republic of Indonesia
EWS	The Early Warning System
FAO	Food and Agriculture Organization of the United Nations
FCPF	Forest Carbon Partnership Facility
FIO	First Institute of Oceanography, China
FY	Fiscal Year
GDP	Gross Domestic Product
GEF	Global Environment Facility
GERHAN	The National Movement for Forest and Land Rehabilitation Program

GHG	Greenhouse Gas
Gg	Giga Gram
GOF	The Government of France
GOI	The Government of Indonesia
GOJ	The Government of Japan
GON	The Government of Norway
GTZ	German Agency for Technical Cooperation (Deutsche Gesellschaft für Technische Zusammenarbeit Gmbh)
GWh	Giga Watt Hour
ha	Hectare
HTI	Industrial Forest Plantation
HTR	Community Forest Plantation
ICCPL	Indonesia Climate Change Program Loan
ICCSR	Indonesia Climate Change Sectoral Roadmap
ICCTF	Indonesian Climate Change Trust Fund
ICRAF	The World Agroforestry Center (legal name: International Center for Research in Agroforestry)
ICWRMP	Integrated Citarum Water Resource Management Investment Program
IDR	Indonesian Rupiah
IFCA	Indonesia Forest Climate Alliance
IKK	Water Supply System Project in capitals of Sub-district (Kecamatans)
IPP	Independent Power Producer
ITTO	The International Tropical Timber Organization
JBIC	Japan Bank for International Cooperation
JETRO	Japan External Trade Organization
JICA	Japan International Cooperation Agency
KfW	German Development Bank (Kreditanstalt für Wiederaufbau)
KLH	State Ministry of the Environment, Republic of Indonesia
KOICA	Korea International Cooperation Agency
KPH	Forest Management Unit (Kesatuan Pengelolaan Hutan)
LDEO	Lamont Doherty Earth Observatory
LOI	Letter of Intent
LUCF	Land Use Change and Forestry
LULUCF	Land Use, Land Use Change, and Forestry
MBOE	Million Barrels of Oil Equivalent
MMAF	Ministry of Marine Affairs and Fisheries, Republic of Indonesia
MOA	Ministry of Agriculture, Republic of Indonesia
MOF	Ministry of Finance, Republic of Indonesia
MOFR	Ministry of Forestry, Republic of Indonesia
MOI	Ministry of Industry, Republic of Indonesia
MPA	Marine Protection Area
MRV	Measurable, Reportable, and Verifiable
$MtCO_2e$	Million Tonne Carbon Dioxide Equivalent
MW	Mega Watt
NAMA	Nationally Appropriate Mitigation Actions
NAPA	National Adaptation Plan of Action
NAP-CC	National Action Plan Addressing Climate Change
NCCC	The Indonesian National Council on Climate Change

NC-CDM	The National Commission on the Clean Development Mechanism
NGO	Non-governmental Organization
NWRC	National Water Resource Council
ODA	Official Development Assistance
OECD-DAC	The Development Assistance Committee, Organisation for Economic Cooperation and Development
PAMSIMAS	Water Supply and Sanitation for Low-Income Communities
PDAMs	Water Supply Corporations
PISP	Participatory Irrigation Sector Project
PT. PERTAMINA	State-owned oil & gas company (National Oil Company), Republic of Indonesia
PT.PLN	State Electricity Company, Republic of Indonesia
POLA	Integrated Water Resources Management Patterns and Plans
PU	Ministry of Public Works, Republic of Indonesia
REDD	Reducing Emissions from Deforestation and Degradation
REDDI	Reducing Emissions from Deforestation and Degradation in Indonesia
RENSTRA	Strategic Plan
Rp.	Indonesian Rupiah
RPJMN	Medium-Term National Development Plan
RUEN	National Energy Plan
SANIMAS	Community-based sanitation facilities
SCs	Steering Committee Meetings
SIIAM	The Supporting Implementation of Irrigation Asset Management Project
SKPG	Food and Nutrition Security System
SKR	Second Kennedy Round
SNC	The Second National Communication under the United Nations Framework Convention on Climate Change
SRI	System of Rice Intensification
TA	Technical Assistance
TKPSDA	National Water Resource Coordination Team
TTMs	Technical Committee/Technical Task Force Meetings
UN	United Nations
UNDP	United Nations Development Programme
UNFCCC	United Nations Framework Convention on Climate Change
UN-REDD	United Nations Collaborative Programme on Reducing Emissions from Deforestation and Forest Degradation in Developing Countries
USAID	United States Agency for International Development
USD	United States Dollar
UU	Law
WB	World Bank
WBSCD	The World Business Council for Sustainable Development
WGCC	The Working Group on Climate Change
WKP	Geothermal Working Area

Executive Summary

This programme evaluation report discusses how and to what extent the first phase of the Indonesia Climate Change Program Loan (ICCPL Phase I: 2007–2009)[1] contributed to Indonesian policy reform for addressing climate change issues. Analysis focused on (1) impacts at an overall programme level; and (2) impacts at a sectoral policy level. Findings for strengthening the ICCPL and/or similar programme loan approaches are also discussed as (3) lessons learned.

1. Evaluation at overall programme level

1.1. Relevance of four focused areas of ICCPL

ICCPL Phase I was relevant, in terms of addressing Indonesia's major concerns and priorities with regards to climate change policies. The ICCPL was designed and implemented with the following major objectives:

1) GHG emissions reduction from the land use, land use change, and forestry (LULUCF) sector through the establishment of incentive mechanisms and strengthening of forest management;
2) GHG emissions reduction from the energy sector through the establishment of institutions to promote renewable energy and energy saving;
3) Strengthening of adaptation policies, especially on water resource management, irrigation asset management, and farmers' training; and
4) Mainstreaming of climate issues and coping with cross-sectoral policy issues such as the Clean Development Mechanism (CDM) and early warning systems.

The ICCPL's focus areas were selected based on GOI's concerns about climate change. These objectives were developed through a series of dialogues between the Government of Indonesia (GOI) and the Government of Japan (GOJ). The priority areas of the ICCPL echo the priority areas highlighted in GOI's essential documents on climate change such as *National Action Plan addressing Climate Change* (NAP-CC) (State Ministry of Environment (KLH) 2007) and *National Development Planning: Indonesia Responds to Climate Change* (Yellow Book) (Bappenas 2008).

[1] ICCPL was agreed on between the Government of Indonesia (GOI) and its two development partners, namely, the Government of Japan (GOJ) and the Government of France (GOF). The National Development Planning Agency (Bappenas), together with the Ministry of Finance (MOF) of Indonesia, Japan International Cooperation Agency (JICA) and Agence Française de Développement (AFD) conducted actual loan operations. Three tranches of the loan, or a total of 1.8 billion USD over three years, were disbursed subject to close monitoring and policy dialogues on the progress of the policy reform. Global Group 21 Japan (GG21) and the Institute for Global Environmental Strategies (IGES) were invited as the core members of the Advisory & Monitoring (A&M) team of ICCPL Phase I. The A&M team played a key role in monitoring and advisory activities throughout ICCPL Phase I; they then conducted the programme evaluation at the end of Phase I.

1.2. Relevance of ICCPL framework

ICCPL Phase I was also relevant in terms of its framework design. To effectively facilitate GOI's efforts at legal/regulatory reforms, institutional/budgetary reforms, and selected projects addressing climate change policies, a Policy Matrix consisting of over 50 targets/actions in 6 sectors (later 8 sectors) was adopted. The achievement level of each target/action was closely monitored and a series of policy dialogues, such as the Steering Committee (SC) meetings and Technical Taskforce Meetings (TTM), were convened to share and discuss the monitoring results. The policy dialogues were utilised as the vehicle for (i) facilitating inter-ministerial cooperation/coordination; (ii) facilitating international cooperation/coordination; and (iii) facilitating discussion and decision making on additional measures necessary to obtain anticipated outcomes, such as a review of original targets/actions, a review of budgetary and human resources, and the introduction of necessary technical assistance. This feedback mechanism was made possible though the collaborative monitoring activities among GOI and development partners.

1.3. Impacts at overall programme level

ICCPL contributed to the improvement of inter-ministerial cooperation/coordination. As anticipated in the original framework design of the ICCPL, a series of SCs provided opportunities for strengthening cooperation/coordination amongst the relevant ministries and agencies of GOI. Sectoral dialogues were also convened for the LULUCF and energy sectors, which effectively served as occasions to discuss relevant sectoral policies, obstacles, and countermeasures. Some cross-sectoral issues, for example, watershed management dealt with by the Ministry of Public Works (PU) and the Ministry of Forestry (MOFR), benefited from improved inter-ministerial cooperation.

ICCPL contributed to the improvement of international cooperation/coordination. Through the collaborative implementation of monitoring activities, as well as the convening of SCs and TTMs, the cooperation/coordination for propelling Indonesian effort on climate change issues was significantly improved. This included cooperation/coordination between GOI and development partners, as well as those among the development partners. Amongst others, GERHAN (or forest rehabilitation and watershed management) and geothermal energy development issues were benefitted.

ICCPL fostered the mainstreaming of climate change issues in Indonesia at multiple levels. The National Development Planning Agency (Bappenas), Japan International Cooperation Agency (JICA), and Agence Française de Développement (AFD) established a joint monitoring mechanism for verifying the achievement of ICCPL targets/actions. The results of monitoring served as the basis for discussion and decision making at different levels of policy dialogues which led to the mainstreaming of climate change issues in Indonesia. This monitoring and policy dialogue mechanism was continuously improved throughout ICCPL Phase I. Highlights of the mainstreaming of climate change issues are described in figure 1.

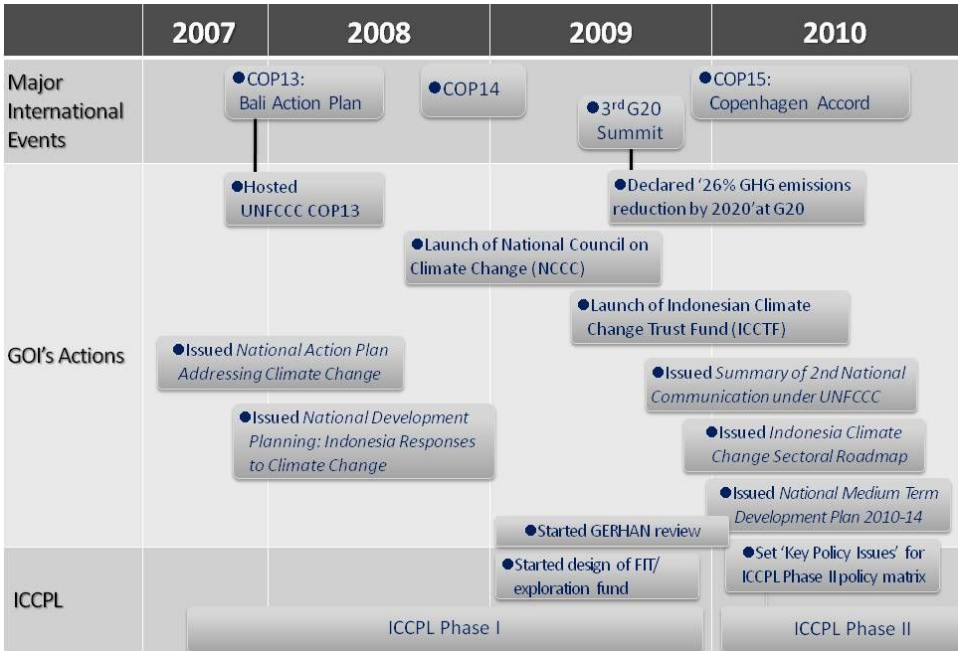


Figure 1. Highlights of the mainstreaming of climate change issues

2. Impacts at sectoral level

2.1 Mitigation

LULUCF

'Increased carbon absorption capacity', 'reduced deforestation and degradation', and 'improved forest management' were anticipated and mostly attained. Highlights of the achievement are described as follows.

- The design of model Forest Management Units (KPH) in 28 provinces built the awareness of provincial- and district-level governments of how KPH would contribute to better forest management; it also enhanced their capacity to establish further KPH.
- Compared with other countries, Indonesia has made relatively rapid progress in formulating its national REDD (Reducing Emissions from Deforestation and Degeneration) architecture, though the process has not always been efficient, with the REDD regulations now requiring revision to remove inconsistencies. REDD is expected to make an important contribution to Indonesia's 26% GHG emissions reduction target.
- Under GERHAN, 2 million ha of land was rehabilitated through tree planting. However, this was only 67% of the 5-year target and, on average, maintenance of the plantations was only 12% of the annual targets. The amount of GHG avoided by GERHAN activities during ICCPL Phase I is assumed to be 39.4 Mt CO_2e.
- To strengthen the national forest rehabilitation policy, the review of GERHAN was recommended by the A&M team and was conducted by experts assigned by AFD and JICA, jointly with MOFR in 2009 and 2010.

Observed impact during the ICCPL Phase I seems to be limited, however, the real impacts of the

above activities, in particular, those of KPH and REDD, in terms of GHG emissions reduction and absorption, will be observed in the coming years and require continuous monitoring.

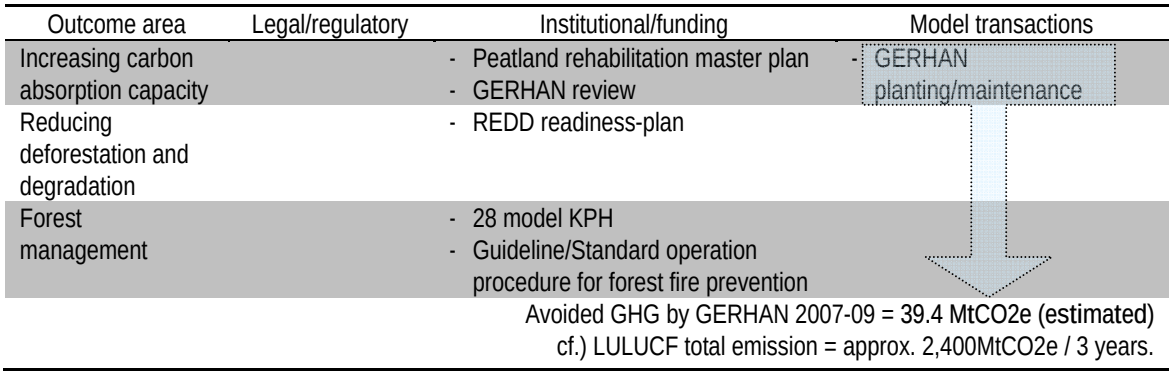


Figure 2. Highlights of the attainments in LULUCF sector

Energy

'Geothermal development through public/private partnership', 'promotion of all other renewable energy resources', 'promotion of energy efficiency and conservation activities', and 'improvement of rural electrification by utilisation of local renewable energy resources' were anticipated and mostly attained. Major attainments over the past 3 years in the energy sector are as follows.

- The overall direction of the future development of the energy sector has been determined, as the publishing of the basic documents, *The National Energy Policy* and *The Master Plan of Energy*, progressed. Establishment of National Energy Council (DEN) can be appreciated in this context.
- To encourage participation of public/private investors in geothermal power development, designing of various fiscal and economic incentive schemes began. The followings deserve special mentioning:
  - Designing of feed-in-tariff mechanism started.
  - A risk mitigation study including exploration fund was conducted.
  - Regulations on purchasing price, tax incentive, and investment incentive were prepared.
- A new directorate general was set up for new and renewable energy by the Ministry of Energy and Mineral Resources (ESDM).
- To support energy diversification and energy conservation:
  - Regulatory framework was reinforced.
  - Industrial CO_2 reduction roadmaps were developed, especially for the cement and steel sectors.
  - Energy audits were conducted on 240 buildings and companies.
- Energy self-sufficient village programs (DME) for rural electrification encompassed 633 villages.
- Avoided emissions from geothermal power development and other renewable energy development are estimated to be 2.03 Mt-CO_2e and 0.09 Mt-CO_2e, respectively. Energy audit during the ICCPL Phase I has realised 307GWh of energy savings (0.25 Mt-CO_2e).

It should be noted that the real impacts of the fundamental measures taken during the monitoring period, such as the preparation of relevant basic laws and designing of incentive mechanisms, will

appear in the coming years.

Outcome area	Legal/regulatory	Institutional/funding	Model transactions
Overall	- National Energy Policy (drafting) - National Energy Plan (drafting)	- National Energy Council	
Geothermal energy (GE) development	- Min. Reg. on geothermal activity/tax incentive/base price - Govt. Reg. on investment incentive - Design of Feed-in-Tariff - Design of exploration fund		(Geothermal plants installed)
Renewable energy (RE) development	- Pres. Reg. on National Energy Plan - Draft Gov. Reg. on New & Renewable Energy	(New DG for new & RE in ESDM)	(Renewable energy capacity increased)
Promotion of energy efficiency/ conservation	- Preparation of CO2 Roadmap for cement/steel industry - Design of mid-term energy audit - Design of energy efficiency labeling		- 240 Energy Audits
Rural access to RE			- 633 Energy self-sufficient villages

Avoided GHG by GE/RE/Audits 2007-09: 2.31 ~2.64MtCO2e (estimated)
cf.) total emission from fossil fuel = 1,070 MtCO2e (2007-09)

Figure 3. Highlights of the attainments in energy sector

2.2. Adaptation

Water resource management

Institutional development in the water resource management sector made significant progress. Relevant achievements include the following: Establishment of water resource councils at the national and local levels; integrated water resource management plans (POLA) for 58 river basins; and strengthening of river basin offices (Balai/Balai Besar) through the recruitment of engineers and establishment of 'Dissemination Units'. The above attainments would enable effective project development and implementation at river basins to reduce the risks of flood and water scarcity.

Water supply and sanitation

Improved water supply and sanitation in rural and urban communities were observed. The number of on-the-ground projects in the water supply and sanitation sector significantly increased. Approximately 2,500 PAMSIMAS (rural water supply projects) and 300 IKK (urban water supply projects) were implemented during ICCPL Phase I. About 3 million people benefited from these projects. As for SANIMAS (community sanitation), approximately 300 projects were implemented and about 40 thousand households benefited.

Agriculture

Substantial progress was made in making farmers' households and communities more resilient to climate change. System of Rice Intensification (SRI) sites doubled between 2007 and 2009; climate field schools were increased by 20% between 2007 and 2009. It is also noteworthy that climate change issues were the focus of increased attention within the Ministry of Agriculture (MOA), as seen from the fact that MOA launched a coordinating committee on climate change issues.

Disaster management and disaster risk reduction

Fair progress in institutional strengthening for disaster management and risk reduction was observed. Major achievements include establishment of disaster management agencies (one national agency, 18 provincial agencies, and 44 districts agencies); preparation of National Disaster Management Plan; and preparation of National Action Plan for Disaster Risk Reduction. These achievements fostered follow-up action at the local level, which included preparation and implementation of local plans and projects.

Marine, coral, and fisheries

Notable progress was seen in the improvement of marine resource management. The ICCPL Policy Matrix (2009) covered various projects related to the Coral Reef Rehabilitation and Management Program 2 (COREMAP2) and Coral Triangle Initiative (CTI). The major achievements include the expansion of marine protected areas from 8.5 million ha to 13.5 million ha; mangrove rehabilitation (53,500 mangroves planted in about 110 ha area); and the formation of 1,632 community groups.

Further impacts predicted in adaptation sectors

The above institutional reforms and on-the-ground activities will yield further positive impacts in the coming years, while the observed impacts in ICCPL Phase I are rather limited. Close monitoring of the anticipated outcomes, such as improved resilience/preparedness against the impacts of climate change in each sector, should continue beyond 2009 to assess the real impacts of the policy measures included in the Policy Matrix.

2.3. Cross-sectoral issues

'Mainstreaming of climate change policies in the national development plan' is highlighted as the most significant achievement in relation to cross-sectoral issues covered in ICCPL Phase I. 'Promotion of the Clean Development Mechanism (CDM)' and 'improvement of early warning systems' also were significant achievements. As already highlighted in the previous section, substantial progress was observed in the mainstreaming of climate change policies, as four out of ten 'national priorities' are related to climate change in RPJMN 2010–14 and it clearly articulated climate change issues to be one of the thirteen national priorities for the first time in the Indonesian national planning process. Other tangible evidences of mainstreaming climate change policies include some key documents prepared by GOI, such as ICCSR and SNC. These achievements will provide each sector with clear direction in designing and implementing effective policies for mitigation and adaptation in the coming five years as well as in attaining the emissions reduction target by 2020. Mainstreaming actions are upgraded as 'Key Policy Issues' in the ICCPL Phase II draft Policy Matrix (2010 and beyond).

3. Conclusion and Lessons learned

3.1. Conclusion

ICCPL Phase I was relevant and significantly supported Indonesia's effort to address the mitigation, adaptation, and cross-sectoral challenges of climate change issues. The ICCPL contributed, *inter alia*, to the mainstreaming of climate change issues in GOI's development policies. The mainstreaming has appeared in the form of a number of legal and institutional reforms at national level, issuance of key policy documents, and the launch of new organisations dealing with climate change issues at ministerial/agency levels which strengthened coordination within GOI. During ICCPL Phase I, the direct and indirect impacts of the estimated reduction in GHG emissions and the benefits due to adaptation are limited, but a large part of their real impacts are expected to be observed in the coming years. In order to maintain and strengthen the current positive momentum to deal with climate change issues in Indonesia, central and local agencies need to be further supported.

3.2. Lessons learned

Several important lessons were learned in ICCPL Phase I with regards to designing and implementing international cooperation programmes that support developing countries' efforts to address climate change issues through A&M activities.

Ownership among all relevant ministries/agencies in the recipient country is the key to success. Due to the extensive nature of climate change issues, ICCPL-like operations involve a wide variety of state ministries and agencies, as well as local authorities. While the ownership and leadership of Bappenas and the Ministry of Finance were high, those of other line ministries were weak at the beginning of ICCPL Phase I. Measures and incentives for ensuring the ownership of relevant ministries/agencies and local authorities are suggested as follows:

- Reflecting the national priority of the recipient government in the selection of sectors covered;
- Convening a workshop(s) inviting relevant government agencies to obtain sufficient understanding of the programme loan approach;
- Providing relevant government agencies with TA in a timely manner, either within the programme loan framework, or in parallel, to encourage their policy development and implementation;
- Providing TA to help relevant government agencies to overcome technical difficulties in implementing policy actions, as well as in monitoring and evaluating their impacts;
- Exploring incentives to the line ministries; for example, MOF and/or Bappenas (in the case of Indonesia) could introduce a performance-based budget allocation scheme for climate change policy and activities undertaken by the line ministries; and
- Utilising the Policy Matrix as a common platform and as a means of creating project selection criteria for other funding sources and international cooperation schemes, such as ICCTF in the case of Indonesia.

Appropriate and clear targets, together with the method for evaluating them, should be established at the initial stage of a programme loan. Targets (outcomes, outputs, activities, and indicators) to be covered and monitored should be thoroughly discussed and agreed upon among the relevant ministries/agencies and the monitoring team at the initial stage of the programme loan to avoid unnecessary confusion and debates at later stages. Ensuring the MRV (monitoring, reporting, and verification) aspects at the design stage is a necessary condition for effective and successful implementation of international cooperation programmes on climate change issues. Furthermore, it is also wise to adopt national climate targets and actions already endorsed and/or to be endorsed, when and where appropriate, to support the recipient government's maintenance of a consistent climate change policy. Key issues and measures include the following:

- Clarifying the link between expected outcomes and related policy actions in the Policy Matrix with appropriate methodologies such as the causal chain analysis;
- Convening sectoral dialogues and issue-specific dialogues to have relevant government agencies involved in target development at the beginning of the programme loan;
- Establishing targets, monitoring methodologies, and verification measures at the initial stage with close consultation among the coordinating agencies, the line ministries, and the monitoring team; and
- Ensuring targets in the Policy Matrix are aligned with national goals.

Strategic design of a series of policy dialogues, with clear focus at appropriate levels, can propel climate policies and actions. Designed to ensure high-level policy dialogues that would review the progress made in attaining targets covered in the Policy Matrix as well as make decisions on the way forward, SC functioned well, in particular toward the end of the Phase I. Further focused policy dialogues, namely, sectoral dialogues, were convened for the LULUCF and energy sectors, which proved effective in facilitating intensive discussion on sector-specific challenges. Key issues and measures include the following:

- Clarifying the scope and roles of meetings at different levels, such as SCs, TTMs, sectoral dialogues, and others. For example, SCs should focus on high level policy dialogues on multisectoral issues, rather than merely approving the results of monitoring; and
- Organising sectoral and/or issue-specific dialogues on key policy issues as necessary, otherwise regularly, for information exchange and consensus building among stakeholders.

Inter-ministerial coordination/cooperation is essential for effective implementation of a programme loan. As was mentioned earlier, a wide variety of state ministries and agencies, as well as local authorities, are involved in an operation like the ICCPL. Coordination among relevant sectors in a recipient government is crucial for effective policy development and implementation. To further improve inter-ministerial cooperation/coordination, the following measures could be effective:

- Establishing a focal point in each line ministry for the international cooperation programme on climate change issues, or climate change issues in general. Forming an inter-ministerial network among these focal points would be effective for more coordinated implementation of climate change policies;
- Establishing an arena for coordinating information exchange on climate change policy,

discussion, and consensus building among relevant ministries/agencies, selected local governments and development partners;

- Further utilising the process of the climate change programme loan for effective inter-ministerial and international cooperation/coordination; and
- Ensuring that the leading national agency (or agencies) works with other relevant agencies and development partners. The roles of Bappenas and MOF are crucial in Indonesia's.

Further international cooperation/coordination can increase the positive impacts of ICCPL and non-ICCPL measures. Cooperation/coordination among the recipient government and developing partners is essential for the smooth operation of the ICCPL, for example, for joint monitoring activities. Furthermore, close international cooperation/coordination could enhance the positive impacts of the programme loan, while linkage and balance between the programme loan and non-programme loan measures, such as technical assistance (TA) and ICCTF could be improved. To further enhance international cooperation/coordination, the following points should be considered:

- Improving cooperation/coordination between the recipient government and developing partners which leads to effective implementation of the programme loan including efficient and quality monitoring;
- Sharing and utilising the Policy Matrix and monitoring results among the ICCPL and non-ICCPL development partners to enhance donor coordination; and
- Further utilising the process of the climate change programme loan for international cooperation/coordination so as to identify assistance needs and design co-financing and/or coordinated funding (e.g. fuel/energy subsidy reduction). For example, further coordination and collaboration with ICCTF could be explored.

PART I

OVERVIEW of the PROGRAMME EVALUATION REPORT

1. Objectives of the programme evaluation

The programme evaluation report tries to analyse and evaluate how and to what extent the first phase The Indonesia Climate Change Program Loan (hereinafter ICCPL) was provided by the Government of Japan (GOJ) in conjunction with the Government of France (GOF) from 2007 to 2009. This programme evaluation report tries to analyse and evaluate how and to what extent the first phase of the loan contributed to strengthening the policies, regulations, and legal institutions of the Government of Indonesia (GOI) in relation to climate change.

The structure of the analysis is basically in keeping with the five principles proposed by the Development Assistance Committee (OECD-DAC), i.e. relevance, efficiency, effectiveness, impact, and sustainability. Nevertheless, as an evaluation of the programme loan as a whole, the analysis focuses on the impact or outcome levels rather than the effectiveness or outputs of each policy action during the period.

2. Overview of the Indonesia Climate Change Program Loan

2.1. Background

a) Indonesia and climate change: Current situation

The Republic of Indonesia occupies an important place in worldwide efforts at climate change mitigation, despite its status as a Non-Annex-I country of the United Nations Framework Convention for Climate Change (UNFCCC). This position is due to a few unique conditions. Firstly, it is often said that Indonesia is one of the largest greenhouse gas (GHG) emitting countries in the world (when emissions from Land Use, Land Use Change, and Forestry [LULUCF] sectors are included). Secondly, despite the persistent poverty, there has been steady growth of the economy led by the industrial sector, resulting in a rapid increase in energy consumption. Thirdly, there is an urgent need to strengthen climate change adaptation policies in Indonesia. Since, geographically, Indonesia is surrounded by ocean and the majority of the population engages in agriculture and fisheries, the society and economy are quite vulnerable to the impact of climate change, particularly to the rise in sea level, precipitation change, flood, and drought.

On this account, GOI has actively addressed climate change issues through the introduction of a

number of laws, plans, and guidelines; as well as implementing mitigation and adaptation measures on the ground level. Furthermore, at the G-20 Leaders Summit on 25 September 2009 President Susilo Bambang Yudhoyono declared as follows:

We are devising an energy mix policy including LULUCF (Land Use, Land Use Change, and Forestry) that will reduce our emissions by 26 percent by 2020 from BAU (Business As Usual). With international support, we are confident that we can reduce emissions by as much as 41 percent.[2]

b) Japan's policy for international cooperation related to climate change

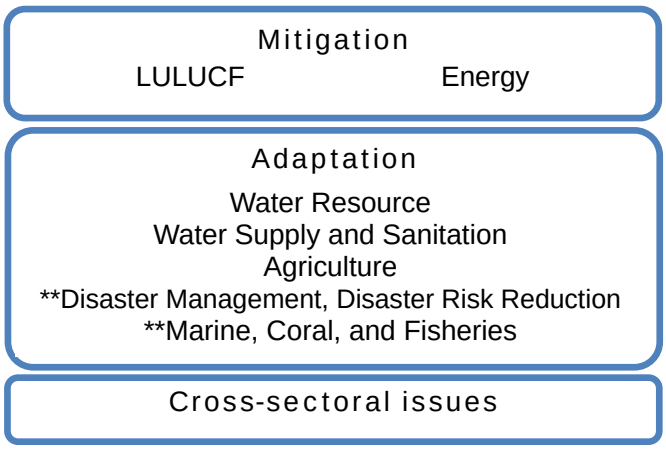
In January 2008, GOJ announced the 'Financial Mechanism for Cool Earth Partnership', which was designed to provide assistance on the basis of bilateral policy consultations to developing countries which were seeking to achieve emission reductions while promoting economic growth and contributing to climate stability. This mechanism succeeded as a new financial initiative to developing countries, namely, the 'Hatoyama Initiative' based on the statement by then Japanese Prime Minister Yukio Hatoyama at the United Nations Summit on Climate Change in September 2009.

2.2. The Indonesia Climate Change Program Loan (ICCPL)

a) Outline of the ICCPL

In order to support GOI's climate change policy, GOJ decided to provide the Climate Change Program Loan (CCPL) to GOI as the first large-scale programme loan (three tranches over three years) under the aforementioned 'Cool Earth Partnership'. In August 2008, GOI and GOJ agreed on the Indonesia Climate Change Program Loan (ICCPL).

In order to facilitate implementation of institutional and policy reforms and pilot projects related to climate change issues, a set of policy targets/actions was prepared by GOI using the *National Development Planning: Indonesia Responses to Climate Change (Yellow Book,* the National Development Planning Agency (Bappenas) 2008) and was summarised in the form of a Policy Matrix covering the period from 2007 to 2009. The Policy Matrix originally targeted six sectors: (1) LULUCF; (2) energy; (3) water resource; (4) water supply and sanitation; (5) agriculture; and (6) cross-sectoral issues including additional policy actions in aid of institutional and organisational strengthening, spatial planning, and so on. The loan was disbursed after examining the achievement of the 2007 policy actions in meeting the Policy Matrix targets. In July 2009, following the dialogue between GOI, GOJ, and GOF, additional two sectors for adaptation policies ('disaster management and disaster risk reduction'



****: sectors added in 2009**

Figure 1.1. Sectors in the Policy Matrix

[2] Reprint from REDD in Indonesia website (http://redd-indonesia.org/publikasi/detail/read/indonesia-presidents-speech-on-climate-change-at-2009-g-20-meeting-1/, checked as of 30 June 2010)

and ‘marine, coral, and fisheries’) were incorporated in the revised Policy Matrix (see Figure 1.1).

The Advisory & Monitoring team (A & M team) monitored the progress/attainments of the policy targets/actions stated in the Policy Matrix and reported on them to the Technical Committee (or Task Force) Meetings (TTMs) at director (echelon II) level and the Steering Committee Meetings (SCs) at director-general (echelon I) level. TTMs and SCs were periodically convened by Bappenas, which invited the delegates of GOI, GOJ/JICA (Japan International Cooperation Agency) and the Government of France (GOF)/AFD (Agence Française de Développement) to confirm the progress/attainments of policy targets/actions and to discuss possible remedial measures and/or additional actions to be taken.

On the basis of the achievement of the policy actions in the Policy Matrix, in September 2008, the former Japan Bank for International Cooperation (JBIC), now merged into JICA, disbursed USD 300 million to GOI. In November 2008, GOF also provided USD 200 million co-financing through AFD in support of GOI. The funds were designed to finance the GOI’s budgetary deficits, and thus would be integrated into the GOI general budget (treasury fund).

b) Purpose of the loan

ICCPL aims to cooperate with GOI-driven policies on mitigation, adaptation, and cross-sectoral issues through providing financial support and cooperation with monitoring activities.

c) Overview of the Loan Agreement

Table 1.1 Overview of the loan agreement

	GOJ/JICA			
	Climate Change Program Loan	Climate Change Program Loan (II)		Climate Change Program Loan (III)
		Climate Change Program ODA Loan	Emergency Budget Support ODA Loan	
Amount (Yen)	30,768,000,000 (US$300,000,000)	28,083,000,000 (US$300,000,000)	9,361,000,000 (US$100,000,000)	27,195,000,000 (US$300,000,000)
Signing of the Loan Agreement	2 September 2008	10 December 2009		23 June 2010
Interest Rate (% per annum)	0.15	0.15	Yen LIBOR (6 months)	0.15
Repayment Period/ Grace Period (Years)	15/5	15/5	15/3	15/5
	GOF/AFD			
	Climate Change Program Loan			
Amount (US$)	200,000,000	300,000,000		300,000,000
Signing of the Loan Agreement	25 November 2008	27 July 2009		17 June 2010

*ODA: Official Development Assistance

** GOF/AFD does not disclose the interest rate, repayment period, and grace period agreed with GOI.

3. Overview of the Analysis/Evaluation of the Programme

3.1. Focus/Scope

The ICCPL is a multilevel and multisectoral programme composed of more than 50 policy actions in 8 sectors. In the case of such a complex programme, the OECD-DAC’s five principles can be applied to the multiple levels: the overall framework of the programme, target outcomes of the

sectors, and outputs of activities. Such complexity in levels may generate confusion; to avoid this, the evaluation study analyses and evaluates the five points where the ICCPL influences the Indonesian climate change policies.

In order to clarify the focus of the programme evaluation, the ICCPL A&M team prepared a figure conceptualising the ICCPL's support for GOI's policy reforms/on-the-ground projects addressing climate change issues (Figure 1.2.):

[Figure 1.2. *1] On the basis of its analysis of the mitigation potential and adaptation needs that exist, GOI has developed a comprehensive plan on climate change policies. The sectors/issues prioritised by GOI in relation to climate change are shown in its key documents such as NAP-CC and the Yellow Book as follows:

- mitigation sectors: 'LULUCF', 'energy', 'waste management', and 'transportation';
- adaptation sectors: 'water resource', 'agriculture', 'health', and 'marine and coastal areas'; and
- cross-sectoral issues: 'understanding the impact of climate change', 'financing', and 'institutional reforms' as measures for mainstreaming climate issues into national development policies.

Among these issues, ICCPL Phase I focused mainly on the following four areas:

1) GHG emission reduction from the LULUCF sector through the establishment of incentive mechanisms and the strengthening of forest management;
2) GHG emission reduction from the energy sector through the establishment of institutions to promote renewable energy and energy saving;
3) Strengthening of adaptation policies, especially in relation to water resource management, irrigation asset management, and farmers' training; and
4) Mainstreaming of climate issues and coping with cross-sectoral policy issues such as the Clean Development Mechanism (CDM) and early warning systems.

[Figure 1.2. *2] ICCPL was designed to support GOI's policy reforms/on-the-ground activities related to the four areas through:

- providing financial assistance;
- facilitating domestic cooperation/coordination;
- facilitating international cooperation/coordination; and
- establishing and operationalising the monitoring framework.

[Figure 1.2. *3] Policy reforms/on-the-ground activities implemented during ICCPL phase I are expected to generate medium/long term impacts on mitigation, adaptation, and cross-sectoral issues. On this account, the ICCPL would also contribute to GOI's efforts in pursuit of its medium-/long term goals.

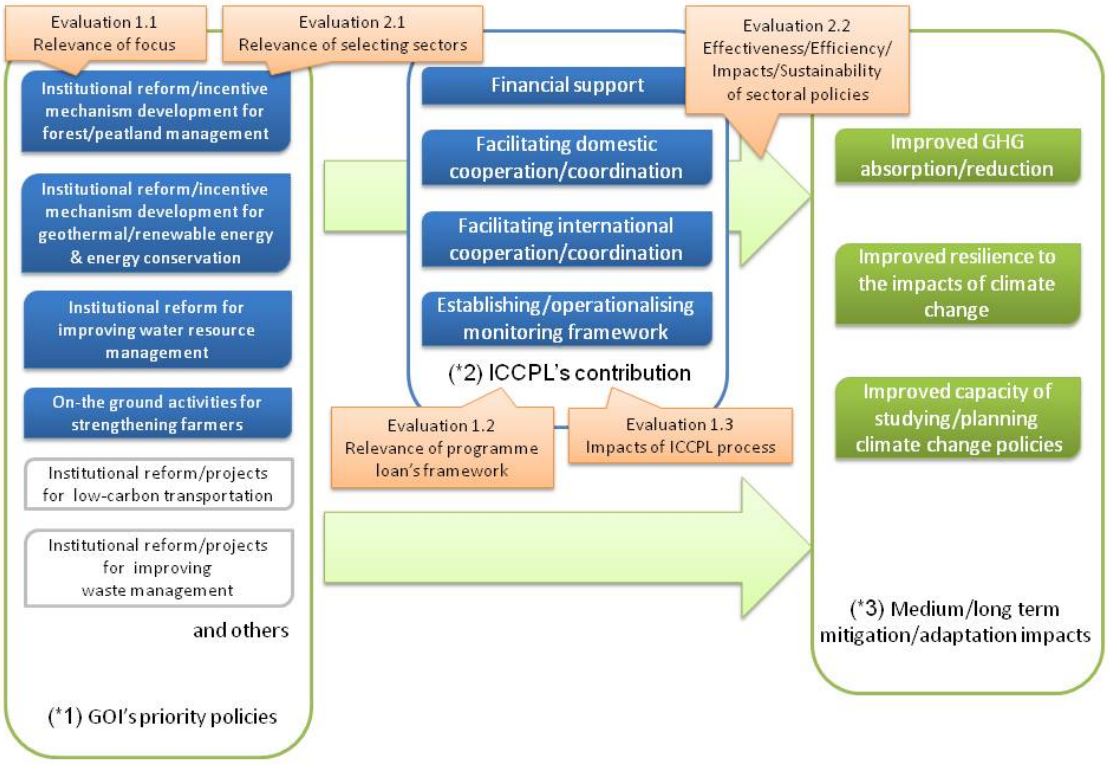


Figure 1.2. Concept of impact generation from the ICCPL
*Prepared by ICCPL A&M team, based on JICA's preliminary evaluation of ICCPL.

In the light of this understanding, this study attempts to evaluate the following areas (the five orange boxes in Figure 1.2.):

1. Evaluation at overall programme level

With a view of close monitoring, review, and discussion of the progress/attainments of policy actions and outcomes, the ICCPL is designed to facilitate periodic dialogues among various government agencies of Indonesia and with the development partners. The following three questions are raised to examine the relevance of such a programme design and the impact such coordination and dialogue has on the GOI's climate change policies:

1.1. Relevance of four focused areas

The consistency of policy areas established for ICCPL with GOI's priority of strengthening climate change policies

1.2. Relevance of ICCPL framework

The appropriateness of providing the programme loan as a measure to support the areas of focus

1.3. Impacts at overall programme level

The impacts/outcomes expected and realised by the policy actions supported under ICCPL Phase I

2. Evaluation at sectoral level

The relevance, effectiveness, and sustainability of the policy reforms and projects in the eight sectors are also analysed as collateral evidences of the ICCPL's contribution to GOI's effort to address climate change issues.

2.1. Relevance of selecting sectors/setting target outcomes

The consistency of eight sectors and 23 sectoral outcomes with GOI's priority

2.2.Efficiency/Effectiveness/Impacts/Sustainability of the sectoral policies

Outcomes/impacts generated; effectiveness/efficiency of impact generation; and the prospect of financial/human resources to sustain them.

3.2. Study methods

a) Duration of the evaluation study

May to June 2010

b) Study team

The Advisory and Monitoring Team of the ICCPL is assigned to conduct the programme evaluation study and report on the study's findings. The team comprises experts from Global Group 21 Japan Co. Ltd. (GG21), the Institute for Global Environmental Strategies (IGES), and Fisheries and Aquaculture International Co. Ltd. (FAI) with the contribution of a Forestry expert financed by AFD (hosted by Bappenas) and an expert team in Indonesia.

c) Methods and sources

1) The overall relevance of the programme and its impacts undergo the following analysis:

- Method:
  - Qualitative analysis
- Materials:
  - Laws; policy plans; guidelines; and other official documents prepared by GOI, GOJ, GOF, and other international organisations.
  - Interview reports with GOI's officers, JICA's and AFD's experts, and other local experts including researchers.

2) On the other hand, the attainment of the ICCPL's four target outcomes are examined in terms of the effectiveness and sustainability of the sectoral outcomes established in the Policy Matrix. The analysis methods are as follows:

- Method:
  - Qualitative analysis
  - Quantitative analysis of the progress/attainments of CY2007/2008/2009 policy actions
- Materials:
  - Laws; policy plans; guidelines; and other official documents prepared by GOI, GOJ, GOF, and other international organisations.
  - Interview reports with GOI's officers, JICA's and AFD's experts, and other local experts including researchers.
  - Other data obtained during the course of monitoring CY2008/2009 policy actions which are referred to as an estimation of quantitative attainments.

*Note, however, the quantitative outputs are not analysed as a direct achievement of the ICCPL, but as collateral evidences of impacts generated or to be generated by the policy actions.

3.3. Limitations

a) Limitation related to the nature of the programme loan

The first limitation is related to the scope of the study. The outputs of the policy actions were not examined in detail in this report since the main purpose of this evaluation is to understand the overall relevance and impacts of the ICCPL. However, the outputs of the policy actions were analysed extensively in the Final Monitoring Reports of CY2008/2009.

Secondly, some of the impacts stated in this report have not yet been generated. This is so because the sectoral outcomes and policy targets/actions in the Policy Matrix aim to establish legal or institutional foundations to anchor effective climate policies in the future rather than producing immediate outputs. Given the nature of the policy actions, mere analysis of existing impacts may result in underestimation. To avoid such underestimation, this report attempted quantitative analysis of the future impacts of GOI's policy actions in the 2007–2009 ICCPL Phase I.

It is noted that the impacts of the programme loan require qualitative evaluation in terms of the following points: appropriateness of the overall design and targets; effective mobilisation of information, human, and financial resources; the design and operationalisation of the monitoring and reviewing mechanisms; and involvement of the stakeholders in the framework of monitoring, reviewing, and discussion.

b) Limitations related to the evaluation

The evaluation report also has limitations from the point of view of the timing of the study and the impartiality of the study team.

Firstly, the sources of evaluation were limited due to the timing of the study. The evaluation study was conducted before the effects of policy and institutional reforms supported by the ICCPL could be realised. Though programme evaluation is usually conducted a few years after completion of the project period, evaluation of ICCPL Phase I was conducted shortly after the completion of the phase (2007–2009). Therefore, the study team was unable to obtain sufficient data to follow such effects as financial balance.

Secondly, the study team's involvement in the operation of the ICCPL meant that its neutrality as regards the evaluation would be affected. The study team has attempted to conduct an impartial evaluation; however, the team was unable to analyse and evaluate the process from a fully neutral position as a third party in relation to some topics. Instead, the team described its experiences as a party involved in the ICCPL process and these may be utilised along with sources of independent evaluation to be conducted in the future.

PART II

ANALYSIS and EVALUATION

1. Evaluation at the overall programme level

1.1. Relevance of four focused areas of ICCPL

In this section, the appropriateness of the four focused areas and the outcomes anticipated during the preparation of the ICCPL are analysed. The GOJ, JBIC, and JICA designed the scheme to support the overall strengthening of the GOI's climate change policies.

The target outcomes are as follows:

- strengthening of legal framework/incentive mechanism/forest management related to GHG emission reduction/absorption in the **LULUCF sector**
- establishing legal framework/incentive mechanism related to GHG emission reduction in the **energy sector**
- strengthening of capacity of **adaptation** policies
- responding to **cross-sectoral issues** (focusing on mainstreaming climate change issues into the national development planning)

The appropriateness of the four areas are analysed in terms of the following aspects:

- whether it is/was necessary to cooperate with the developing countries' climate change policies; and
- whether the expected outcomes meet the needs of GOI.

a) The necessity to support the efforts of developing countries in addressing climate change issues

In keeping with the principle of 'common but differentiated responsibilities', developed countries should support developing countries' efforts in addressing climate change issues.

It is widely recognised that 'social and economic development and poverty eradication are the first and overriding priorities of developing countries and that a low-emission development strategy is indispensable to sustainable development (Copenhagen Accord Para.2)'. Both the Bali Action Plan (2007) and the Copenhagen Accord (2009) mentioned that developed countries should provide adequate, predictable, and sustainable financial resources; technology; and capacity-building to support the implementation of mitigation and adaptation action in developing countries.

Furthermore, it is important to foster the design and implementation of climate policies initiated by

developing countries and to ensure sustainability of those policies' outcomes after the programme period.

Hence, it is quite appropriate to support developing countries' efforts in addressing climate change issues.

b) Meeting the Indonesian need to strengthen climate change policies

- The urgent need to cope with climate change issues in Indonesia

Indonesia is recognised as one of the largest GHG-emitting countries in the world when emission from LULUCF sector is included[3]. In addition, the rapid growth of industry and household consumption will inevitably lead to the increase of GHG emissions from the energy sector, unless appropriate measures are taken. Moreover, emissions from peat fire fluctuate year by year (conspicuously increasing during El Nino years) and make it more difficult to forecast future emission.

Table 2.1. Summary of GHG emissions from 2000–2005 from all sectors (in Gg)

	2000	2001	2002	2003	2004	2005
Energy	280,937.58	306,774.25	327,910.62	333,950.21	372,123.28	369,799.88
Industry	43,043.52	49,810.15	43,716.26	47,901.63	47,985.20	48,733.38
Agriculture	75,419.73	77,500.80	77,029.94	79,828.80	77,862.54	80,179.31
LUCF	649,254.17	560,546.00	1,287,494.79	345,489.33	617,423.23	674,828.00
Peat Fire	172,000.00	194,000.00	678,000.00	246,000.00	440,000.00	451,000.00
Waste	157,327.96	160,817.76	162,800.37	164,073.89	165,798.82	166,831.32
Total with LUCF& peat fire	1,377,982.95	1,349,448.96	2,576,951.98	1,217,243.86	1,721,193.07	1,791,371.89
Total without LUCF& peat fire	556,728.78	594,902.96	611,457.19	625,754.53	663,769.84	665,543.89

Note 1: Emission from peat fire was taken from Van der Werf et al. 2008, climate controls on the variability of fires in the tropics and subtropics. *Global Biogeochemical Cycles, 22*, GB3028, 1-13.

Note 2: Estimated based from MoF (2009) and Bappenas (2009)

Note 3: 'LUCF' stands for 'Land Use Change and Forestry'.

Source: Ministry of Environment (KLH) 2010. *Indonesia second national communication under the united nations framework convention on climate change(UNFCCC), executive summary (draft June 2010).*

On the other hand, there is an urgent need to strengthen adaptation policies in Indonesia, as the country's geography and the heavy concentration of its labour market in the agricultural and fisheries sectors make it socially and economically vulnerable to the impact of climate change. For instance, a change of temperature and precipitation pattern may cause water shortage, reduce food production, increase the risk of vector-borne and diarrhoeal diseases, and intensify the likelihood of floods and droughts.

The draft of the *Indonesia Second National Communication under the United Nations Framework Convention for Climate Change (SNC)* warns that the poor are the most seriously affected by the increasing incidence of climate hazards, as their limited resources and access to climate information and technologies limit their capacity to adapt to extreme climate events.

[3] World Resource Institute, The Climate Analysis Indicators Tool (CAIT), version 5.0 and in Peace (2007)

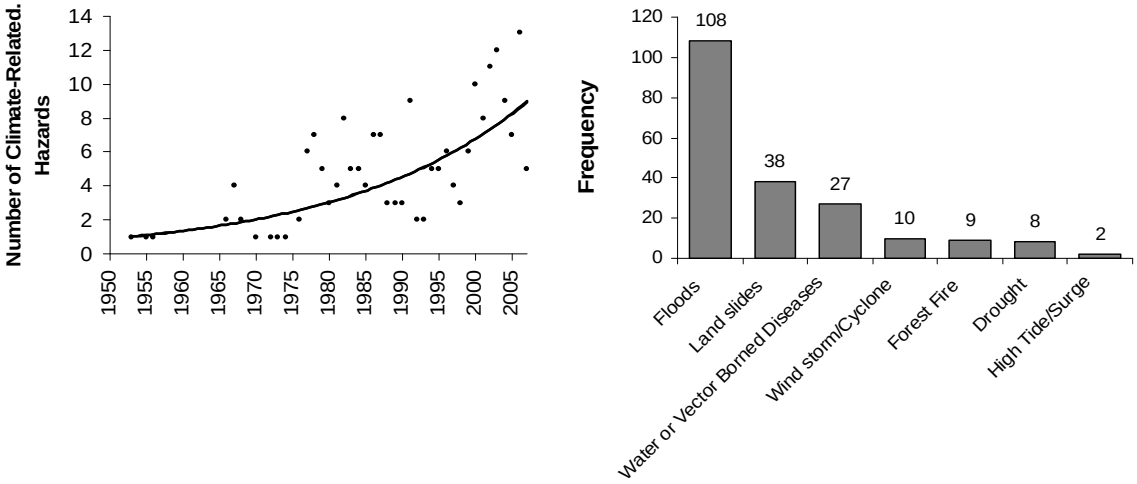


Figure 2.1. Number of climate hazards by year (left) and by type (right)
Source: Boer and Perdinan 2008, Adaptation to climate variability and climate change: Its socio-economic aspect.[4]

◆ Indonesia's active response to climate change issues

Despite Indonesia's status as a Non-Annex-I country in the UNFCCC, GOI has intensified its effort to address climate change in recent years. In September 2009, President Yudhoyono declared the GOI's target to reduce GHG emissions by 26% from BAU by 2020, adding that support from developed countries/international organisations would enable further reductions of up to 41%. Following the agreement in the 15th Conference of the Parties (COP15) under the UNFCCC in December 2009, GOI began formulating its action plan.

As climate change issues cover a wide range of sectors, on occasion governments have difficulty coordinating related agencies/stakeholders to plan and implement appropriate measures. GOI has taken steps to reinforce its institutional frameworks to mobilise intellectual, financial, and human resources from various government and non-government agencies. Among the recent institutional initiatives, two could be regarded as key milestones:

- The National Council on Climate Change (NCCC), the inter-agency council for coordinating climate policies established in October 2008; and
- The Indonesian Climate Change Trust Fund (ICCTF), established in September 2009 to finance projects and activities consistent with GOI policies.

The above mitigation target and institutional reforms are supported by a number of assessments and plans which GOI has been preparing to define its geographical, climatological, and socio-economic circumstances in relation to climate change, while mainstreaming climate change policies in its National Development Plan. The following documents (Table 2.2.) are among the most important ones recently published.

[4] Paper presented at the *EEPSEA Conference On Climate Change: Impacts, Adaptation, And Policy In South East Asia With A Focus On Economics, Socio-Economics And Institutional Aspects*, 13–15 February 2008, Bali

Table 2.2. Key documents related to climate change in Indonesia

Document	Publisher	Year	Content
National Action Plan Addressing Climate Change (NAP-CC)	KLH	2007	It provides principles covering immediate (2007–2009), short-term (2009–2012), medium-term (2012–2015) and long-term (2025–2050) time frames for both mitigation and adaptation.
National Development Planning: of Indonesia's Responses to Climate Change (Yellow Book)	Bappenas	2008	It was made out as a bridge document of the National Mid-term Development Plan (RPJM 2004-2009) and the next RPJM (2010-2014).
Indonesia Climate Change Sectoral Road map (ICCSR)	Bappenas (supported by GTZ*1)	2010	It sets priority issues and key policy actions in four 5-year periods till CY2030.
DRAFT of the Second National Communication (SNC)	KLH (supported by UNDP*2 & GEF*3)	2009	It will be submitted to UNFCCC by 2011, and states the latest national circumstances, GHG inventory, needs and policies both for Mitigation and Adaptation policies till CY2020.

*1: German Agency for Technical Cooperation
*2: United Nations Development Program
*3: Global Environmental Facility

Given GOI's efforts, the cooperation of developed countries and international agencies could provide well-timed support for GOI in its developing the legal and institutional infrastructure to implement climate change policies.

◆ ICCPL's four focused areas and the issues prioritised by the GOI

A comparison of the issues covered in GOI's key documents and those supported in the ICCPL could demonstrate whether the design of the ICCPL met GOI's needs.

Table 2.3. shows the sectors prioritised in the key documents. All four key documents mention 'LULUCF', 'energy (including industry)', 'transportation', and 'waste management' sectors for mitigation; and 'LULUCF', 'water resource', 'agriculture', 'marine, coral, fisheries', and 'health' sectors for adaptation. Therefore, it could be concluded that the cooperation was in keeping with the GOI's climate change policies since it focused on the four outcomes, i.e. 'LULUCF', 'energy', 'adaptation policies', and 'mainstreaming'; hence, it was appropriate.

However, it is also worth mentioning that some of the issues prioritised in the GOI's key documents were not covered in the expected outcomes of the ICCPL. For instance; 'transportation' sector, mitigation issues in the 'waste management' sector, and the 'health' sector were not covered in either the four outcomes or in the Policy Matrix.

Table 2.3. The policy sectors prioritised in GOI's key documents.

Sectors	NAP-CC		Yellow Book		SNC		ICCSR	
	Mitigation	Adaptation	Mitigation	Adaptation	Mitigation	Adaptation	Mitigation	Adaptation
Land Use/Forestry	✔	✔	✔	✔	✔	✔	✔	✔
Energy	✔		✔	✔	✔		✔	
Industry	✔		✔	✔	✔		✔	
Mining			✔					
Transportation	✔		✔	✔	✔		✔	
Waste Management			✔		✔		✔	
Infrastructure		✔	✔	✔			✔	
Water Resource		✔	✔	✔	✔	✔		✔
Agriculture/Livestock		✔	✔	✔	✔	✔		✔
Marine, Coral, Islands, Fishery	✔	✔	✔	✔		✔		✔
Disaster/extreme weather								✔
Health		✔		✔		✔		✔

1.2. Relevance of ICCPL framework

This section attempts to highlight the appropriateness of providing the programme loan with a view to supporting the legal and institutional reforms, as well as the on-the-ground projects for the above sectors. The advantage analysis of the programme loan approach and the framework design of the ICCPL are described below.

a) The advantages of the programme loan approach

As climate change policies encompass many sectors, various government agencies, local governments, and private sectors need to be involved. Furthermore, a number of donors including developed countries and international organisations cooperate with policy reforms and on-the-ground activities related to the issue. On this account, the cooperation programme needs to be designed to meet the following conditions to strengthen a recipient government's capacity to address climate change policies:

- To cover, address, and foster upstream policies (e.g., planning, legal reform) in a number of sectors;
- to facilitate dialogues/coordination/cooperation within the agencies and local authorities of the recipient government; and
- to facilitate coordination between the recipient government and the development partners, as well as coordination among the development partners.

It has been widely recognised that developing countries can access international resources through preparing a Nationally Appropriate Mitigation Action (NAMA) plan and sharing information related to monitoring, reporting, and verifying of mitigation actions. The designing of the national MRV (Measurable, Reportable, and Verifiable) system is an indispensable step toward attaining this goal. In this regard, it is also desirable that the international cooperation programme be designed to fulfil another condition:

- To provide overall support on the planning and implementation of the policy actions as well as the monitoring and reporting of the attainments.

The programme loan approach has the advantage of meeting the above conditions. Policy dialogues and coordination conducted in association with the programme loan would enhance the efficiency and sustainability of the climate change policies of the recipient government.

Furthermore, supplemental technical assistance (TA) can be provided, as necessary, depending on the monitoring results. Finance will be provided based on the assessment of the actual results as well as the future outlook of policy and institutional reform in a recipient country.

Due to these advantages of a programme loan, the development partners (donors) will be able to support developing countries' climate change policies effectively. Therefore, it can be concluded that GOJ appropriately selected the programme loan as a means of supporting GOI's climate change policies.

b) Appropriateness/expected advantages of the ICCPL's framework

ICCPL, which was mainly designed for the effective planning and implementation of climate change policies, provided financial assistance to GOI. In this regard, improving inter-ministerial coordination within GOI, facilitating international coordination between GOI and development

partners as well as among the development partners, and preparing the framework for future international cooperation to address mitigation and adaptation as emphasised in the international agreements will be essential.

◆ To facilitate inter-ministerial coordination

Climate change policies require improved coordination among national and local agencies for two reasons: (1) a number of the government agencies in Indonesia implement policy actions related to climate change issues; and (2) the local governments are responsible for the necessary policy and/or institutional reforms as well as on-the-ground activities.

Just to name a few, the Ministry of Public Works (PU) and the Ministry of Forestry (MOFR) are supposed to work cooperatively with the local governments to review the spatial plans to enable effective management of forest, watershed, and farmland.

In the case of disaster management administration, a number of the local governments are working on establishing disaster management agencies (BPBDs) under the legal oversight of the Ministry of Home Affairs and the National Agency for Disaster Management (BNPB). Unfortunately, most of the newly established BPBDs have insufficient technical and financial resources to prepare local disaster management plans and to coordinate activities among stakeholders. Therefore, it is strongly desired that the relevant ministries and agencies provide financial and technical support in a coordinated manner.

On this account, the ICCPL was designed to encourage synergies between multisectoral and multilevel agencies. During ICCPL Phase I, periodic dialogues were planned with a view to accomplishing the following:

- Accelerating the capacity development of the recipient government's coordinating agencies; and
- Facilitating coordination among the central agencies and local governments of the recipient government, and improving the resources allocation necessary for policy actions at all levels.

◆ To facilitate international coordination

As well as inter-ministerial coordination, harmonisation of the aid process is fundamental to the effective attainment of the policy actions related to climate change issues.

It was expected that the recipient government and the development partners would increase dialogues to enable appropriate allocation of resources and to share the know-how accumulated.

In the case of ICCPL Phase I, dialogue meetings were held at two levels. Director-general level representatives of the GOI's ministries as well as agencies of the development partners were invited to SCs, while director (echelon II) levels from GOI as well as the A&M team were invited to attend TTMs.

The mandates of the SC and TTM for CCPL are defined by Bappenas's ministerial decree No. 203/2008 as follows:

Mandates of CCPL Steering Committee:

- Direct the policy for the implementation of policy matrix;
- Provide overall coordination for the monitoring of policy matrix implementation;

- Approve the monitoring results;
- Coordinate confirmation of policy matrix implementation with the donors; and
- Report monitoring results to the State Minister of Development Planning/Chief of Bappenas.

Mandates of CCPL Technical Committee:

- Develop schedule and work plan;
- Oversee technical coordination for monitoring of policy matrix;
- Provide recommendations to steering committee for problems found during monitoring of policy matrix implementation; and
- Report monitoring results to steering committee.

From these dialogues, it was expected that GOI and the development partners (GOJ and GOF) would have more in-depth discussions regarding progress/attainments of the target actions and outcomes, obstacles/challenges to the implementation of the policy reforms and on-the-ground activities, and appropriate remedial measures.

The evaluation report analyses the actual outputs of SCs and TTMs in a later section, titled '1.3. Actual contribution of ICCPL'.

◆ As a pioneering effort of international cooperation based on the Bali Action Plan and the Copenhagen Accord

Besides facilitating inter-ministerial and international coordination, the framework of the ICCPL was also designed with the objective of developing an international cooperation mechanism that would address climate change issues in line with the international agreements.

The Bali Action Plan as well as the Copenhagen Accord state that international society needs to strengthen financial and technical cooperation in efforts to reduce the GHG emissions of developing countries. Developing countries can access international resources through preparing a NAMA plan, and sharing information related to monitoring, reporting, and verifying of mitigation actions. Designing a national MRV system is an indispensable step towards attaining this goal.

ICCPL provides support for the planning/implementation/monitoring/ reporting of climate change policies by a Non-Annex-I country. This could contribute to the development of a NAMA plan and an MRV system for Indonesia as noted in the Copenhagen Accord, and, consequently the mitigation programmes and actions of the Policy Matrix could potentially be developed into the NAMA plan for Indonesia.

Furthermore, the monitoring and reporting system initiated under the CCPL could be further utilised in an MRV system in Indonesia. Also, some of the indicators in the Policy Matrix are related to the development of an MRV system, such as an inventory system under the SNC. Progress in furthering such processes is expected.

The lessons learned from the process of CCPL, particularly in the design of the Policy Matrix, policy dialogues, and monitoring could be utilised in developing NAMA and MRV prototypes, and thus would contribute to international debate related to them.

For these reasons, the framework design of the ICCPL can be considered relevant.

◆ Strong initiatives of the GOI's coordination agencies

Additionally, in the case of the ICCPL, the coordinating agencies of GOI were also expected to play a significant role in the cooperation framework. GOI's leading agencies, Bappenas and MOF, worked actively to enable better coordination for ICCPL. While GOI and GOJ were preparing ICCPL, some of GOI's agencies showed passive attitudes toward receiving ODA loan for climate change policies rather than grants. Bappenas and MOF coordinated among the agencies to gain their participation in ICCPL phase I.

In order for the programme loans to effectively contribute to the policy issues of the recipient government, the monitoring, reporting, and advisory process must be carefully designed and implemented. In particular, the monitoring and analysis should be conducted under the oversight of the recipient country in cooperation with the development partners.

1.3. Impacts at overall programme level

a) ICCPL's contribution to improving cooperation within GOI's ministries and local governments

This section attempts to analyse the actual contribution of the ICCPL in relation to the above, and to identify the related obstacles and challenges.

◆ Contribution to intra- and inter-ministerial coordination

The ICCPL contributed to the strengthening of cooperation between Bappenas and the line ministries. During the 2007–2009 ICCPL Phase I, dialogues on climate change were held and facilitated coordination among the relevant agencies, ministries, and other stakeholders in charge of specific policy sectors.

Dialogues between Bappenas and the line ministries led to increased ICCPL monitoring activities and preparation of SCs, as well as the implementation of policy actions stated in the Policy Matrix. Bappenas took the initiative to hold dialogues with the line ministries on occasions such as TTMs and discussed a series of important issues to be covered by multiple government agencies. These include the following:

- The watershed management issue was intensively discussed among Bappenas, MOFR, and PU to remove the barriers to the development of a watershed management policy;
- Bappenas involved various ministries as well as academic and private stakeholders in the discussion on climate change issues during the preparation of the Indonesia Climate Change Sectoral Road map (ICCSR) and the Medium-term National Development Plan (RPJMN) 2010–14; and
- Bappenas also gathered opinions from a wider spectrum of stakeholders in preparing the National Action Plan for 26% emission reduction.

The ICCPL initiated 'sectoral dialogues' convening senior government officials, business associations, research institutes, and NGOs. Two major dialogues were held during ICCPL Phase I as follows.

Table 2.4. Sectoral dialogues during ICCPL Phase I

Sector	LULUCF	Energy
Title	Reshaping Rehabilitation Policies in KPH (forest management unit) Framework	A Focus Group Discussion on Climate Change Program Loan (Energy Sector)
Organiser	MOFR	ICCPL A&M team
Participants	- Senior MOFR officials, including 6 echelon I and 6 echelon II officers, - Representatives from development partners such as AFD, Deutsche Gesellschaft für Technische Zusammenarbeit (GTZ), the World Bank (WB), and DFID. - Representatives from business associations, research institutes, and NGOs.	- Senior government officials from Ministry of Energy and Mineral Resources (ESDM), Ministry of Industry (MOI), MOF, Coordinating Ministry for Economics (EKUIN) - Executive officials of State Electricity Company (PT.PLN) and PT. Energy Management Indonesia - JICA, AFD, WB, United States Agency for International Development (USAID), Australian Agency for International Development (AusAID), GTZ, and Kreditanstalt für Wiederaufbau (KfW) - Representatives from private sectors
Main issues	To strategise the placing of rehabilitation programmes under the management of KPH.[5]	Renewable energy development, energy efficiency and energy conservation, clean technology development, and energy subsidy
Date/Venue	28 January 2010, MOFR, Jakarta	29 January 2010, Sultan Hotel, Jakarta

Through the operation/implementation of relevant policies in each sector, a number of government agencies improved intra-ministerial/sectoral coordination.

- Agriculture sector: Information exchange was improved between different implementers of similar activities, such as the System of Rice Intensification (SRI, implemented by the PU and Ministry of Agriculture [MOA]), the Climate Field School (CFS, implemented by the directorate general of food and crops [DGFC] and the director general of land and water management [DGLWM] of MOA).
- Water resource sector: The National Water Resource Council (NWRC) was established in 2008 to play a key role in coordinating the line ministries and directorate and sub-directorate within PU as regards formulating water resources policies, programmes, and basin water management plans.

Hence, it is fair to conclude that ICCPL contributed to the strengthening of cooperation among Bappenas and the line ministries as well as within ministries.

◆ Highlights of the mainstreaming/improved inter-ministerial coordination on climate change issues

The following initiatives could be highlighted as the mainstreaming of climate change issues in GOI's development policy during ICCPL Phase I, though ICCPL activity was not the sole reason for enhancing mainstreaming.

- NCCC, composed of 17 Ministers and chaired by the President, was established by presidential regulation in 2008 to coordinate Indonesia's climate change policies and international positions. A secretariat and eight working groups perform NCCC's duties

[5] Dialogues are one way of building greater appreciation amongst the line ministries of climate change programme loans. Understanding and appreciation amongst government officers of the CCPL was sometimes low, making it difficult to arrange interviews and gather information.

including coordination of stakeholders, studies/researches related to mitigation, adaptation, fiscal policies, and technology transfer, and drafting policy papers;

- ICCTF was launched in 2009 with a view to harmonising and facilitating fund-raising on climate change issues;
- Agency for Meteorology and Geophysics (BMG) was reorganised into Agency for Meteorology, Climatology, and Geophysics (BMKG) to address climate change as well as conventional meteorological forecasting;
- ESDM launched the directorate general on new and renewable energy;
- MOFR established the Woking Group on Climate Change (WGCC) for the evaluation of the mitigation and adaptation policies in the forestry sector. WGCC is currently drafting the regulation to establish the National REDD (Reduced Emissions from Deforestation and Forest Degradation) Working Group. REDD Working Group consists of high level officials from 11 ministries, other national bodies, local governments where REDD-plus activities are located, and civil society representatives. The Letter of Intent (LOI) with Norway specifies that a 'special agency reporting directly to the President to coordinate the efforts pertaining to the development and implementation of REDD+' will be established;
- Minister of Forestry issued a Decree assigning a special think tank team composed of eight experts (Tim-8) to advise the minister on actions to contribute to the national 26% emissions reduction target, among other issues. Tim-8 conducted a scenario analysis which it presented to the minister in a policy brief on REDD;
- MOFR is preparing for the establishment of the centre for climate change under the oversight of the secretary general. An echelon 2 official will head the centre and the centre will coordinate with other ministries and within MOFR on climate change policy-making.
- PU established a temporary unit (sub-description) on climate change under the sub-directorate of hydrology and water quality with a view to following up on domestic and international meetings related to climate change. The directorate general of water resource (DGWR) is planning to officially endorse the climate change unit by 2011;
- PU is planning to establish a Working Unit for Climate Change called the MAPI team. Its main duty is to help coordinate the formulation of the policy, plan, and working programme at the Ministry of Public Works to address adaptation and mitigation issues. The team will be led by the directorate general of spatial planning; the technical team consists of representatives from each sector of PU;
- MOA established the Climate Change Committee under the Agency for Agricultural Research and Development (AARD) through a ministerial decree in October 2008. The committee consists of 32 members, including government officials and researchers from universities and international organisations such as World Agroforestry Centre (ICRAF), with a view to bringing various experts together in the agricultural and allied sectors to provide advice to the government;
- KLH began its reorganisation with a view to addressing climate change issues more proactively; and
- MOF began organising the centre for coordinating climate issues under the Fiscal Policy Office.

These agencies, committees, and centres are expected to enable effective coordination and cooperation on climate change issues in the coming years. It is desirable that roles and responsibilities for the ministries and agencies involved in implementing climate change policies should be further defined.

Moreover, the line ministries have increasingly secured more funding for their programmes/projects related to climate change issues. According to the Fiscal Policy Office, MOF, the amount of the state budget allocated to climate change issues almost doubled from 5.7 trillion Rp. in 2005 to 11.4 trillion Rp. in 2009. Because of this trend, it became easier for the line ministries to plan and conduct necessary policy reforms. As regards the energy sector, ESDM officers admit MOF became more cooperative and accommodative in meeting the requests of the line ministries for various new and renewable energy-related policies and plans and their corresponding budgets.

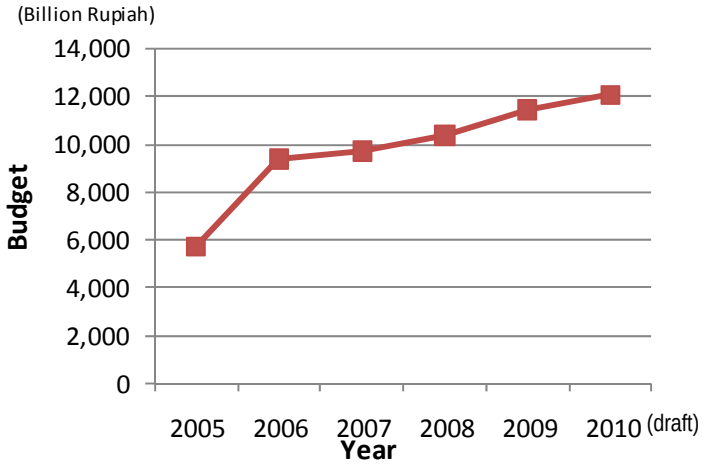


Figure 2.2 Budget allocated to climate change policies of state ministries/agencies
Source: Unpublished data shared by the Fiscal Policy Office, MOF in June 2010

b) ICCPL's contribution to improving cooperation among GOI and the development partners

◆ Improve coordination between GOI and the development partners

Discussions were held at TTMs and SCs in relation to monitoring results, progress, challenges, and measures to be taken on the policy issues.

For these dialogues, the SCs fulfilled most of the expected functions described in Bappenas's ministerial decree No. 203/2008 (see page 13 and 14 of this report). In particular, 'coordination of monitoring activities', 'approval of monitoring results', and 'coordination with donors upon confirmation of policy matrix implementation' were successfully carried out in five SCs during ICCPL Phase I. With regard to the function of 'directing policy for the implementation of the policy matrix', it is noteworthy that issues relating to the LULUCF sector, that is, GERHAN or forest rehabilitation and watershed management; and those relating to the energy sector, that is, the feed-in-tariff mechanism of geothermal energy, were intensively discussed. However, the discussion on policy directions could be further intensified. Potential measures for more profitable discussion to elaborate policy directions will be discussed later in this report (see 'Lessons learned' and 'Further points for discussion.')

Unlike SCs, TTMs could not fulfil the expected functions except that of 'reporting monitoring results to steering committee'. 'Developing schedules and work plans', 'technical coordination for monitoring', and 'providing recommendations to SCs' were rarely executed by TTMs. This was due to insufficient understanding of the ICCPL mechanism among the line ministries (see page 22 of this report).

At the same time as ICCPL Phase I, GOI strengthened its cooperation with international development partners on climate change-related policies from 2007 to 2009. Though not all are directly linked to the ICCPL, they also support the improvement of international cooperation addressing climate change issues in Indonesia.

This fact is clear from Bappenas's *List of Priority External Loans and Grant*s (Green Book).[6] In 2007, 9 out of 48 cases of project assistance and 9 of 71 cases of technical assistance listed in the book were related to climate change mitigation and/or adaptation. In 2009, 21 out of 56 cases of project assistance and 17 out of 71 cases of technical assistance could be regarded as projects related to climate change, either directly or indirectly.[7]

Prominent cases in each sector are as follows:

LULUCF sector:

- GOI and the government of Norway (GON) have signed an LOI under which GON intends to provide USD 1 billion to Indonesia's REDD+ efforts. The LOI includes a two-year suspension, starting from January 2011, on all new concessions for conversion of peat and natural forest as a mitigation strategy.
- MOFR established the Indonesia Forest Climate Alliance (IFCA) in July 2007 as a forum for communication, coordination, and consultation among stakeholders working on forest and climate change in Indonesia. IFCA published the results of analytical studies on how Indonesia could generate high quality carbon credits from the forestry sector in two reports.[8]

It is also worth mentioning that about 30% of international cooperation through MOFR is for climate change-*specific* projects (see table 2.5.), and many other projects are relevant to climate change mitigation and adaptation. In 2009, the GOI confirmed its participation in two international initiatives to support REDD-plus readiness activities: the Forest Carbon Partnership Facility managed by WB and the United Nations REDD Programme. GON intends to provide Indonesia with USD 1 billion to support REDD activities.

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[6] Bappenas 2007, 2008, and 2009. The Green Book list proposed project assistances/technical assistances which 'have already met most of the readiness criteria and that have already obtained the indicated commitment from the prospective development partners. (Ibid.)' Therefore, it is highly probable they will be launched before long.

[7] Here, projects and technical assistance fulfilling either of the following criteria are counted as those related to climate issues: (1) those raising mitigation and/or adaptation as one of the objectives; or (2) those including activities listed in the 'Activities of Long-Term Development Plan' in ICCSR. See Annex III for the list of cases of project and technical assistance.

[8] IFCA. 2007. *REDDI: Reducing Emissions from Deforestation and Forest Degradation in Indonesia – REDD methodology and summary for policy makers*; IFCA. 2008. *Consolidation Report.*

Table 2.5. International cooperation for climate change-specific projects under MOFR

Project name	International Agency	Executing Agency	Period	Total US$
Improving Governance, Policy and Institutional Arrangements for Reducing Emissions from Deforestation and Degradation (REDD)	Australian Centre for International Agricultural Research (ACIAR)	Balitbang	2008-2012	191,000
The Project for Support on Forest Management through Leveraging Satellite Information	JICA	DG of Planning	2010-2013	720,000
Joint Project for Adaptation and Mitigation of Climate Change in Forestry through A/R CDM*1 and REDD	Korean International Cooperation Agency (KOICA)	Litbang	2009-2013	3,906,000
Global Initiative of Forests and Climate Assistance to Indonesia	AusAID	DG of Planning	2007-2012	35,360,000
Indonesia-UNREDD Joint Programme	UN	DG of Planning	2009-2011	5,650,000
Tropical Forest Conservation for Reducing Emissions from Deforestation and Degradation and Enhancing Carbon Stock in Meru Betiri	The International Tropical Timber Organization (ITTO)	Litbang	2010-2013	815,000
Linking Communities in Southeast Asia to Forestry-Related Voluntary Carbon Market	United Nations Food and Agriculture Organization (FAO)	Secretary General	2009-2011	474,000
Feasibility study of a small-scale Indonesian green carbon market	AFD	DG of Planning	2009-2010	140,000
Total funding for climate change-specific programmes				47,256,000
Total international cooperation				145,423,000
% of total international cooperation for climate change				32.5

Source: Data from Bureau of Forest Planning, MOFR.& AFD

*1 Afforestation/Reforestation CDM

Energy sector:

Indonesia gained wide range of international support for energy diversification, energy conservation and efficiency. Some of major cooperation projects/programmes include the following:

- AusAID has provided MOF with TA on its development of Green Paper for mitigation activities in energy sector including fiscal incentive options for geothermal development.
- GOJ (JICA, Japan External Trade Organization (JETRO), and the Ministry of Economy, Trade, and Industry) has also provided support to a number of studies related to energy conservation, such as industrial energy audit and labelling programme, demand side management, and CO_2 mitigation roadmap. JICA has also supported GOI's studies related to fiscal incentive options for geothermal energy.
- AFD has been supporting MOI in its study on GHG emissions reduction roadmap in the cement industry. Besides, AFD, together with Norway, contributed to the 2nd phase of the McKinsey study "Indonesia Greenhouse gas abatement cost curve" conducted by NCCC.
- Besides above studies, a number of TA projects have been provided at the national and the local levels by international donor agencies such as the Asian Development Bank (ADB), WB, USAID, Netherlands, and Germany (GTZ and KfW).

Water Resources sector:

- GOI gained support on the Water Resources and Irrigation Sector from the following partners: WB for Water Resources and Irrigation Management Project (2005–2010) and Dam Operation

Improvement and Safety Project (2009–2013); ADB on Participatory Irrigation Sector Project I & II (2005–2011) and ICWRMP (Integrated Citarum Water Resource Management Investment Program) I & II (2008–2013); JICA on project sector loan for Water Resource II (2001–2011) and decentralization irrigation system improvement project in the eastern region of Indonesia (2004–2012).[9]

Agriculture sector:

- MOA will receive financial support for SRI[10] from Japan's Second Kennedy Round (2KR/SKR) program.

Further needs for international cooperation: Even though GOI has gained more international support in addressing climate change-related issues, more international cooperation for specific issues is needed.

Firstly, line ministries could be supported by a TA for better monitoring and evaluation of projects and programmes. For instance, government officials of MOA expressed that they have insufficient capacity for monitoring as well as evaluating climate change-related projects and programmes. Some officials of Bappenas also recognised the need to further develop GOI's capacity for monitoring and assessing the programmes and projects supported by foreign funds.[11]

Secondly, capacity building for climate prediction at the local level is required. While the central agencies such as BMKG and MOA have acquired experience in climate change impact assessment, local governments are deficient in those areas. Further support for local governments is necessary for more localised impact assessment, and adaptation measures that are appropriate to the local circumstances are also necessary.

◆ Improvement of coordination among the development partners

Coordination among the development partners has also improved. JICA and AFD actively shared information though the joint implementation of monitoring, especially of the mitigation sectors.

Particularly in the LULUCF sector, JICA and AFD worked closely on the design, data gathering, analysis, and reporting of GERHAN impacts and mechanism reviews.

Moreover, WB participated in the discussion on the Policy Matrix beyond 2010 with the intention of joining ICCPL Phase II as a collaborating donor. WB, JICA, and AFD shared the information on the progress of ICCPL Phase I policy actions, and they jointly prepared the Policy Matrix beyond 2010 in consultation with GOI.

Improvements in coordinating sectoral policies were also observed:

In the agriculture sector, a new JICA project for 'Supporting Implementation of Irrigation Asset Management' (SIIAM) was launched in 2009 as a follow-up to the 'Participatory Irrigation Sector-Project' (PISP) financed by ADB. MOA plans to conduct additional SRI projects with

[9] Although the programmes and projects supported by these donor agencies are not focused on climate change impact assessment and adaptation for water resources, implementation of these programmes and projects will directly or indirectly contribute to improved water resources management in relation to climate change risks in the water resources sector of Indonesia.
[10] Financial support is given to subsidise equipment and fertilizers for SRI projects.
[11] Based on an interview conducted in June 2010.

financial support from ADB (on an additional 3,000 ha) and GOJ (on an additional 1,000 ha).[12] Though these projects were not directly drawn from the operation and dialogues of the ICCPL, they also exemplify the improvement of coordination/cooperation among the development partners with regard to the climate change-related policies in Indonesia.

However, there is still room for improvement in international coordination. For instance, inviting donor agencies and international organisations not directly involved in the ICCPL as observers on the SCs may enable sharing of a wider range of perspectives in policy dialogues, and would improve the accountability of the programme.

c) ICCPL's monitoring framework

◆ Establishment and operationalisation of ICCPL's monitoring activities

Bappenas, JICA, and AFD jointly established a monitoring mechanism for ICCPL and improved this mechanism during ICCPL Phase I.

Monitoring activities have been coordinated among Bappenas and the line ministries through correspondences, individual meetings, TTMs, and SCs.

Bappenas and development partners organised external experts into the Advisory & Monitoring team (A&M team) with an intention to enable advisory and monitoring activities on the basis of high level of expertise and on a neutral and impartial ground. The A&M team, comprised of experts of GG21, IGES, and FAI, collected information on the policy actions' progress, attainments, and challenges in the light of the Policy Matrix with the support of Bappenas as well as the line ministries and local experts.

Monitoring was assisted by a close working relationship among Bappenas, JICA, AFD, and the A&M team. The A&M team collected information from official and unofficial documents provided by the line ministries, and through interviews with government officials in charge of the specific policy actions.

Later on, data gathering became more flexible. Initially, the data gathering focused on interviewing key government officials. Later, information gathering expanded to outside of Jakarta. The A&M team conducted interviews with provincial and district governments, and did field surveys for some of the on-the-ground activities (e.g. Ex-Mega Rice Project, Central Kalimantan, where the team monitored implementation of the master plan on peatland rehabilitation). This improved the accuracy of the monitoring.

While conducting monitoring activities, the A&M team discussed with the GOI's agencies the challenges and potential measures for improving policy implementation. For instance, the government agencies and the A&M team intensively discussed the following issues:

- water resource sector: obstacles faced by the river basin management office in preparing integrated water resources management plans (POLA) were intensively analysed and discussed by PU and the A&M team during the monitoring process;
- LULUCF sector: the monitoring activity revealed the need to review the GERHAN programme. On the basis of the results of this monitoring, AFD and JICA held discussions

[12] Aid from the Second Kennedy Round (2KR/SKR) programme is scheduled to be disbursed from 2010 (as of June 2010).

with GOI and conducted a joint review; and

- energy sector: monitoring activities identified that a Feed-in-Tariff scheme and an exploration fund scheme are necessary to promote independent power producers (IPP) that focus on geothermal development. This was followed by discussion between GOI and the development partners which resulted in the issuance of the Ministerial Regulation 2009/32 on Purchase Standard Price of Electricity Power by PT.PLN from Geothermal Power Stations, and the Bappenas/KfW risk mitigation study, including an exploration fund scheme.

Thus, the monitoring results served as the basis for discussion and decision-making at different levels of policy dialogues, in particular, those at SCs.

Hence, the monitoring activity also contributed to identifying constraints for achieving targeted outcomes and the need for additional TA related to climate change issues.

◆ Challenges in relation to monitoring activities

Despite these achievements, there is room for improving the monitoring mechanism. Particularly at the initial stage of the programme, the following difficulties and challenges were identified.

Difficulty in cooperating with line ministries in TTMs and in regular monitoring of activities: Due to insufficient understanding of the ICCPL mechanism and a lack of focused policies among the line ministries, there were difficulties regarding TTMs and regular monitoring activities, in contrast with Bappenas and MOF.

TTMs did not function effectively as forums for reviewing the progress of the policy actions with the presence of directorate-level officials from the line ministries. TTMs originally invited the director (echelon II) level officers to discuss the results of monitoring. Because the line ministries were not sufficiently aware of the benefits of the ICCPL, those who attended were not the proper level of officials. Consequently, this created a difficulty in verifying the results of monitoring and discussing remedial measures for delayed actions.

The monitoring team also faced difficulty in collecting information from the line ministries. As the A&M team was composed of external experts, the team could not obtain latest information and documents related to the progress of the policy actions. Officials could not share the details on policies and regulations which are under development all the time. Consequentially the A&M team could not keep up with the latest development of climate policies in some sectors/agencies.

In some cases, the government officials in charge were not even aware that the policy actions for which they were responsible were included in the Policy Matrix, and thus, their progress/attainments should be monitored and reported to the SCs.

On the other hand, the line ministries were confused by overlapping monitoring activities. There were several groups of development partners including the ICCPL requesting similar information which led to confusion and created an unnecessary workload. This could have been minimised with better coordination and communication among donors to pursue effective monitoring activities.

To summarise, the challenges related to the monitoring mechanisms were mainly caused by insufficient coordination between those who planned and implemented policy actions and those who monitored the progress/attainments. Therefore, in future cooperation programmes, measures should be taken to avoid insufficient coordination and confusion at the initial stage so that the line ministries can be better involved in the monitoring activities. Holding a workshop inviting the line

ministries to discuss the framework and procedures of monitoring activities could be a potential solution (see also 'Part III Conclusion, Lessons learned, and Further points for discussion').

To conduct efficient and effective monitoring activities, the donor and the recipient agencies should thoroughly discuss the objectives, methodologies, and implementation process of monitoring prior to launch of the programme. Particularly both the planning and technical divisions of agencies which will actually conduct the target policy reforms/projects should be involved in the discussion. Conducting an evaluation before (baseline) and during the programme period is important for meaningful assessment.

Difficulty related to targets and verification measures: The nature of target outcomes/actions and the methods for establishing them also made it difficult to monitor and verify attainments in some cases.

Firstly, the targets were not clear enough to pursue well-organised methods of collecting information, analysing and verifying the attainments, and specifying the obstacles. Insufficient clarity in target setting, including anticipated outcomes and policy actions described in the Policy Matrix, as well as inadequate means of monitoring progress and attainment levels caused serious confusion among the stakeholders.

Secondly, some of the targets did not properly reflect feasibility issues. In the case of the water resource sector, some policy actions do not require three years to complete as PU has already started preparation. On the other hand, some of the policy actions do require longer than 3 years. In such cases a preliminary observation and assessment of the time requirement would be helpful in setting proper targets.

Thirdly, the progress of actions needs to be more flexibly evaluated when unexpected conditions hinder progress/attainments of policy actions, such as the sudden change of government regulations, work plans, or organisations. For instance, initially POLA were drafted and ready to be issued before 2008; however, the modification to finalise POLA took longer than expected as they were required to be consistent with the new government regulations on water resources management issued after the initial drafting of POLA in 2008. In the energy sector, the preparation of the regulations on energy saving and efficiency was delayed as other issues gained priority in the 100-days programme of the second Yudhoyono administration. In such cases, it is desirable for the monitoring team to discuss with the recipient government (both coordinating and line ministries) the modification of the actions, including rescheduling, resetting numerical targets, or adopting alternative actions.

For more effective implementation of the programme, it is advisable to consider the MRV aspect in the design stage. At least, the clarification of attainment levels, methodologies for verification, and improvement of the linkage between actions, outcomes, and further impacts need to be assured by clear methodologies including causal chain analysis (see also 'Part III Conclusion, Lessons learned, and Further points for discussion).

2. Evaluation at the sectoral level

2.1. Relevance of selecting sectors / setting the target outcomes and policy actions

a) Consistency of the sectors / outcomes covered in the Policy Matrix with GOI's Climate Change policies

◆ Original design of the outcomes/indicators

The preparation of the matrix focused on the Indonesian priorities for climate change actions. The sectors and outcomes included in the Policy Matrix were determined through a series of dialogues between Bappenas, the line ministries, and development partners. During the discussions, the GOI's essential documents on climate change such as *National Action Plan Addressing Climate Change* (NAP-CC) were referred to as basic resources for identifying the prioritised target sectors and outcomes.

The outcomes and actions for each sector also reflected the needs of GOI. For instance, improving the resilience of farm production and reducing drought risk through adaptation with special attention to cropping patterns and irrigation management systems/techniques were also emphasised in MOA's *Strategy of Adaptation and Mitigation to Deal with Climate Change and Strategy and Technology Innovation to cope with Global Climate Change* (Bappenas 2008).

On this account, the Policy Matrix was basically designed to meet the needs of Indonesia.

However, regarding the selection/determination of sectors and sectoral outcomes, some points need to be mentioned:

- Mitigation policies in the waste management sector were not covered in the ICCPL Policy Matrix, despite the relatively large mitigation potential and low abatement cost mentioned in the GOI's key documents; and
- Some of the adaptation policies which the GOI has repeatedly stressed their importance, such as vector control, were not covered in the ICCPL Policy Matrix.

At the same time, 'verifiability' of the mitigation impacts is limited mainly due to three reasons:

- the link between expected outcomes and related policy actions were not clear in some sectors (e.g. the development of incentive mechanisms for forest management and the GERHAN programme; setting quantitative policy action for quantitative outcomes in energy diversification)
- essential raw data were not available (e.g. survival rate of the planted trees); and
- the verification measures and methodologies for quantification were not clearly defined.

These limitations were inevitable as the mitigation policies are still being developed. However, to enable effective GHG emission reduction, it is necessary to overcome these limitations, and the establishment of national inventory systems is an important first step.

◆ Authorisation of the targets by GOI

The Policy Matrix was authorised by *Yellow Book* which was issued by Bappenas in 2008. *Yellow*

Book was designed to bridge the gap between *NAP-CC* and RPJMN, and to promote financing for programmes and projects related to climate change issues.

However, securing a broad-based understanding at the line ministries' level on the ICCPL Policy Matrix and its monitoring system remained problematic. Theoretically speaking, all the line ministries have authorised the Policy Matrix as Bappenas consulted with them via planning divisions prior to finalisation of the matrix. However, quite a few government officials who cooperated in the monitoring activities expressed the view that they were not sufficiently informed of the ICCPL mechanisms. During the interviews for the programme evaluation, government officials indicated that they were not fully aware of how the current targets were established. In some cases, the section responsible for implementing an action was not even aware that it was included in the ICCPL Policy Matrix.

b) Flexibility of the Policy Matrix to fit the dynamic circumstances

As always in the case of policy programmes, the circumstances surrounding climate change policies change during the programme period. Specifically, in the case of the ICCPL, GOI's needs changed due to an improvement in the study/understanding of the impact of climate change and potential GHG sources in Indonesia; unexpected changes in administrative and political conditions; and international debates on climate change policies.

Regarding the improved study on climate change in Indonesia, GOI issued ICCSR in 2010 as a product of the governmental study aimed at mainstreaming the climate change issue into a national medium-term development plan. While most sectors in the ICCPL Policy Matrix are also covered by ICCSR, the mitigation policies in the waste management sector are not covered in the ICCPL Policy Matrix, though the study to prepare ICCSR clarified the large mitigation potential and relatively low abatement cost. Some of the adaptation policies emphasised in ICCSR, such as vector control, were not covered in the ICCPL Policy Matrix either. These two sectors (waste management and health) could have been included in the 2010 and beyond Policy Matrix.

With regard to the international discussion, GOI is currently working on the National Action Plan to achieve a 26% GHG reduction target, on the basis of the Copenhagen Accord.

Taking the above conditions into account, the Policy Matrix of the ICCPL was relevant to some extent at the time of initial commitment. However, the change of circumstances could also be more effectively reflected in the matrix during the programme period.

2.2. Impacts of sectoral policies

a) GHG emission reduction / absorption in LULUCF sector

Relevance

The initial outcome set for the LULUCF sector was the establishing of an incentive mechanism and the strengthening of the forest conservation system through necessary policy actions including the launch of REDD pilots. This was further elaborated in the Policy Matrix as (i) Increasing carbon absorption capacity and absorbing carbon dioxide; (ii) Reducing deforestation and degradation through the REDD in Indonesia (REDDI) scheme; and (iii) Improving forest management. These targets are consistent with government climate change priorities as set out in the National Action

Plan Addressing Climate Change (2007) which identifies 3 main mechanisms for supporting the mitigation effort in the forestry sector: (i) Emissions reduction and increased capacity to absorb carbon; (ii) Implementation of incentive mechanisms (including REDD); (iii) Supportive policies (spatial planning, law enforcement, poverty alleviation, research and development, capacity building, preparation. and social engineering). The target outcomes are also relevant to the 5 forest sector priority issues for 2005–2009.13 The Policy Matrix actions on KPH establishment, peatland management, and guidelines to prevent and suppress forest fires are strongly supported as mitigation strategies in Bappenas' scenario analysis.

Table 2.6. The Priority Issues in MOFR's Strategic Plan 2005–09 and Target Outcomes in the Policy Matrix 2007–09.

Forest sector priority issues, reiterated in *Strategic Plan of the Ministry of Forestry 2005–2009*	Target Outcomes in the ICCPL Policy Matrix
1.Combating illegal logging in state forests and preventing illegal trade	- Deforestation and degradation is reduced through the scheme of REDDI - Forest management is improved.
2.Revitalising forestry sector, in particular, the forest industry	
3.Rehabilitating and conserving forest resources	- Carbon absorption capacity is increased through the reforestation activities of 2007 to 2009 - CO_2 absorbed of 2007 (CO_2e/year) = 58.6 million ton - CO_2 absorbed of 2008 (CO_2e/year) = 70.2 million ton
4.Empowering economic community within and surrounding the forest;	- Forest management is improved.
5. Securing forest area for strengthening and promoting sustainable forest management.	- Deforestation and degradation is reduced through the scheme of REDDI - Forest management is improved.

Effectiveness

1) Increase of carbon absorption capacity through reforestation activities: Over 2 million ha of degraded lands were rehabilitated through tree planting and constructing soil conservation structures.

Table 2.7. GERHAN activities 2003–2008

Total area planted 2003–2008		2,009,881 ha
Total budget disbursed		12,634,681,109,217 Rp
Construction of soil conservation structures	Retaining dams	530
	Check dams	2,692
	Gully plugs	2,607
	Water ponds	912

The effectiveness of GERHAN, however, was limited. Only 67% of the planting target of 3,000,000 ha was achieved and the survival rates were mostly low to average.

Table 2.8. Tree survival rates under GERHAN

FY2003	Reforestation	58.90%–74.62%
	Private forest	59.97%–86.83%
FY2004	Reforestation	40.32%–69.32%
	Private forest	48.55%–65.17%

Source: Directorate of Forest and Land Rehabilitation. 2008. The Journey of National Movement to Rehabilitate Forest and Land.

[13] *Strategic Plan of the Ministry of Forestry 2005–2009*

The reasons for limited effectiveness include the following:

- Inadequate data, mapping, hardware, and human resources of District Forestry Offices;
- Delays in release of funding, meaning that fund availability did not coincide with the planting season—the GERHAN plan and budget had to be approved by the House of Representatives (DPR) (multi-year funding was introduced in 2008 and helped to overcome this problem);
- No monitoring or maintenance conducted after 3 years;
- Lack of capacity amongst NGOs and extension workers assisting farmers' groups; and
- Low commitment from provincial and district governments.[14]

2) Reduction of deforestation/degradation through REDDI: Progress made towards developing the REDDI scheme associated with the ICCPL Policy Matrix actions was as follows:

- 2 MOFR regulations (No: P.68/Menhut-II/2008, No. P.30/Menhut-II/2009) and 1 decree (P. 36/Menhut-II/2009) issued to regulate REDD demonstration activities and forest carbon trading;
- 9 demonstration activities approved by MOFR; and
- Readiness Preparation Plan submitted to the World Bank's Forest Carbon Partnership Facility.

3) Improvement of forest management: The ICCPL Policy Matrix actions built important foundations for improving forest management. A Working Group consisting of MOFR echelon I heads, and representatives from the Indonesian National Council of Forestry, the association of foresters, and academia was established to accelerate the establishment of KPH. As of June 2010, 7 National KPH Consultation Meetings had been held during which district governments received guidance from the Acceleration Team on how to strengthen their KPH designs.

Table 2.9. Progress in KPH establishment, as of Dec. 2009

Number of model KPH proposed	29
Number of model KPH engineering designs completed	23
Number of model KPH established through declaration by the Minister	13
Number of KPH established for conservation forests	10

Source: MOFR database.

Efficiency

Indonesia was one of the first three countries to submit a Readiness Preparation Proposal to the Forest Carbon Partnership Facility (FCPF). The Technical Advisory Panel of the FCPF recognised that the work conducted by the MOFR-led Indonesia Forest Climate Alliance provided a firm analytical grounding for the Proposal and that the ownership of REDD within MOFR was strong.[15]

There has been some inefficiency in regulating REDD. The regulatory framework for REDDI contains overlaps and inconsistencies, and MOF considers the regulation of REDD payment distributions by MOFR to be unconstitutional. To deal with the inconsistency, MOFR plans to review the regulations in 2010[16].

[14] Hartanto, Herlina. 2009. *GERHAN and its Challenges: A Literature Review*; JICA. 2009 (draft). *Review on GERHAN and Forest Rehabilitation Programme: Draft interim report*.

[15] Technical Advisory Panel, FCPF. 2009. *Indonesia's Readiness-Plan: Technical Advisory Panel Review*.

[16] Statement by the head of the working group on fiscal policy for climate change at the Ministry of

Some of the LULUCF policy actions were delayed.

- The finalisation of spatial planning, which is needed for the conversion of 308,000 ha production forest to conservation forest under the Master Plan on Peatland Rehabilitation in Central Kalimantan, has not been completed. The solution is political, not technical. The Governor and the Minister of Forestry met and agreed to finalise the spatial plan.
- The issuance of a Government Regulation on Integrated Watershed Management was delayed because of disputes between MOFR and PU. PU insisted that the regulation conform to UU 17/2004. MOFR and PU officials met and agreed to resolve the issue.

Impacts

The objective of GERHAN was to rehabilitate critical watersheds, but because of the limitations of the reporting system, it is not possible to measure the contribution of GERHAN to watershed rehabilitation. During the period of the ICCPL (2007–2009), GERHAN contributed 39.4 $MtCO_2$ to Indonesia's long-term forest carbon stock (see Annex I for estimation methodology).

A direct impact of the ICCPL 2007–2009 was the review of the GERHAN mechanism and its impacts as well as of DAK Bidan Kuhutanan (Special Allocation Fund for Reforestation). The ICCPL Monitoring Team recommended the review to identify lessons from GERHAN that could be used to strengthen the national forest rehabilitation policy for 2010–2014. AFD and JICA-commissioned experts involved in the review presented the results of field surveys and two studies to senior MOFR officials, once in 2009 and once in 2010.

Table 2.10. Selected impacts of GERHAN activities during 2003-2007

Contribution to vegetation cover at district level	5–15%
No. of people able to improve household economy through participation in farmers' groups	2,133,870
No. of extension workers employed	10,669
Households benefiting from hire as labour	1,422,858
Amount paid for labour provided by households	4,773,479,400,000 Rp

Source: DG RLPS. 2008. 'Development of GERHAN (Penyelenggaraan GERHAN)', paper presented at the working meeting of the National Development Planning Board in Jakarta, May 2008. Report submitted by the Secretary to the Director General, MOFR. Document provided by RPLS to ICCPL Monitoring Team.

Sustainability

The sustainability of GERHAN planting is anticipated to be low. Only 12% of the planned maintenance was achieved. The efficiency of GERHAN was diminished by the fact that district governments did not prioritise GERHAN, and in some cases allocated the targeted GERHAN areas for oil palm plantations, mining, etc. They often did not provide the 10% matching funding to cover GERHAN that was expected.[17]

Finance (as reported in The Jakarta Post, 14 April 2010)

[17] In areas under the Solo Watershed Management Centre, only 8 out of 15 districts in Central and East Java provided matching funds in certain years from 2003–2006. The matching budget provided by district governments in South Sulawesi in 2006 was Tana Toraja, 2.9%, and Luwu District, 0.9%, of the total GERHAN budget they received (HASTA 2007 and TIMAS 2007, cited in Hartanto, Herlina. 2009).

Table 2.11. GERHAN maintenance planning and realisation

	Planned	Realised
2nd maintenance 2004/2005	526,119	47,926
1st maintenance 2005/2006	152,042	33,928
1st maintenance 2006/2007	167,745	35,851
2nd maintenance 2006/2007	641,437	50,040
2nd maintenance 2007/2008	129,975	22,801
Total	1,617,318	190,546

Source: Directorate General of RLPS. 2010. Database.

b) GHG emission reduction in energy sector

Relevance

The ICCPL Policy Matrix covered four main areas of policy development in the energy sector which contribute to mitigating GHG emissions: 'geothermal energy', 'all other renewable energies', 'energy efficiency and conservation', and 'rural electrification'. The following table summarises GOI's policy reforms and projects corresponding to each ICCPL component. The high consistency between GOI's priorities and ICCPL's components shown in the table reconfirms the relevance of the CCPL in the context of climate change mitigation initiatives taken by the Government.

Table 2.12. GOI's priority policies and related regulations/decrees in the energy sector and ICCPL target outcomes

GOI's priority policies and related regulations/decrees	ICCPL Policy Matrix
1. Ministerial Regulation 32/2009 on Purchase Standard Price of Electricity Power by PT PLN (Persero) from Geothermal Electricity Power Stations. 2. New Ministerial Decree to mandate PT.PLN to buy power at the agreed price in the bidding document (ongoing). 3. Establishing a national exploration fund of $200 Million to cover the investment risks of initial exploration in the eastern part of Indonesia (ongoing).	Geothermal Power Development
1. Launching the new Directorate General on New and Renewable Energy (ongoing). 2. Government regulation 31/2009 on renewable energy pricing. 3. Renewable Energy Master Plan 2009 providing the information on RE mix of supply, RE Road Map, commercial and institutional development issues until 2025 (ongoing). 4. Master Plan of Energy (RUEN) and National Energy Policy and Guidance for Regional Energy Plan (ongoing).	Renewable energy development
1. Government regulation (70/2009) on energy conservation. 2. Energy audits in the industries and commercial buildings (more than 200 so far). 3. Ministerial regulation for use of CFL (2009). 4. First stage of issuance for technical guidance for energy efficiency labelling for CFL (ongoing) 5. Ministerial regulation of energy efficient labelling for air conditioner, fan and refrigerator (ongoing). 6. Studies for cement and steel sectors' CO_2 emissions reduction road maps (ongoing).	Industrial Energy Efficiency and Conservation
1. Energy self-sufficient villages program (DME, coverage of 633 villages so far).	Rural electrification and energy self-sufficient village program

*CFL: compact fluorescent lamp

Effectiveness

1) Geothermal energy development: In CY2007, the national framework for renewable energy development, including geothermal, had not been fully established. Due to its high potential of 27,000MW (of which 9,500MW is regarded as commercially viable potential), GOI has placed emphasis on geothermal power development among renewable energy resources, and has set a target of 3,790MW by 2014 and around 9,000MW by 2025.

To attain the above-mentioned long-term target, an effective mechanism to encourage private sector investments must be developed. One of the biggest achievements in this regard was the establishment of the fiscal incentive framework to provide price competitiveness to enterprises involved in geothermal-based power development. The purchasing price of geothermal power has been set at 9.7 cents/KWh through the issuance of Ministerial Regulation No.32/2009 (ESDM) on Purchase Standard Price of Electricity by PT.PLN.

In the meantime, the feasibility study for an exploration fund to establish a fiscal facility that would mitigate commercial risk during the initial exploratory stages of geothermal power development was completed.

Aside from the above attainments in the geothermal sector, 339MW[18] of geothermal-based installed capacity has newly been added from 2007 to 2009 (total installed capacity was 1,189MW by the end of 2009).

2) Renewable energy: The institutional framework for other renewable energy development improved over ICCPL Phase I. Table 2.13. shows the year-wise installed capacities of renewable energy in Indonesia which further corroborates the growing importance of green energy.

With regard to institutional development, the establishment of DEN can be regarded as a prominent achievement. DEN's responsibilities include designing the national energy policy, the national energy plan (RUEN), and the responses to national energy crises. It also monitors the implementation of national energy policies and RUEN. At the moment, DEN is in the process of publishing three main documents to support the future development of renewable energy. DEN is also preparing the blue print of the new directorate general for new and renewable energy which will be responsible for all non-fossil fuels. The upcoming national energy policy is also supporting the national pledge of 26% emissions reduction by 2020.

Table 2.13. National Renewable Energy Mix (2005–2008, Unit: MBOE)

Energy Type	2005	2006	2007	2008
Geothermal	10.9	11.2	11.4	13.4
Biofuels	-	1.4	3.7	13.5
Hydro	27.03	24.3	28.5	29.1
Photovoltaic (Thousand BOE)	0.5	6.3	14.1	22.1
Wind (Thousand BOE)	0.6	2.4	7.8	9.2

Source: Indonesia Energy Outlook 2010-2030 – ESDM, December 2009

On the other hand, effectiveness of energy diversification and energy conservation were partly affected by the delay in development of the three governmental regulations on 'new and renewable energy', 'energy demand and supply', and 'energy conservation. This was partly offset by the

[18] This figure includes installed capacity added from power plants in G. Wayang—Windu, Kamojang, Darajat, Lahendong, and Lau Debuk-Debuk/Sibayak.

issuance of the ESDM Ministerial Regulation No.31/2009 which serves to establish the purchasing price of renewable energy-based power.

The progress that has been made for renewable energy development during the first implementation stage is mainly in terms of establishing institutional and regulatory frameworks. Given that the policy actions stipulated under this outcome are entirely qualitative, quantitative assessment of this category's mitigation impact is not feasible. However, it is noteworthy that the share of renewable energy in the total electricity supply was estimated to be around 2% at the end of CY2009, as 15MW (12MW solar, 1.2MW wind, and 1.8MW biomass, excluding hydro) of total installed capacity has been newly added by renewable energy sources during CY2007 to CY2009.

3) Energy conservation: Before ICCPL Phase I, the institutional and regulatory framework for energy conservation was not fully developed. The Policy Matrix covered actions for improving energy efficiency through energy audit programmes for commercial buildings and industries, establishing energy efficient labelling systems for household appliances, and developing sector-wise CO_2 reduction road maps for selected industries.

The energy audit programme has covered in total 240 building and industries in ICCPL Phase I. Though the energy saving potential by 2009 was estimated to be 553GWh in total, only 307GWh has been saved. This shortfall was ascribed to the suspension of the energy audit programmes because of lack of funds.[19]

Household appliances including compact fluorescent lamps (CFL), refrigerators, and air conditioners had been selected as the initial target appliances for the energy efficient labelling system. While technical guidance is pending with the law division of the concerned ministry and ministerial regulation are in the internal review process for CFL, the other two appliances are under drafting stage. .

MOI has worked on an industrial CO_2 reduction road map for the cement and steel sectors, with international support. The identification of technologies to be implemented and the development of ministerial regulations are scheduled to be completed by July 2010 for the cement sector, whereas the road map for the steel sector is at the stakeholder consultation stage. The progress in implementing such roadmaps depend on how well the revised roadmaps which reflect the findings and recommendations of internationally supported studies are incorporated by MOI into the stakeholder consultation process.

4) Rural electrification and Energy Self Sufficient Village Program (DME): Access to energy in rural areas from locally available renewable energy resources has been included as an objective in the Policy Matrix. This target was pursued through the DME which began in 2007. DME aims to provide electricity generated by renewable energy to rural areas, and to foster income generation and employment creation through economic activities enabled by newly installed power supplies. In total, 633 villages were supplied electricity in ICCPL Phase I.

[19] The programme has resumed since 2009.

Table 2.14. DME by Type of Renewable Energy Sources

Type of Renewable Energy	Total Villages Covered
Hydro (Mini/pico hydro, waterwheel)	244
Solar (centralised system)	125
Wind (stand alone and hybrid)	12
Biofuel (BBN)	237
Biogas	14
Biomass	1
Total	633

Source: EKUIN

Efficiency

Due to the budgetary support nature of the CCPL, the evaluation of efficiency in the Energy Sector based on direct input-output analysis is difficult. Nonetheless, considering the attainment of individual policy actions over the past 3 years, some sub-sectors have made notable progress, while others have not.

Efficiency has been observed in the geothermal power development sector (fiscal incentives) and in the implementation of existing governmental programmes including the energy audit and DME programmes.

On the other hand, inefficiency has been observed mostly in establishing institutional and regulatory frameworks for the Energy Sector, where most of the delays have been observed. Included are the issuances of governmental regulations on energy conservation, energy demand and supply, as well as on new and renewable energy. The preparation and revision of the last two regulations were delayed due to the drastic changes over the institutional circumstances in ESDM to launch a new directorate general for new and renewable energy.

The establishment of DEN also took a considerable amount of time as compared to the time frame stipulated under the Law of Energy.

Areas related to new programmes including an energy efficient labelling system and industrial CO_2 reduction road maps (especially, for the steel sector) have also been subject to some delays in implementation. While external studies conducted for those areas have made progress, a considerable amount of time has been spent on stakeholder consultations and the preparation of regulations which is still ongoing by the line ministries.

Impacts

Given that many of the policy actions and short-term outcomes are designed to establish institutional and regulatory frameworks for increasing the effectiveness of on-going and future mitigation actions, and are mostly qualitative in nature, the qualitative aspect of the policy actions should be emphasised in evaluating ICCPL phase I. For this reason, the following can be highlighted as major achievements in the energy sector:

- Development of fiscal incentive schemes for geothermal power development through private sector participation;
- Development of institutional framework for a national energy policy and plan through establishment of DEN;
- Reinforcement of regulatory framework for promoting energy diversification and energy

conservation;
- Continued implementation of DME with increased coverage of villages; and
- Enhancement of inter-ministerial coordination and discussions through a series of policy dialogues initiated by ICCPL (TTMs and sectoral dialogue)

Overall, on the basis of the above achievements of the first phase, it can be inferred that ICCPL has made a substantial contribution to the climate change-related national policy reforms in the energy sector carried out by GOI, both tangibly and intangibly.

(1) Geothermal energy development: Due to the efforts made to improve the investment climate for geothermal power development, new developments have been observed. Six winning bids for geothermal power development have been identified since 2007, though none of them has initiated exploration and construction of power plants so far.

Likewise, following the completion of the feasibility study for an exploration fund, GOI is currently introducing an exploration fund of around USD 200 Million (of which GOI will give $20 million for CY2010) to support the initial exploration costs of geothermal energy in the eastern part of Indonesia, where the green field project risk remains high.

Increased participation by private developers in the tendering process for geothermal power development both within and outside of the Geothermal Working Area (WKP) has been observed. Therefore, it is inferred that the above policy actions have contributed to an enabling environment for private-based geothermal power development.

In addition to the above qualitative attainments, the quantitative impact of the policy actions in ICCPL Phase I over the long-term needs to be analysed. However, accurate analysis is not yet possible at the moment, as the necessary statistical data, such as on geothermal power development projects and the total amount of power newly generated from geothermal power development is unavailable. Considering the newly installed capacity of 339MW for the past 3 years, it is possible to assume that the ICCPL contributed to the above newly installed capacity which replaced coal-fired power plants, resulting in savings of approximately 2~2.3 Mt-CO_2e,[20] through its encouraging policy reforms for geothermal power development. (See Annex II.)

2) Renewable energy: With the newly installed capacity of 15MW from 2007 to 2009, the avoided emission is calculated to be approximately 0.03~0.09 t-CO_2e[21].(see Annex II)

3) Energy conservation: Based on the presented figure of 307GWh savings in the year 2007, Indonesia might have saved approximately 0.25~0.27 t-CO_2e.[22] However, the actual quantity of energy saving that companies and buildings realised through the measures recommended by the audit needs to be analysed after follow-up study and verification by the implementing agencies of GOI.

As the policy actions aimed at establishing the regulatory framework for the labelling scheme and the CO_2 reduction road map have not yet reached the implementation stage, quantitative assessment

[20] The ESDM standard emissions savings rate of 6,000 t-CO_2e/MW/Year is used to estimate the year-wise emissions reduction due to introducing geothermal energy into the supply mix.
[21] The ESDM standard emissions savings rate of 6,000 t-CO_2e/MW/Year is used to estimate the year-wise emissions reduction due to introducing renewable energy into the supply mix.
[22] The grid emissions coefficient of 0.82 kg/kWh (2008) is used as a national average to estimate the total avoided emissions of the year 2007. The grid emission coefficients for Sumatra and JAMALI for 2008 are 0.743 tCO_2eq/MWh and 0.891 tCO_2eq/MWh, respectively (ESDM 2008).

of the mitigation impacts of these actions is not yet feasible. However, estimated improvement in energy intensity to 0.31 and energy elasticity to 1.01 by the end of CY2008 shows that Indonesia is on its way toward the long-term goal of energy conservation.

Table 2.15. Transition of Energy Intensity and Energy Elasticity during CY2007–CY2009

Category	Year		
	2007	2008	2009
Energy Intensity (BOE per million Rp.)	0.29	0.31	-
Total Primary Energy Supply (Thousand BOE)	955,713	1,014,382	-
Nominal GDP (thousand USD)	432,044,790	510,779,390	-
Energy Elasticity	1.04	1.01	-
Growth Rate of Total Primary Energy Supply	6.53%	6.14%	-
Real GDP growth (base year: 2000)	6.3 %	6.1 %	-

Source：BPS, world development indicator 2009, Energy Balance of Non-OECD Countries 2009, Indonesia Energy Outlook 2010–2030 – ESDM December 2009, Hand Book of Energy Economic Statistics Indonesia 2009

4) Rural electrification and Energy Self-Sufficient Programme (DME): Implementation of DME programmes had contributed to the increase in the electrification ratio by as much as 65.1 % by 2008.

Table 2.16. Transition of Electrification Ratio from CY2007 to CY2009

Year	Electrification Ratio (%)
2007	64%
2008	65.1%
2009	-

Source: RUKN 2008-2027, ESDM 2009

In evaluating the outcome set forth for this category, it is desirable that the added value of rural electrification, such as improvement in household income, employment opportunities, and rise of education level, be incorporated in the assessment process. However, further information is required for village-based analysis.

DME has acquired its own budget heading under the directorate general of electricity and utilization (DGEEU) in the amount of Rp. 75 billion per year for 2010. The ICCPL's policy dialogues partially contributed to enhanced recognition of the importance of DME activities among ministries. It is also envisaged that DME will secure a larger budget for its full-scale implementation under the new directorate general for new and renewable energy.

Table 2.17. Summary of estimated impacts of GHG emission reduction energy sector

Component	Avoided Emission based on Method 1 (MtCO2e)	Avoided Emission based on Method 2 (MtCO2e)
Geothermal Power Development	2.034	2.307856
Other Renewable Development	0.090	0.030
Energy Conservation	0.2509	0.277
Total	2.3749	2.6149

Table 2.18. Estimated avoided emissions in energy sector until 2019

	Geothermal	Other Renewables	Energy Conservation
Year	ER (MtCO2e)	ER (MtCO2e)	ER (MtCO2e)
2009	2.3	0.03	0.276
2010	2.3	0.03	0.276
2011	2.3	0.03	0.276
2012	2.3	0.03	0.276
2013	2.3	0.03	0.276
2014	2.3	0.03	0.276
2015	2.3	0.03	0.276
2016	2.3	0.03	0.276
2017	2.3	0.03	0.276
2018	2.3	0.03	0.276
2019	2.3	0.03	0.276
Total reduction in 10 years	25.3	0.33	3.036

Sustainability

Policy reforms implemented in ICCPL Phase I have had certain positive impacts, both tangible and intangible.

The real impacts of the fundamental measures, such as the preparation of basic laws and designing of incentive mechanisms, will become evident in the coming years in the form of enhanced private investment in new and renewable energy.

Among the on-the-ground projects/programmes, DME is likely to be enhanced as the programme has acquired a separate budget.

Furthermore, the A&M team also observed favourable changes in the attitude of the government and of the line ministries towards the development and actions addressing climate change, which improvement is essential for continued progress. ESDM officers highlighted that MOF became more cooperative and accommodative in meeting the requests for budgets corresponding to various new and renewable energy-related policies and plans. DEN has also clearly mentioned that MOF became more positive towards energy pricing reform and providing financial support to develop new and renewable energies through various taxes and subsidies.

Establishment of the new directorate general for renewable energy development and energy conservation also contributed to creating an enabling environment for private investment.

Hence, policy actions/targets attained in the energy sector should generate sustainable progress beyond 2009.

c) Strengthening of adaptation policies

◆ Water resource management

Relevance

NAP-CC supports the Indonesian water vision, namely 'actualisation of stable water utilisation in an efficient, effective, and sustainable manner for the prosperity of all people' which enhances the climate change adaptation agenda in the water resources management sector. The target outcome set in the Policy Matrix of the ICCPL for the water resources management sector follows the goals and categories of activities outlined in ICCSR. Strengthening the institutional capacities of national ministries and relevant agencies to adapt to the anticipated impacts of climate change and supporting the climate-proof policy-making process and regulations are some of the major goals described in the ICCSR. Similarly, the strategic issues of the water resources sector in ICCSR have been duly addressed in the target outcomes of the ICCPL Policy Matrix.

Table 2.19. Prioritised goals, categories of activities, and strategic issues in Indonesia Climate Change Sectoral Road map (ICCSR) and Relevant Target Outcomes in the ICCPL Policy Matrix 2007–09

Goals	Categories of activities	Strategic issues in the water sector	Target outcomes in the ICCPL Policy Matrix
Strengthening the institutional capacities of national ministries and agencies to anticipate climate change impacts and supporting the climate-proof policy-making process and regulations.	Formulation of plans for specific adaptation and mitigation actions and capacity and institutional development.	Reduction of vulnerability and risk from water shortage, flood, and drought. Finding of synergetic solutions for cross-sectoral issues in agriculture, forestry, health, energy and industry. Integrated water resources management and flood control.	Improving water resource management in an integrated manner to strengthen the resilience to increasing drought and flood risks, specifically in the nationally strategic river basin of Java island

Effectiveness

GOI has made significant progress in establishing new institutions and formulating policies, laws, and regulations for improved water resources management in Indonesia.

1) Legal reforms: PU had already issued 'Government Regulation on Water Resources Management' (PP 42/2008) in 2008, a year before its target. This government regulation sets a basis for planning, implementing, monitoring, and evaluating water resource conservation; water resource development; water control; and water allocation in a comprehensive manner in the Republic of Indonesia. Drawing on several articles (130 articles) outlining the government regulations on water resources management, PU has pursued the following reforms:

Firstly, NWRC was established in 2009 as the apex body at the national level. In addition, 44 members were nominated by Presidential decree (No. 6/2009) to operationalise NWRC. NWRC has been very successful in coordinating the relevant stakeholders. Despite the short duration assigned and limited financial and human resources available, NWRC performed its stated

functions very effectively and efficiently.

Secondly, POLA were developed which are the basis for preparing policies and strategies for management of all river basins. PU focused on finalising POLA in four national strategic river basins of Java Island by 2009, namely, (i) Brantas river basin; (ii) Pemali-Comal river basin; (iii) Jratunseluna river basin; and (iv) Serayu- Bogowonto river basin. One POLA (Brantas river basin) has been issued by Ministerial Decree while 3 POLA are being prepared for ministerial decree for the other three national strategic river basins of Java Island.

2) Institutional reforms: PU has been successful in institutional development for water resource management. Thirty-one **(**31) river basin management offices (Balai and Balai Besars) were established covering 69 river basins in Indonesia. PU has already recruited and dispatched 121 new engineers from April 2010 to strengthen the operation of these river basin management offices. The prominent achievement of these management offices so far was preparation of POLA as mentioned above.

Efficiency

Most of the policy actions in the water resource sector can be evaluated as having been efficiently implemented, since these were attained on schedule; furthermore, some of the policy actions were achieved much earlier than the due date.

Impacts

Because of the completed policy actions, some impacts are already visible with regard to the improvement of integrated water resource management. Government Regulation on Water Resources Management (PP 42/2008), along with several articles (130), is used by PU as the basis for reforming water resource management. The national apex body, NWRC, has been working to improve the water resource management in Indonesia, and remarkable progress has been observed in the institutionalisation and formulation of policies and regulations for improving water resource management, such as the formation of three special ad-hoc committees, finalisation of a national water resource policy, finalising the proposal for groundwater zoning, establishment of the Provincial Water Resource Council and TKPSDA, etc. In POLA, the water resource status for respective river basins has been assessed and this status will be the basis for formulating a master plan for each river basin. Balai and Balai Besars were strengthened and continue to be reinforced with the recruitment of 121 new engineers and trained staff. However, the staff's effectiveness is yet to be seen, as the recruitment and placement of new staffs in Balai and Balai Besar began only in 2009.

Sustainability

Policy actions in the water management sector have promising sustainability over the short- and medium-term development plans. The approved and requested budget for the water resources management sector in the latest medium-term development plan (2010–2014) received the second highest allocation among the 4 directorates of PU, after that of road and transport management. Climate change related programmes/projects under DGWR have increased every year, with 8.9 trillion Rp. being allocated to DGWR in 2010; whereas 12.49 trillion Rp., 12.26 trillion Rp., 12.94 trillion Rp. and 13.79 trillion Rp. have been proposed for 2011, 2012, 2013, and 2014, respectively.

Owing to the increased budget, all Balai and Balai Besars could improve their functioning and will

sustain it in the future with the continued financial and technical support from PU.

◆ Water supply and sanitation

Relevance

The water supply and sanitation sector is regarded as one of the important sectors in the climate change regime in Indonesia as the Yellow Book highlights the importance of ensuring access to good quality water in sufficient quantity to sustain the growing economy and growing population, as well as to mitigate damage caused by floods and storm water. The ICCSR also stresses that the access to safe water resources and sanitation services is essential and devotes whole chapters to the water resources and health sectors, respectively. The essential points highlighted in these chapters relevant to this sector are continuous supply and distribution of water resources, supply and maintenance of good water quality, management of floods and urban drainage, and mitigation of landslides. For this reason, the actions covered in the ICCPL Phase I Policy Matrix are closely linked to the latest ICCSR.

However, the Policy Matrix could have been more relevant had it incorporated the mitigation aspects of the same sector, particularly in the area of solid waste management. As highlighted in the ICCSR's position on the waste sector, closing of open dumping sites; conversion of open dumping sites to sanitary and controlled landfill with/without the use of methane gas from landfill for electricity generation; and waste reduction at the source through implementing a combination of composting and the 3Rs measures of reduce, reuse, and recycle are regarded as major options for GHG emissions reduction.

Effectiveness

1) Water supply: Water supply services for rural communities have steadily improved as around 2,500 PAMSIMAS (water supply for rural communities) projects have been implemented, which cater to about 1 million persons, since the initiation of the programme in 2008. It is expected that another 1 million persons will have access to water supply in the next few years.

IKK (water supply for urban periphery areas) projects have also been implemented in urban fringes to supplement the services for urban centres provided by PDAMs (water utility corporations). More than 300 projects were implemented by the PU in the last three years which has the potential to supply water to more than 2 million persons. Further, the number of IKK projects planned in the next five-year plan is 50% larger than in the previous five years. However, there usually is a time-lag of some years between the construction of the water intake and treatment facilities by the PU and the installation of distribution pipes and household connections by the local governments as the latter starts after the completion of the PU's work.

The latest figure on the access to safe water in Indonesia could not be obtained from the counterpart in the PU. However, assuming an 18% increase is targeted, it can be translated to roughly 40 million more beneficiaries. The number of beneficiaries of the implementation of the PAMSIMAS and IKK projects over the last few years totals more than 3 million; it is planned to take this figure to 8 million by 2014. In addition, GOI plans to increase the access to tap water by 10 million households—or roughly 50 million persons assuming the average family has five members—in five years' time, by strengthening the financial capacity of PDAMs. In this way, it is expected that the

target will be achieved, although with some delays.

2) Sanitation: Since the PU took charge of the SANIMAS (decentralised sanitation system) programme, which was initially implemented by NGOs as pilot projects, sanitary conditions have improved in a number of areas. Around 100 SANIMAS projects have been implemented every year over the last four years, and these supply sanitation services for around 40,000 households; the number is expected to jump to more than 400 projects a year from 2010 onwards as a large sum of DAK is allocated for the sanitation sector. The urban sanitation condition is expected to further improve in coming years owing to this.

An operational guideline for sewerage service providers was developed in 2009 for improving the existing sewerage systems in 10 cities, as well as the planned ones in another six cities. The population currently served is 1.4 million in total, in 10 cities, which is only 8% of the residents. The PU plans to increase the served population to more than 8 million in the next five years by expanding the coverage area and establishing new ones.

The access to basic sanitation facilities is 77% nationwide[23], which already exceeds the target, according to the National Social and Economic Survey in 2007. The actual figures show that the number of beneficiaries of the 400 SANIMAS projects over the last four years is about 0.2 million, which is expected to reach more than 1 million in the next five years; whereas the number of beneficiaries of sewerage services is roughly 1.4 million and is expected to reach 8 million by 2014. Further efforts are required to increase the numbers having access in real terms through designing and implementing integrated sanitation plans consisting of centralised sewerage systems, decentralised on-site treatment systems, and septic tanks for individual houses.

3) Drainage: The ICCPL Policy Matrix also required the integration of regulations on urban drainage and river flood management. Urban drainage management is one of the key issues for maintaining human security and livelihood against storm water and floods which may be intensified by the climate change; it requires integrated planning and designing of various relevant sectors with huge financial investments in infrastructural development over a long period of time, as well as improvement in institutional capacity and the engagement of communities in mitigating the impacts of disasters. Actual implementation has just started in some selected risk-prone cities including Banda Aceh, Semarang, and Bandung.

Efficiency

With regard to the management of PAMSIMAS, its projects are efficiently implemented by the only three staff in the central office, who work closely with 13 consultants and hundreds of local facilitators in the field, monitoring and assisting in the implementation of around 1,000 projects a year. IKK projects are also efficiently implemented systematically as the actual numbers of implemented projects have exceeded the targets in the last few years.

The SANIMAS programme also has an efficient management system as most of the implemented projects are running well after completion due to financial incentives given to the managers of each project and close monitoring and supervising services extended by local partner NGOs.

[23] Whereas the access to 'qualified' sanitation facility, which has septic tanks complying with technical standards, is only 51% (WHO 2009, http://www.who.int/countryfocus/cooperation_strategy/ccsbrief_idn_en.pdf checked as of September 06, 2010.).

Impacts

Successful implementation of a large number of PAMSIMAS projects over the last few years, as well as expected ones in coming years, will have positive spill-over effects on the communities and surrounding areas. The management team intends to strengthen the trend by providing incentive grants for the best performing communities and local governments to encourage replication. Successful implementation of SANIMAS projects has led to allocation of a special budget which will lead to increased coverage and access to sanitation services, as well as to changing the behaviour and raising the awareness of residents.

The impacts of improved sanitation services by the sewerage service providers and of urban drainage management, as a result of the actions of the Policy Matrix, may require some years to become evident.

Sustainability

The management team of the PAMSIMAS programme is gradually taking over the programme from the World Bank, the donor agent, by increasing its own funding and trying to encourage replication of similar projects by local governments and communities through providing incentive grants to best performing ones and highlighting the environmental and social impacts.

Improving efficiency and financial viability are the remaining challenges for IKK projects as originally their condition was less favourable when compared with urban-concentrated PDAMs. Integration of financially sound PDAMs and some IKKs and/or introducing a cross-subsidy system within a region between water-rich and water-poor areas may be required.

Urban sanitation has further room for improvement, particularly in the design and implementation of integrated sanitation systems for each city consisting of a centralised sewerage system for urban centres, decentralised systems for some clusters, septic tanks for individual households, and a septage management/treatment system. Maintaining the financial viability of such systems is also essential through introducing an integrated tariff system with water supply and sanitation services and a cost-sharing arrangement with the residents.

In order to improve and develop the urban drainage system cost-effectively, continuous efforts in integrating various relevant sectors as well as in engaging various stakeholders such as the private sector, industries, and citizens, are required. Specifically, the sectors of city planning, land-use planning, transport management, greenery management, sewerage and drainage planning, watershed management, and housing should be incorporated.

◆ Agriculture

Relevance

A wide range of activities had already been suggested as necessary for the agricultural sector in various documents, such as the *Strategy of Adaptation and Mitigation to Deal with Climate Change and Strategy and Technology Innovation to Cope with Global Climate Change*, published by MOA in 2007, prior to the implementation of the ICCPL. Five specific actions selected in the ICCPL Policy Matrix correspond to the actions identified below (Table 2.20.) and thus the relevance of the action to the national interest was found to be quite high. The relevance of these selected actions to

the climate issues was also generally recognised by the government officials from PU and MOA.[24]

Regarding the relevance to the outcome for the agricultural sector, i.e. strengthening institutional and regulatory frameworks to improve the resilience of farm production and reduce drought risk, these five actions contributed directly and/or indirectly to the objective. In regard to capacity building at the farmer's level, SRI and CFS provided farmers with opportunities to gain knowledge and specific farming skills for adaptation. Creation of a crop calendar that responded to climate conditions would also directly contribute to strengthening farmers' skill; however, its dissemination at the local level is still limited. Development of an irrigation asset management information system and merging the water users' association and the farmers' group would contribute to achieving multiple objectives rather than adaptation only, and their relevance to the objective depends on longer-term commitment.

Table 2.20. Priority issues identified in the agricultural sector by the GOI and ICCPL

	Priority issues indicated in the existing GOI's climate change policies	Target issues under the ICCPL
Adaptation	Climate change information collection and utilisation (including early warning system, etc.)	Climate forecasting and dynamic crop calendar map-making for rice production
	Improvement of farming techniques, good practices	System for Rice Intensification (SRI)
	Development of irrigation and its management, water harvesting	Irrigation asset management system*
	Institutional/capacity development (including Field School, etc.)	Climate Field School; Merging water users' association and farmers' group
	Research on farming technologies, advocacy, food and nutrition security system (SKPG), promotion of locally grown products, etc.	-
Mitigation	Development of land clearing without burning, promotion of organic agriculture and agricultural waste recycling	-

Source: KLH 2007. *NAP-CC*; MOA 2007. *Strategy of Adaptation and Mitigation to Deal with Climate Change and Strategy and Technology Innovation to Cope with Global Climate Change*: in Bappenas 2008, Yellow Book
Note: *JICA started the Supporting Implementation of Irrigation Asset Management Project (SIIAM) in July 2009.

Effectiveness

The SRI and CFS programmes are considered highly effective, particularly at the local level because these programmes directly influence farming activities, forging a link between climate policies and farmers' livelihood. However, one of the major challenges is that the SRI programme remains very limited in scale compared with the total areas of paddy, that is, over 12 million hectares,[25] and thus further scaling-up efforts are needed. The same applies to the CFS conducted by two divisions in the MOA. In 2009, a total of 180 units of CFS were conducted to train approximately 3,200–4,000 farmers[26] out of a total agricultural population exceeding 88 million (2007).[27] Therefore, the extent to which the outcome of the programme loan for the agricultural

[24] Based on the evaluation survey using a questionnaire conducted in June 2010.
[25] Paddy area harvested in 2008 (FAOSTAT, http://faostat.fao.org/default.aspx, accessed on 18 May 2008)
[26] The average number of participating farmers and associated coverage of farming area are reported to be 20–25 farmers and 20–25 ha per unit, respectively (IGES. 2009. Final Report on the Advisory and Monitoring Activity for the Climate Change Program Loan to the Republic of Indonesia)
[27] FAOSTAT. http://faostat.fao.org/default.aspx (accessed on 26 February 2010)

sector[28]was achieved still remains limited at the national level and scaling-up of these programmes is essential to increase their effectiveness.[29]

In the evaluation of CFS, a limitation in funding, technical expertise, and measurement of water use was indicated.[30] Hence, an improvement in the programme implementation and curriculum should also be considered. In the long-run, adaptation farming methods need to expand beyond rice production as Indonesia's agricultural sector evolves (especially in the suburban areas of large cities) and people in some regions subsist on crops other than rice.

Table 2.21. Increase in number of participants in the CFS programme implemented by two divisions in MOA

	2007	2008	2009
DGFC [No of persons]	145	100	100
DGLWM [No of persons]	n/a	55	80*

Source: Unpublished data from MOA in June 2010.

*: Includes 21 programmes conducted with aid from ADB.

Efficiency

The actions selected for the Policy Matrix in the agricultural sector have been efficiently achieved, in general, because (i) they were implemented by the government budget earmarked for these actions (SRI by the MOA, Climate Field School, and crop calendar-making in response to climate change); and (ii) they received partial assistance from other donors' related projects (the development of an irrigation asset management information system, merging water users' association and farmers' group, and SRI conducted by the PU and MOA). Selected actions were implemented as scheduled for most cases.[31]

Impacts

1)Direct impacts: SRI has been promoted under the ICCPL with a view to disseminating a water-saving rice production system. On-farm evaluation of SRI was first conducted in Indonesia just before the turn of the 21st century, and since then, it has been expanded with foreign aid, such as for the Decentralised Irrigation System Improvement Project in Eastern Indonesia (DISIMP) implemented by JBIC and PU (Sato and Uphoff 2007).[32] The area under SRI has been increasing in Indonesia since 2002 (Figure 2.3). Although its scale is relatively small, the increased promotion of SRI is well-illustrated by the efforts of MOA and the local governments themselves. The areas the MOA has placed under SRI have steadily increased since its first small-scale pilot project in 2004 and its implementation has also spread across the nation (Figure 2.3).[33] The MOA continues to endeavour to expand SRI with foreign aid: in 2010, it secured funds from the ADB to implement

[28] Specified in the policy matrix as the 'strengthening of institutional and regulatory frameworks to improve the resilience of farm production and reduction of drought risk';

[29] In 2010, a total of 265 units of CFS are planned (by the DGFC and DGLWM). In 2011, DGLWM is planning to conduct 800 units (information obtained during the evaluation meeting held in June 2010).

[30] A questionnaire was responded to by the officials from the DGFC and DGLWM of MOA in June 2010.

[31] A delay was observed in finalising the ministerial decree on the irrigation asset management information system due to the long approval process in the ministry.

[32] Sato and Uphoff. 2007. A Review of the On-farm Evaluation of the System of Rice Intensification Methods in Eastern Indonesia.

[33] The MOA received support from ADB for conducting SRI on 3,000 ha in 2009. In addition, a few private companies are also conducting SRI at their own expense (information obtained during the evaluation meeting held in June 2010).

SRI on an additional 3,000 ha and also plans to receive a grant[34] from the Government of Japan for an additional 1,000 ha.

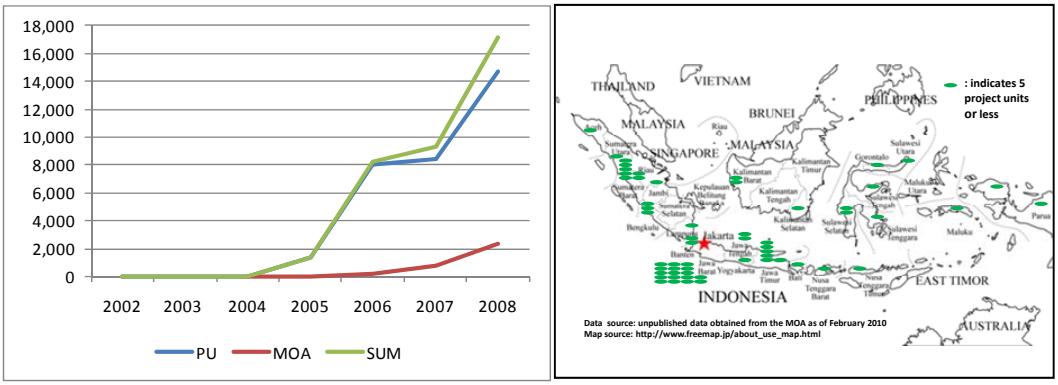

Figure 2.3. Increasing SRI area** (left, in hectares) and locations* (right) in Indonesia
Source: Unpublished data from the MOA, June 2010
*: By PU and MOA. SRI areas by PU include programmes supported by other donor agencies.
** By MOA during 2007–2009, accumulated

Overall, the system was considered to have improved the resilience of farm production/income and drought risk reduction. Although the extent of the effects still requires scientific analysis,[35] overall favourable impacts on water saving and yield[36] have been observed. The latter is important to entice more farmers to get engaged in SRI farming. Estimated impacts on the national scale are presented in Table 2.22.

Table 2.22. Estimated nation-wide SRI impacts of the programmes implemented by MOA and PU*

Estimated impact parameter	Range		Average
	Min	Max	
Gain in paddy production in programme areas (Million Tonnes)	0.21	0.43	0.32
Additional income generated (Million USD)**	61	123	92
Irrigation water saved (Million m^3)	378	755	566
Potential additional irrigated paddy area that could be created with the above water savings (ha)	15,100	30,201	22,650

* Calculated by the authors based on the total areas of 100,669 ha under SRI, using estimates available.
**: Paddy prices were the government purchasing price for wet paddy from farmers in 2009.

While SRI and CFS have had direct impacts on farming activities and, consequently, the farmers' livelihood and natural resources use, another three actions conducted under the ICCPL, i.e. developing an irrigation asset management information system, merging the water users' association with the farmers' group, and creating a crop calendar (rice) based on climate change information, may not have had similar impacts. These activities are, in general, still in their early stage of implementation and thus impacts are expected to be realised over the longer run.

2)Indirect/co-benefits related to GHG emission reduction: Though actions such as the implementation of SRI in agriculture are primarily adaptation oriented, these technologies do have positive effects on GHG emission reduction. A preliminary analysis of GHG emissions reduction

[34] Japan's Second Kennedy Round (2KR/SKR) aid program was applied to subsidise input such as farming equipment and fertilisers
[35] Technical challenges include lack of water gauges at the tertiary canals (terminal canals to farmland). A survey using a questionnaire to which the officials from the DGFC, DGLWM, and IAHRI of the MOA responded, implied the need for scientific analysis (June 2010).
[36] Varying 1.1% decrease to 35% increase when compared to conventional farming. (GG21and IGES 2010 Interim Report on Indonesia Climate Change Program Loan (II) Advisory and Monitoring in the Republic of Indonesia)

through SRI in ICCPL Phase I indicates a significant GHG mitigation potential at national level if SRI is expanded nationwide. The figure indicates that the GHG mitigation potential from SRI alone could surpass all other technologies such as zero tillage, leaf colour charts, and composting together (Figure 2.4).

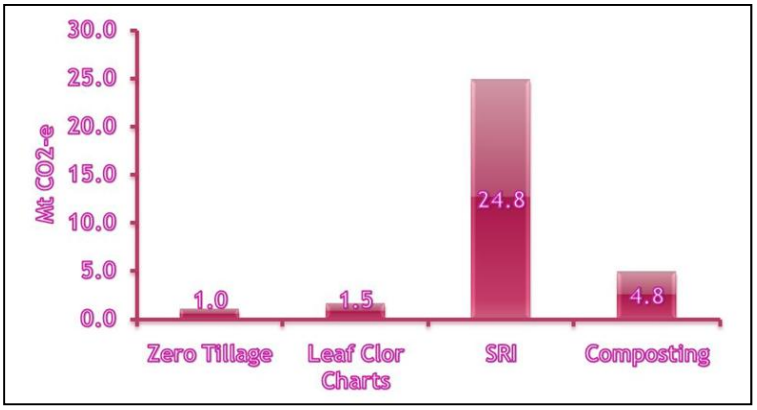

Figure 2.4. Comparative GHG mitigation potential of SRI compared with other technologies in Indonesia
Note: Calculated by authors using IPCC methodology for estimating GHG emission from flooded paddy.

Sustainability

These actions could be considered highly sustainable because they were well integrated into the ministry's work funded by both the government and donor agencies. As the programme's sustainability depends on the availability of funds to build on the success achieved under the programme, there is the need for continued support from the national government in order to sustain the programme's success over the long term. The burden on the national government would be minimised if the local governments could generate sufficient revenue to support their own developmental programmes which is a question of the larger developmental strategy employed in Indonesia. Sustainability would also improve when institutional capacity is developed.[37]

◆ Disaster management, disaster risk reduction

Relevance

Indonesia is still in the early stages of developing national and local institutions for disaster management and disaster risk reduction. The *National Action Plan for Disaster Reduction* (NAP-DR) puts first priority on institutional and legislative development. The target outcomes established in the ICCPL Policy Matrix cover three out of five priority issues (Table 2.23.)

[37] There is a tendency for government officials to depend on consultants from donor agencies if the implementation of programmes requires highly technical knowledge.

Table 2.23. Prioritised Issues in the National Action Plan for Disaster Reduction and Relevant Target Outcomes in the ICCPL Policy Matrix 2007–09.

Priority Issues in NAP-DR (2006)	Target Outcomes in the ICCPL Policy Matrix
1. Ensuring disaster risk reduction is a national and local priority: 1) National institutional and legal framework 2) Resources 3) Community participation	- Organizational Strengthening for Disaster Management - Improving Disaster Management Planning, Implementation and Evaluation - Mainstreaming the integration of Natural Disaster Management, Disaster Risk Reduction and Climate Change adaptation
2. Identify, assess, and monitor disaster risks 1) Risk assessment 2) Early warning 3) Capacity development	- Improving Disaster Management Planning, Implementation and Evaluation
3. Use knowledge, innovation, and education to build culture of safety and resilience	
4. Reduce underlying risk factors	
5. Strengthen disaster preparedness	- Organizational Strengthening for Disaster Management

Effectiveness

Despite the frequency of natural disasters, most of the local governments in Indonesia had not established authorities to implement disaster risk reduction/management policies using their own resources, at the beginning of 2009. For this reason, the fact that 18 out of 33 provincial governments and 45 out of 400 regency/city governments had BPBDs can be evaluated as a good beginning for the initial year.

The previous RPJMN (2005-09) stated the necessity of disaster management/disaster risk reduction. In 2007, the GOI issued NAP-DR stipulating the required actions for the initial stages of developing disaster management policies. However, the above plans described the risks of tsunami, flood, and landslide, while not specifying the risks related to climate change. For this reason, the fact that the latest RPJMN (2010–14) and the updated National Action Plan for Disaster Management/Disaster Risk Reduction specify the increased risks increased due to climate change indicates good progress.

Efficiency

All policy actions were attained on schedule, and could be recognised as highly efficient.

Impacts

The above-mentioned policy actions have been implemented as the foundation of planning/implementation of disaster management/risk reduction activities at the local level. They are expected to have further impacts in the following manner.

Institutional strengthening of the local agencies will continue. As of June 2010 (6 months after the programme period), the number of BPBDs launched rapidly increased to 112. BNPB expects that about 250 regencies/cities, which means about half of the total number, will finish their launching of BPBDs by 2014.

Following finalisation of the two national plans in the programme period, GOI is currently working on other detailed plans reflecting aspects of them, namely, the BNPB strategic plan, risk management plans (30 plans have been developed so far), and regional risk management plans.

At the same time, GOI has proceeded to the implementation stage of disaster management policies through the following activities: developing operational guidelines in regard to volunteers including inventory, registration, and databases; continuously registering volunteers (targeting 10,000 people/year); conducting risk response exercises (6 exercises were conducted so far, and 2 are planned in 2010); and forming risk response teams in close cooperation with the army and police (to be established in Jakarta and Malang).

Sustainability

The continuous preparation of plans/establishment of agencies as noted above indicates these actions are likely to be sustained.

Furthermore, GOI has been increasing its budget allocation for disaster management/risk reduction policies. Of the 38–40 trillion Rp. allocated to the disaster sector as a whole (including rehabilitation), 12 trillion Rp. has been allocated to disaster risk reduction. Judging from these facts, the attained outcomes will be sustained over the coming years.

◆ Marine, coral, and fisheries

Relevance

About 140 million or 60% of the total population of the country lives inside a 50km-radius of the shoreline. Climate change, particularly through rising sea levels and extreme weather conditions, may seriously threaten the security as well as economic stability of this population. Hence, effective coastal management including more productive and sustainable aquaculture is one of the most urgent issues for climate change adaptation.

The policy actions supported by ICCPL, i.e. Coral Triangle Initiative (CTI), Coral Reef Rehabilitation and Management Programme 2 (COREMAP2), and marine research for climate change, are highly consistent with GOI's policy priorities, namely, 'improvement of productivity and household incomes', 'natural resources conservation', and 'improvement of local people's quality of life in a sustainable manner through fostering community groups'.

Table 2.24. Prioritised Issues in the marine, coral, and fisheries sector and relevant target outcomes in the ICCPL Policy Matrix 2007–09.

GOI'S priority issues	Target outcomes in the ICCPL Policy Matrix
Improve the welfare of fisher communities, fish culturing farmers, and other coastal communities	Strengthening of institutional and regulatory frameworks to manage coastal zones and small islands.
Increase the role of the marine and fisheries sector as a source of economic growth	
Maintain and increase the carrying capacity as well as the environmental quality of fresh water, coastal zones, small islands, and seas	
Improve the national intelligence and health through the increase of fish consumption	
Increase the role of Indonesia's seas as a national unifier and increase the marine culture of Indonesia	

Effectiveness

The ICCPL policy matrix included various projects for supporting the coastal population through improvement of resource management and living conditions. Overall, the projects in ICCPL Phase I were effectively implemented as shown in the following major achievements:

- expansion of coral reef rehabilitation areas through transplantation and establishment of artificial coral reef;
- expansion of the MPA from 8.3 million ha in 2007 to 13.5 million ha in 76 regions by 2009;
- formation of 1,632 community groups through Community-Based Management projects;
- establishment of 298 units of information centres in project sites;
- instalment of 54 facilities for sanitation and clean water supply;
- recruitment of 732 extension workers;
- distribution of village funds and grants to 257 villages;
- distribution of materials for sea partnership socialisation to 310 villages;
- expansion of mangrove rehabilitation areas (about 110 ha, planting 53,500 mangroves) in 6 locations of 12 Municipalities; and
- improvement of the gender situation in the local villages.

However, some issues can be raised requiring further improvement:

- Fishery promotion could be more effective with a proper plan corresponding to the characteristics of the targeted areas; and
- MPA could be more carefully selected to enable sustainable regional development.

Efficiency

As all the policy actions in ICCPL Phase I have progressed on schedule, they could be evaluated as efficient.

Impacts

The above achievements of the projects during ICCPL Phase I generated a wide range of impacts on coastal populations and communities, both tangible and intangible. The highlights are as follows:

- With a series of technical assistance, training programmes, and small grants provided under the projects, the local governments developed their capacity to manage the necessary projects on their own.
- Regional communities were also empowered to select alternative livelihoods through enhanced aquaculture production.
- All community management activities were designed to address gender issues and to involve women.
- MPA network has been newly formed and is expected to contribute to the expansion of MPA and the development of coastal management systems.
- Research activities included in the programmes and projects contributed to the preparation of ICCSR.

Sustainability

The above projects are expected to continuously generate impacts, as the Ministry of Marine Affairs

and Fisheries (MMAF) has been steadily developing the management system as follows:

- COREMAP, a programme to enhance the coastal communities' welfare during the 15-year period from 1998 to 2013, was prolonged to 17 years until 2015;
- General programmes of marine conservation have been enhanced by collaborative management among GOI, local authorities, communities, private sectors, and NGOs. The programmes include capacity-building activities, establishment of sustainable funding mechanisms, and scaling up of MPAs to total 20 million hectares in year 2020; and
- A programme for 'Priority Area Rehabilitation and Efficiency in the Coastal and Marine Area' is scheduled all over the country by 2014.

Additionally, MMAF has launched (or has begun preparing) the following project:

- MMAF launched a coastal vulnerability pilot project in Semarang to study ways to minimise the climate change impact on coastal communities and aquaculture activities;
- MMAF gained support on ocean carbon research activity from a number of donor agencies and institutes including the Indonesian Climatology & Meteorological Institute, the Lamont Doherty Earth Observatory (LDEO) of Columbia University, USAID, and the First Institute of Oceanography, China (FIO); and
- A new approach called 'Minapolitan area' is planned to pursue environmental preservation together with fisheries development.

MMAF has already secured budgets for these projects. The budget secured for each project is shown in the following table.

Table 2.25 Budget planned for 2010–14 by the directorate general of Marine, Coastal and Small Islands (Billion Rp.)

Programme of Marine, Coastal, and Small Islands Resources Management	2010	2011	2012	2013	2014	2010–2014 TOTAL
Management and Development of Area and Species Conservation	73.5	109.8	151.2	190.2	220.7	745.4
Spatial Arrangement and Management Plan of Marine, Coastal, and Small Island Areas	75.2	79.1	107.5	109.7	109.7	481.1
Empowerment of Coastal and Marine Communities	35.8	53.7	100.0	105.0	110.0	404.5
Empowerment of Small Islands	11.8	76.5	122.9	166.5	200.7	578.5
Business Services and Community Empowerment	237.0	240.2	253.7	266.5	303.2	1,300.6
Improvement of Management Support and Implementation of Other Technical Duties	62.6	65.7	69.0	72.5	76.1	345.9
Total	495.9	625.0	804.4	910.4	1,020.3	3,856.0

(Number PER. 06/MEN/2010; Strategic Plan of Marine Affairs and Fisheries Ministry for 2010–2014)

Technical and financial assistance will be further provided by various donors and partners such as ADB, AusAID, USAID, the World Wide Fund for Nature, the Nature Conservancy, Conservation International, and WB.

Thus, it is likely that the programmes' objective of strengthening the conservation and utilisation of marine and coastal natural resources for sustainable community welfare can be sustainably achieved.

d) Response to cross-sectoral issues (focusing on mainstreaming climate change issues into the national development plan)

Relevance

Target outcomes established for cross-sectoral issues were 'mainstreaming climate change into the government planning process', 'increasing the number of approved CDM projects', and 'enhancing weather monitoring systems'.

Among the above three targets, 'mainstreaming climate change' is one of the most important objectives of ICCPL. Its importance is also stressed in GOI's key documents issued during ICCPL Phase I such as NAP-CC (2007) and Yellow Book (2008), as well as those issued after 2009, namely, RPJMN 2010–2014, and ICCSR (2010).

NAP-CC also stresses the need to enhance the CDM mechanism and increase the institutional capacity for collecting climate and weather data.

Enhancing the weather monitoring system is obviously relevant to strengthening GOI's climate change adaptation capability.

Therefore, the above target outcomes appropriately reflect GOI's concerns.

Effectiveness

1) Mainstreaming of climate change issues: Since Indonesia joined the UNFCCC in 1992, it continuously played an important role in the international discussions to formulate the climate policies regime beyond 2012.

However, climate change issues were insufficiently addressed in the previous RPJMN (2004–2009), despite its raising environmental sustainability as one of the urgent policy areas.

Thereafter, the GOI, particularly KLH and Bappenas, worked on mainstreaming climate change issues into national policies through preparing regulations and plans, holding workshops, and other activities, as mentioned in the two sections in this report, '1.3. (a) ICCPL's contribution to improvement of cooperation among GOI's ministries and the local governments', and '1.3. (b) ICCPL's contribution to improvement of cooperation among GOI and the development partners'.

GOI continued its efforts to mainstream climate change issues throughout ICCPL Phase I. Climate change issues were treated at the activity level[38] and not regarded as important to the development agenda in RPJMN (2004–2009). However, the RPJMN (2010–2014) has recognised climate change as a priority developmental concern. The issue is argued in the background section and overall government mission statement in the RPJPM, Book I [39]. Also, four out of ten 'national priorities'

[38] 'Program for Controlling Pollution and Degradation of the Natural Environment' outlines the activities, such as 'to profoundly assess the impact of global climate change and efforts for anticipating such impacts on priority sectors' and 'adaptation of climate change impacts to sectoral strategic plans as well as to regional development plans'.

[39] 'Challenges to National Development', in Chapter 2 'Overall Condition', argues that climate change is linked with degradation of the natural environment and environmentally non-friendly activities. Further, 'climate change threats do not only relate to the potential occurrence of unpredictable calamities, like natural disasters, but also threaten the productivity of natural resources. If this happens, then the food crises could occur again'. In addition, 'Mission 1: Continuing Development towards a Prosperous Indonesia' which works as guiding principle for the development of programmes and activities, states as

are related to climate change mitigation and adaptation; as well, climate change is treated at the programme and project level[40]. In addition, RPJMN (2010–2014), Book II, Chapter 1, 'Mainstreaming and Cross-sector Policies' contains more than 200 pages of lists of projects related to climate change in its annex and identifies the issue as one of the three major issues which require cross-field policy arrangements, along with poverty reduction and development of small islands and coastal areas. Moreover, the Annual Government Work Plan (RKP), the annual plan elaborated by RPJMN, also treats climate change as one of national development priority. RKP (2010) puts 'improving the quality of natural resources management and climate change handling capacity' as one of the five national development priorities[41].

Additionally, GOI has conducted a series of comprehensive studies on climate change covering 4 sectors for adaptation, 5 sectors for mitigation, and cross-sectoral issues. Following the studies, GOI held more than 30 coordination meetings and developed ICCSR which states the expected conditions of GHG emission, impacts of climate change, and the necessary measures to be taken in each of four five-year periods (2010–14, 2015–19, 2020–24, and 2025–29).

Judging from these attainments, it is obvious that the weight of climate change issues have increased in the overall development policies of Indonesia at the end of ICCPL Phase I.

2) Accelerated approval of CDM projects: The number of approved CDM projects has increased greatly in ICCPL Phase I.

Table 2.26. Number of approved CDM projects by Indonesian DNA

Year	Number of Approvals (in one year)	Number of Approvals (Accumulation)
2005	5	5
2006	6	11
2007	13	24
2008	46	70
2009	34	104

The National Commission for CDM (NC-CDM), the designated national authority (DNA) in Indonesia, approved 24 projects in 2007, 46 in 2008, and 34 in 2009. Compared with the results before CCPL started—5 projects approved in 2005, 6 in 2006, and 13 in 2007—this is considered a basically appreciable trend.

3)Enhancement of the early warning systems: BMKG, the national meteorology, climatology,

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follows: 'In accordance with the growing challenges of climate change, it is necessary that Indonesia's economic development mainstreams environmental problems in its strategy through adaptation and mitigation policies. Environmental damage that has already occurred should be ameliorated by policies such as the rehabilitation of forests and lands, enhancing the management of watersheds, developing environmentally friendly energy and transportation, controlling the emission of greenhouse gases, and controlling the pollution and degradation of the environment.'

[40] Priority 5, 'Food Security', deals with the stabilisation of food production through the agricultural sector's adaptation to Climate Change; Priority 6, 'Infrastructure'. deals with integrated spatial planning, efficient urban transportation, and flood control; Priority 8, 'Energy', deals with energy source diversification; and Priority 9, 'Environment and Management of Natural Disasters', deals with peatland rehabilitation, further development of EWS, and disaster risk reduction in view of the impacts of Climate Change.

[41] The other four national development priorities are (1) maintenance of public welfare as well as institutional arrangement and implementation of a social protection system, (2) improvement of Indonesian human resource quality, (3) strengthening bureaucracy and law reform, and consolidation of democracy and national security, and (4) economic recovery supported by agricultural, infrastructural, and energy developments.

and geophysics agency, was reorganised from BMG in 2008. The new agency has been working on strengthening the organisation with a view to establishing and operating the integrated early warning systems (EWS) including (1) tsunami EWS, (2) meteorological EWS, (3) climatological EWS, and (4) the integrated support for the three early warning systems. The automatic weather stations, weather radars, and digital rain gauges installed in ICCPL Phase I play an important role in the second EWS, i.e. the meteorological EWS, to aggregate information without delay. The steady progress towards strengthening early warning systems is highly evaluated.

Efficiency

As the majority of policy actions in ICCPL Phase I progressed on schedule, they could be evaluated as efficient.

Impacts

The key documents prepared during ICCPL Phase I, i.e. RPJMN 2010–14, ICCSR, and SNC, which will be finalised during 2010 and submitted in 2011, show GOI's strong commitment to climate change issues. In line with the government's overall direction, the line ministries worked on their own strategic plans (RENSTRA) using climate change policies as the bases for sectoral climate programmes/projects.

Further to the above initiatives, GOI has committed to a target of 26% emission reduction from BAU by 2020, which could be 41% lower than BAU with international support. Bappenas has coordinated with a wide range of stakeholders in preparing the national action plan for the above emission reduction target. The action plan will serve as the basis for elaborating the NAMA plan. Additionally, NCCC is also working on an update of the previous NAP-CC (2007, KLH).

In this manner, the attainments of ICCPL Phase I could be located within GOI's strong initiatives on climate change issues. The documents prepared during the period set the overall directions and specific targets for a wide range of policy reforms/on-the-ground activities both at the national and provincial/districts/cities level. The impacts of the policy actions attained during ICCPL Phase I will increasingly emerge over the coming years as GOI continues to be committed and to implement its climate change policies.

Sustainability

The attainments with regard to cross-sectoral issues in ICCPL Phase I are expected to be sustained in the coming years. Mainstreaming climate change issues into the national planning has been further advanced by the development of SNC, and the National Action Plan for attaining 26% reduction by 2020. The other climate-related organisations such as ICCTF and NCCC are actively working on the study and preparation of the essential policies, such as financial arrangements. Furthermore, these components gained more priority as the 'Key Policy Issues' and are listed at the top of the new Policy Matrix for ICCPL Phase II. Judging from these facts, it is fair to conclude that GOI is very likely to continue mainstreaming climate change issues, and that the progress/attainments will be closely monitored under ICCPL Phase II (2010–2012).

The organisation to approve national CDM projects or DNA was established in KLH in 2005. DNA was moved from KLH to NCCC in 2009, yet the number of CDM projects approved is continuously increasing, with no challenges in the approval process identified. DNA is endeavouring to facilitate CDM development by adding new emission factors and enhancing its

website in order to enhance transparency and data availability. With further governmental efforts to provide policies supportive of project development and financing, the number of CDM projects will continues to increase.

Development of EWS will also continue. BMKG has been increasing its budget for EWS from 2006 (536 billion Rp.) to 2010 (947 billion Rp.), and has already secured 5.7 trillion Rp. in the current RPJMN period (2010–2014). Moreover, along with the successful instalment of EWS equipment, BMKG has also begun working on the development of analytical capacity including model development, so that it can conduct analyses on tsunamis, extreme weather, rising sea levels, and other climate phenomena in an integrated manner and provide timely alerts. With the continuous efforts of BMKG, integrated early warning systems will be developed in the near future.

PART III

CONCLUSION, LESSONS LEARNED, and FURTHER POINTS FOR DISCUSSION

1. Conclusion

ICCPL Phase I was relevant and significantly supported Indonesia's effort to address the mitigation, adaptation, and cross-sectoral challenges of climate change issues. The ICCPL contributed towards mainstreaming climate change issues into GOI's development policies through policy dialogues and monitoring activities. The mainstreaming has appeared in the form of a number of legal and institutional reforms and issuance of key documents; additionally, it has led to the launch of organisations dealing with climate change issues which strengthened coordination within GOI on these issues.

The mitigation and adaptation outcomes for each sector were appropriately set. The targets have been efficiently achieved. Above all, policy reforms establishing the essential basis for better forest management, reforestation and land rehabilitation, renewable energy development, and energy conservation are highly evaluated. Quantitative estimates for the 'LULUCF' and 'energy' sectors indicate that GHG emissions reduction is limited, but the emissions reduction process has started, and will be further accelerated by the above reforms. At the same time, the ICCPL supported GOI's steady implementation of institutional reforms and on-the-ground activities for adaptation in the 'water resource', 'water supply and sanitation', 'agriculture', 'disaster management and disaster risk reduction', and 'marine, coral, and fisheries' sectors.

Although climate change policy reforms were significantly advanced during the loan period, GOI still needs further support. The support is necessary at both central and local levels.

2. Lessons learned

Several important lessons were learnt in ICCPL Phase I as regards designing and implementing international cooperation programmes that support developing countries' efforts to address climate change issues through A&M activities.

2.1. Ownership of relevant ministries/agencies

Ownership among all relevant ministries/agencies in the recipient government is the key to a

successful climate change programme loan. Due to the extensive nature of climate change issues, ICCPL-like operations involve a wide variety of state ministries and agencies, as well as local authorities. It was observed during ICCPL Phase I that Bappenas and MOF played active roles. Without the ownership and leadership of Bappenas, the mainstreaming of climate change issues would not have attained the current level.

On the other hand, the ownership, in other words, the recognition of involvement, among the other line ministries was weak, at least in the beginning. Objectives and the overall framework of the ICCPL were not clearly understood by the line ministries, which hindered the quick and effective launching of key operations such as monitoring activities and policy dialogues. The situation in some sectors improved toward the end of ICCPL Phase I; however, the ownership issue should be dealt with upfront at the beginning of the operation, or even at the design stage.

Capacity development of the relevant agencies and the local authorities under the programme loan framework will improve not only the ownership, but also the efficiency and effectiveness of the policy actions. During ICCPL Phase I, some of the on-the-ground projects were delayed as the local governments had insufficient human and financial resources for implementation. In view of the normally lengthy process of TA, it is desirable to include a TA component in the CCPL itself. However, there is some debate as to whether TA for supporting line-ministries' policy reforms and on-the-ground activities should be included in the programme loan's overall design.

The direct recipient of the loan (MOF in the case of Indonesia) as well as development partners could play key roles to provide further incentives to the relevant agencies. Innovative changes of budgetary allocation system related to ICCPL could be further explored. Complementarity between the CCPL and other funding mechanisms (ICCTF in the case of Indonesia) could be further discussed amongst the recipient and donor countries. For example, it is recommended that the use of the Policy Matrix as a common platform and for creating project selection criteria under ICCTF should be explored.

To maximise the ownership of relevant ministries/agencies and local authorities, which would lead to increasing the potential of the programme loan approach, the following issues and measures should be considered:

- Reflecting the national priority of the recipient government in the selection of sectors covered;
- Convening a workshop(s) inviting relevant government agencies to help them obtain sufficient understanding of the programme loan approach;
- Providing relevant government agencies with TA in a timely manner, either within the programme loan framework, or in parallel, to encourage their policy development and implementation;
- Providing TA to help relevant government agencies overcome technical difficulties in implementing policy actions, as well as in monitoring and evaluating their impacts;
- Exploring incentives to the line ministries by changing ICCPL related budgetary allocation mechanism, for example, MOF and/or Bappenas (in the case of Indonesia) could introduce a performance-based budget allocation scheme for policy actions taken by the line ministries under ICCPL;
- Using the Policy Matrix as a common platform and as a means of developing project selection criteria for other funding sources and international cooperation schemes, such as ICCTF in the case of Indonesia.

2.2. Target setting and the method of evaluation

Appropriate and clear targets, together with the method of evaluation, need to be established at the initial stage of a programme loan. Targets (outcomes, indicators in the Policy Matrix) to be achieved under the programme loan should be thoroughly discussed and agreed upon among the relevant ministries/agencies and the monitoring team at the initial stage of the programme loan so as to avoid unnecessary confusion and debates at later stages.

Insufficient level of clarity in respect to the (1) anticipated outcomes, (2) policy actions, (3) indicators, and (4) method of evaluation for monitoring progress and attainments results in serious confusion among the stakeholders. It then becomes difficult for the recipient government and the development partners to monitor the progress of policy actions, identify obstacles/challenges, and introduce the necessary measures to overcome the obstacles/challenges. Therefore, ensuring the MRV aspects with setting appropriate and clear indicators in the policy matrix in the design stage is one of the necessary conditions for effective and successful implementation of the international cooperation programmes on climate change issues.

Furthermore, targets and actions for the CCPL should be consistent with the recipient government's medium- and long-term climate targets, so as to provide necessary assistance and make needed adjustments according to the progress made towards those targets. Targets for ICCPL Phase I have been linked with national targets, such as those described in *National Action Plan addressing Climate Change*. For ICCPL Phase II and beyond, it is desirable that targets are linked with the key national targets. Medium term target outcomes and yearly target actions could be linked with the national targets stated in RPJMN 2010-2014 and in ICCSR. Closer linkages between national targets and CCPL policy matrix together with clear verification measures would contribute to attaining the midterm GHG mitigation target of 26% reduction from BAU in 2020. Sectoral priorities and feasibility should also be taken into account. In the case of Indonesia, ICCSR places priority on activities related to data collection, information development, and knowledge management pertaining to climate change such as emissions inventory, recalculated target of emissions reduction, climate impact, and local vulnerability assessment for 2010–2014. It is recommended that those actions be included in the Policy Matrix in the next phase of the ICCPL.

To ensure appropriate target-setting and to enhance the quality of measurement, reporting, and verification that supports the attainment of targets/set actions, the following points deserve consideration:

- Clarifying the link between expected outcomes and related policy actions in the Policy Matrix with appropriate methodologies such as the causal chain analysis;
- Convening sectoral dialogues and issue-specific dialogues from the outset which may help relevant government agencies and other stakeholders (including academics and/or NGOs) involved in developing the targets, monitoring methods, and verification measures;
- Establishing targets, monitoring methodologies, and verification measures in line with MRV concept at the initial stage with close consultation among the coordinating agencies, the line ministries, and the monitoring team; and
- Ensuring targets in the Policy Matrix are aligned with national goals.

It is also important to ensure the programme's flexibility to adapt to changing circumstances. It is critical for the programme to be able to shift and re-direct its focus in line with ongoing international discourse through appropriately adjustment of the Policy Matrix and relevant targets.

2.3. Strategic design of policy dialogues

Strategic design of a series of policy dialogues, with clear focus at appropriate levels, can propel climate policies and actions. Considering that climate policy reform is one of the fundamental goals of the programme loan approach, active policy dialogues at different levels determine its success. Policy dialogue could be further improved and utilised for the purpose of not only verifying the progress of policy actions, but also for exchanging views and building consensus on key policy issues among stakeholders.

During ICCPL Phase I, SC was designed to ensure high-level policy dialogues that would review the progress in attaining targets covered in the Policy Matrix as well as make necessary decisions, and SC fulfilled this function. In contrast, TTM did not meet expectations during the same period due to insufficient understanding of the ICCPL mechanism among the line ministries.

Further focused policy dialogues, namely, sectoral dialogues, were convened for the LULUCF and energy sectors. These sectoral dialogues proved to be effective for intensive discussion on sector-specific challenges. Other ideas on different types of policy dialogues include 'issue specific dialogues' focusing specifically on one area and an 'ICCPL workshop' to improve understanding of the programme loan by non-senior government officials. It is noted that rigorous monitoring can provide the basis for active dialogues.

Utilisation of policy dialogues as platforms for consensus building among relevant stakeholders could be further explored. Improving access to the policy dialogues, *inter alia*, those of non-ICCPL developing partners, is also an important issue to be addressed. Gathering third party opinions, perhaps including those of NGOs, is another issue to ensure the accountability of the programme loan activities.

For the improvement of policy dialogues, the following measures could be useful:

- Clarifying the scope and roles of meetings at different levels, such as SCs, TTMs, sectoral dialogues, and others; for example, SCs should focus on high-level policy dialogues about multisectoral issues, rather than on merely approving the results of monitoring; and
- Organising sectoral and/or issue-specific dialogues on key policy issues as necessary, otherwise regularly, for information exchange and consensus building among stakeholders.

2.4. Inter-ministerial cooperation/coordination

Inter-ministerial cooperation/coordination is essential for effective implementation of a programme loan.

Coordination among relevant sectors in the recipient government is crucial for effective policy development and implementation. As was mentioned earlier, due to the extensive nature of climate change issues, a wide variety of state ministries and agencies, as well as local authorities, must be involved in addressing those issues. Lack of coordination among ministries was the main cause of delayed or unattained actions as there was insufficient information sharing and delayed consensus building in ICCPL Phase I. Improved coordination will lead to enhanced information exchange and consensus building among relevant ministries which will in turn enhance the efficiency of policy development. Institutional arrangements for improved inter-ministerial cooperation/coordination

becomes more crucial to effective policy implementation especially when the government launches new organisations, agencies, and departments and introduces schemes related to climate issues (NCCC, ICCTF, and others in the case of Indonesia) .

To further improve inter-ministerial cooperation/coordination, the following measures could be effective:

- Establishing a focal point in each line ministry for the international cooperation programme on climate change issues, or for climate change issues in general. Forming an inter-ministerial network among these focal points will facilitate more coordinated implementation of climate change policies;
- Establishing an arena for coordinating information exchange on climate change policy, discussion, and consensus building among relevant ministries/agencies, as well as selected local government and development partners;
- Utilising the process of the climate change programme loan for effective inter-ministerial and international cooperation/coordination; and
- Ensuring that the leading national agency (or agencies) works with other relevant agencies and development partners. The roles of Bappenas and MOF are crucial in Indonesia's case. Establishing monitoring system (i.e. e-monitoring) inside Bappenas which collects documents, regulation and information related to climate change. Donor cooperation could be further explored.

2.5. International cooperation / coordination

Further international cooperation/coordination can increase the positive impacts of the ICCPL and non-ICCPL measures.

Cooperation/coordination among the recipient government and developing partners is essential for the smooth operation of the ICCPL (e.g. joint monitoring activities). Furthermore, close cooperation/coordination among the development partners could enhance the impacts of the programme loan.

Improved cooperation/coordination can also lead to further linkage between the ICCPL and other supports (ICCTF, TAs, etc.) of climate change policies and actions. The experience gained in the programme loan can be utilised for identifying assistance needs and designing international cooperation, particularly on policy issues requiring technical expertise. The Policy Matrix can serve as a common platform and to create project selection criteria for further donor coordination. Common platform for coordinating various climate change cooperation (including ICCPL, ICCTF, TAs, etc) could be further explored in order to enhance efficiency and effectiveness among relevant climate change cooperation.

To further enhance international cooperation/coordination, the following points should be considered:

- Improving cooperation among recipient government and development partners which leads to effective implementation of the programme loan including efficient and quality monitoring;
- Sharing and utilising the Policy Matrix and monitoring results among the ICCPL and non-ICCPL development partners to enhance donor coordination; and
- Further utilising the process of the ICCPL to identify assistance needs and to design co-financing and/or coordinated funding (e.g. fuel/energy subsidy reduction).

Furthermore, coordination and collaboration with ICCTF could be explored.

3. Further points for discussion

There remain several points for discussion, which are perhaps beyond the original scope of this programme evaluation report, but worthwhile for the planning of ICCPL Phase II and similar types of international cooperation.

Modality of advisory and monitoring activities of ICCPL

ICCPL is entering into its new phase, with the World Bank's participation in addition to that of the earlier donors, namely GOJ/JICA and GOF/AFD. Effective and efficient advisory and monitoring activities are the keys to the further success of the ICCPL. Therefore the monitoring and advisory framework should be carefully designed so as to ensure close collaboration among three development partners. With regard to the composition of the A&M team for ICCPL Phase II (2010 and beyond), the following aspects are worth considering:

- Establishing and maintaining a core team consisting of a few members staying in Indonesia;
- Mobilising staffs/experts of the development partners stationed in Indonesia to conduct advisory and monitoring activities;
- Mobilising external consultants to implement extra advisory and monitoring activities by visiting Indonesia from time to time.

These three aspects are not necessarily exclusive of one another, but rather the successful combination and coordination of these may maximise the effectiveness and efficiency of advisory and monitoring activities. In all of the three aspects, support by Indonesian local experts is indispensable to collect, update, translate, and analyse the information required for advisory and monitoring activities.

Modality of policy dialogues under the framework of ICCPL

In ICCPL Phase I, different levels of policy dialogues, including sectoral dialogues, TTMs, SCs, and ministerial level dialogues between GOI and GOJ, were convened and most processes have proved their usefulness in fostering GOI's efforts to address climate change issues. Key issues and measures to be considered include the following:

- The balance between advisory and monitoring activities needs to be revisited to identify the optimal intervention points.
- Strategic designing of the policy dialogue opportunities, both bilateral and multilateral ones, and reviewing of the advantages and disadvantages of policy dialogues at each level, is necessary. For example, the potential of focused policy dialogues, such as sectoral and/or issue-specific dialogues, could be further explored.

Further opportunities embedded in ICCPL

While the primary objective of the CCPL is to support the developing country's policy reforms to address climate change mitigation and adaptation issues, opportunities for donors and recipient

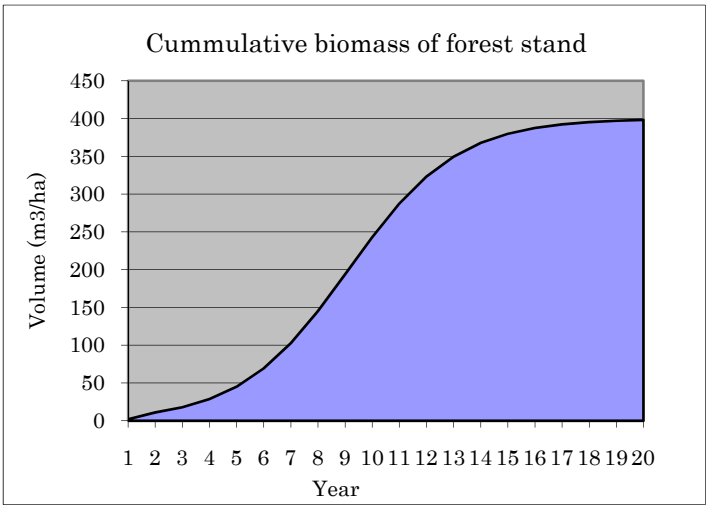
countries to derive mutual benefit could be further discussed.

- Although the current international discourse on Nationally Appropriate Mitigation Action (NAMA) and MRV is still immature, the CCPL's implications for NAMA and MRV discussions could be further examined.
- Donor and recipient countries could initiate a strategic discussion on how the CCPL can be best utilised to produce benefits, if any, to the donor countries; for example, by achieving their own mid-term GHG emissions target..

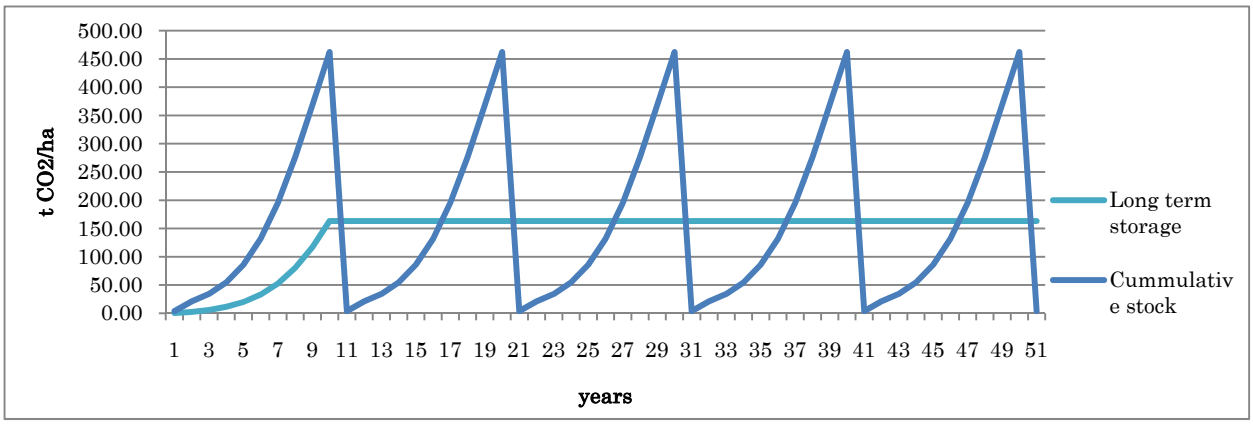
Annex I: Methodology for estimating CO_2 absorption under GERHAN

Approach

The approach to evaluating ICCPL 2007–2009 is to estimate the contribution of GERHAN activities (planting and maintenance) from 2007 to 2009 to Indonesia's long-term forest carbon stock. The accumulation of forest biomass, and hence carbon stock, follows a sigmoid pattern, with initial slow accumulation followed by a period of vigorous growth, and, thereafter, a period of decelerating growth.



Assuming a rotation of 10 years, all the absorbed carbon is lost in year 11 (ignoring soil carbon). Assuming replanting with subsequent 10-year rotations and maintenance of the land as forests, the contribution of the plantation to long-term forest carbon stock is the mean of the annual carbon stock over the 10-year rotation.



Explanation

ICCPL runs from 2007 to 2009. Sequestration from planting in 2003, 2004, 2005, and 2006 should not be included in the evaluation of ICCPL. Maintenance treatment in 2007 of plantation stands established before 2007 is accounted for.

Although the ICCPL ended in 2009, the sequestration will continue for the life of the trees. The life will depend on the purpose of planting. Ten years is considered appropriate, as fast-growing trees on private land have a rotation of about 7 years, while trees planted to rehabilitate state forest have a longer life.

Maintenance

We account for maintenance in 2007 of previous planting. For maintenance we assume 150 stems/ha planted (based on reports from contractors), which is ~10% of total no. of stems at initial planting (i.e. 150/1,100 stems).

Survival rate

For new planting in 2007, we assume 40% survival of plantation stands (figure used in Bappenas ICCSR scenario analysis) because maintenance was conducted in 2008 and 2009. For new planting in 2008, the survival rate is assumed to be 30%, because maintenance was conducted in 2009, but not in 2010. These estimates are based on field observations and survival rates reported by independent assessors.

Average annual growth (m3/ha)

In its scenario analysis for developing the climate change road map for the forestry sector, MOFR assumes forest plantation, HTI, HTR (*Hutan Tanaman Rakyat*, or Community Timber Plantation), HR (*Hutan Rakyat*, or Private Forest) with a 10-year rotation absorbs ~8 tC/ha/yr or ~29.3 tCO_2/ha/yr. We use a more conservative estimate (24.3 tCO_2/ha/yr) as not all GERHAN planting consists of commercial tree species, and because during field surveys, preparation, planting, and management were found at some sites to be sub-optimal. The estimate uses MOFR growth data found in *Vademecum Kehutanan* for 3 species planted on site quality II (range of I to V, with II being poorest conditions), and 4-year stand data for *Acacia mangium* extrapolated to 10 years. The method accounts for differences in species and management quality in and outside Java.

GERHAN target species composition in different forest categories

No.	Forest category	Timber species (%)	Multi-purpose tree species
1	Production forest (*hutan produksi*)	90	10
2	Protection forest (*hutan lindung*)	70	30
3	Conservation forest (*hutan konservasi*)	100 (endemic)	0
4	Private forest (*hutan rakyat*)	40	60

For the growth estimate, the species selected in Java are *Albizza falcataria* and teak (*Tectona grandis*), and outside Java are *Albizza falcataria*, *Acacia manium*, and *Pinus merkusii* (the latter is used as a proxy for fruit and rubber trees).

A general observation is that if plantations are not managed optimally, timber volume will be about 1/3 lower. Management in Java is generally better than elsewhere. A factor of 0.8 is applied for Java and 0.65 for outside Java to account for sub-optimal management.

Total volume m3/ha at year 10

Outside Java (~90% GERHAN planting)					
Species	Site quality II, Vol/ha at year 10 (m3)	Species proportion of total planting	Proportion of total planting outside Java	Factor for non-optimal management	Contribution to GERHAN volume per ha at year 10
Acacia	433	0.5	0.9	0.65	126.6525
Albizzia	466	0.3	0.9	0.65	81.783
Fruit and rubber	84	0.2	0.9	0.65	9.828
Inside Java (~10% GERHAN planting)					
Albizzia	466	0.6	0.1	0.8	22.368
Teak	77	0.4	0.1	0.8	2.464
Total inside and outside Java					243.0955

Formula

For annual carbon stock change in a given pool

$\Delta C = \Sigma_{ijk} (Ct2 - Ct1) / (t2 - t1)_{ijk}$ (Source: IPCC Good Practice Guidance for LULUCF)

Where:

Ct1 = carbon stock in the pool at time t1, tonnes C

Ct2 = carbon stock in the pool at time t2, tonnes C

For total tCO2 absorbed:

CO2tons= 3.67* V*D*BEF*(1+R)*CF (Source: Derived from IPCC Good Practice Guidance for LULUCF)

Where:

V = merchantable volume (m3 ha-1)

D = basic wood density (Mg d.m. m-3) (value is from ICCSR scenario analysis = 0.54)

BEF=biomass expansion factor for conversion of merchantable volume to above-ground tree biomass (value is from ICCSR scenario analysis, = 1.6)

R = root-to-shoot ratio (value is from ICCSR scenario analysis, = 0.2)

CF = carbon fraction of dry matter (Mg C (Mg d.m.)-1) (IPCC default, = 0.5)

C02tons= 3.67 Ctons

Estimation of total tCO2e absorbed over 10 years from GERHAN activities associated with period of ICCPL 2007–2009

Yield and mean long-term carbon stock per ha

Years	1	2	3	4	5	6	7	8	9	10
Current annual increment	2	9	7	11	16	24	33	42	49	49
Cumulative volume m3/ha	2	11	18	29	45	69	103	145	194	243
tCO2/ha/yr absorbed	3.81	20.98	33.98	54.44	85.78	131.79	195.33	276.08	368.47	462.29
Cumulative tCO2/ha	3.81	24.78	58.76	113.20	198.98	330.76	526.10	802.18	1170.64	1632.94
Mean long-term tCO2/ha	1632.94/10 = 163.3									

Contribution of GERHAN activities from 2007–2009 to long-term forest carbon stock

	Total ha planted	Survival rate of stands	Mean long-term tCO2/ha	Fraction GERHAN responsible for	Total tCO2
2007 maintenance of previous planting	22,801.00	0.40	163.30	0.10	148,936.13
2007 planting	339,446.00	0.40	163.30	1.00	22,172,612.72
2008 planting	348,290.00	0.30	163.30	1.00	17,062,727.10
Contribution of GERHAN activities from 2007–2009 to long-term carbon stock (tCO2)					39,384,275.95

Annex II: Underlying methodologies for quantifying avoided emissions in energy sector

1. Geothermal Power Development [Generation-based]

Method 1: Estimation utilizing ESDM's standard emission factor

E_{geo} = MW x 8600 hours/year x PLF (assuming full-time operation all year round)
EM_{geo} = E_{geo} x EF
(339 MW * 6000 tCO2e/MW/yr) /10^6 = **2.034 $MtCO_2e$**

Egeo = Power generated from geothermal power plants (MWh)
EM geo = CO_2 emission from geothermal power generation
MW = Installed capacity during CY2007-2009
PLF = average load factor of newly installed capacity (%)
EF = national grid coefficient for electricity generation

Notes:
1) Power generation data rather than consumption data are used to calculate avoided emission, as the use of the latter data may cause underestimation due to power losses.
2) ESDM's standard emissions factor (6,000 t-CO_2e /MW/Year.) was used in the calculation, as this factor already incorporates all the necessary technical details for estimation such as operating hours, plant load factor, thermal efficiency, and so on.
3) In this calculation, geothermal is assumed to have zero emissions compared to the grid supply, although in reality, geothermal energy must have some emissions. If emissions are counted, the estimated amount (2 $MtCO_2$e/year) becomes slightly less.

Method2: Estimation based on CDM approved methodology (B.6.3.)

ER = BE – PE – L
BE = EG x EF
2,672,676MWh * 0.891 tCO2e/MWh / 10^6 = 2.3813 $MtCO_2$ …①
PE = PES + PEFF
PES = ($W_{main, CO2}$ + $W_{main, CH4}$ * GWP_{CH4}) * M
PES = (0.005 + 0 * 21) * {7.5 * (7860 * 0.9) * 339} = 1.0025.4 tCO_2e
PEFF = considered none
PE = (1.0025.4 tCO_2e/yr + 0 tCO_2e/yr) /10^6 = 0.10025.4 tCO_2e…②
L = 0 (no leakage expected)…③

ER = BE – PE – L
ER = ① - ② - ③
= 2.3813 MtCO2 - 0.10025.4 tCO_2e - 0
= **2.281129 $MtCO_2e$**

where
ER = Emissions Reduction
BE = Baseline Emissions

PE = Project Emissions
L = leakage
EG = electricity supplied by the project to the grid
EF = combined margin of grid emission coefficient
PES = project emissions of CO_2 and CH_4 due to the release of non-condensable gases from the steam produced in the geothermal power plant
PEFF = Project emissions from combustion of fossil fuels related to the operation of the geothermal power plant
W_{CO2} = average mass faction of CO_2 in the produced steam (non-dimensional)
W_{CH4} = average mass faction of CH_4 in the produced steam (non-dimensional)
GWP_{CH4} = Global warming potential
Ms = Quantity of steam produced

Note:
Combined margin of grid emission coefficient 0.891 tCO2e/MWh is derived by averaging operating margin emission factor and build margin emission factor of JAMALI grid.
(Source: http://dna-cdm.menlh.go.id/id/database/)

2. Renewable Power Development

Method 1: Estimation utilizing ESDM's standard emission factor

$RE = \Sigma RE_n$ n=1,2,3,4,5
RE1 = MW x 8600 hours/year x PLF
RE2 = MW x 8600 hours/year x PLF
RE3 = MW x XX hours/year x PLF (assumption of running hours needed)
RE4 = MW x XX hours/year x PLF (assumption of running hours needed)
RE5 = MW x 8600 hours/year x PLF

EM_{RE} = RE xEF
(15MW * 6,000 t-CO_2e /MW/Year) / 10^6 = **0.090 $MtCO_2e$**
RE = total power generated from renewable energy sources (MWh)
RE1 = power generated from Biomass
RE2 = power generated from Biogas
RE3 = power generated from Photovoltaic
RE4 = power generated from Wind
RE 5 = power generated from Hyrdo (micro-hydro)

Notes:
1) ESDM's standard emissions factor, (6,000 t-CO_2e /MW/Year.) was used in the calculation, as this factor already incorporates all the necessary technical details for estimation such as operating hours, plant load factor, thermal efficiency, and so on.

Method 2: Estimation without utilizing ESDM's standard emission factor

ER = EG * EF
EG = 15MW *0.5 * (8760hr * 0.5) = 32,850 MWh
(32,850 MWh * 0.891 tCO2e/MWh) /10^6= **0.029 $MtCO_2e$**
where
EG = electricity supplied to the grid
EF = combined margin of the grid emissions factor

Notes:
Average capacity factor of 50% is used considering individual capacity factors by source (solar 21%, wind 65%, biomass 80%)
Annual operating hrs is set at half year operation (4,380 hrs)

3. Energy Efficiency (Audit)

Method 1: Estimation utilizing ESDM's national grid emission factor

EM_{AUDIT} = EE_{SAVE} x EF
307,000 MWh * (0.82kg/kWh *10^6)/ (10^6 * 10^3) = **0.2509 $MtCO_2e$**
EM_{AUDIT} = avoided emission from energy savings based on Audit Program
EE_{SAVE} = total energy saving potential (GWh) from CY2007 to CY2009
EF = national grid coefficient for electricity generation

Note:
0.82kg/kWh is the national grid emissions coefficient (ESDM 2008).

Method 2: Estimation utilizing CDM's baseline emission factor with combined margin (JAMALI grid)

307,000 MWh * 0.891 tCO2e/MWh) /10^6= **0.27 $MtCO_2e$/yr**

Annex III: List of priority cases of project assistance / technical assistance related to climate change issues

Note: *List of Priority External Loans and Grants* (*Green Book*) (Bappenas 2007, 2008, 2009) lists the proposals for project assistance/technical assistance that 'have already met most of the readiness criteria and that have already obtained the indicated commitment from the prospective development partners'.

Here, proposals for project and technical assistance fulfilling either of the following criteria are counted as those related to climate issues: (1) those raising mitigation and/or adaptation as one of the objectives; or (2) those including activities listed in the 'Activities of the Long-Term Development Plan' in ICCSR.

2007

Project Assistance

Executing Agencies	Projects	Remarks	Foreign Fund (1000 USD)	Indonesian Fund (1000 USD)
National Coordinating Board for Disaster Management	Disaster Relief and Mitigation Management Project	JICA	8600	1290
Agency for the Assessment and Aapplication of Technology	Baron Renewable Energy Technopark	Norway	1000	150
DG Human Settlements, PU	Construction of Western Denpasar and Kuta Sewerage Development Project	JBIC	54066	13815
	Urban Water Supply and Sanitation Project	WB	24852	8031
DG Water Resources, PU	Decentralized Irrigation System Improvement Management Project (Phase 2)	JBIC	50000	38490
	Integrated Citarum Water Resources Management Project (Tranche 1)	ADB & GEF	48480	25510
	Participatory Irrigation Rehabilitation Improvement Management Project	JBIC	60000	86870
Riau province	Southern Pekanbaru Water Supply Development Project	Denmark	27500	4600
PT. PLN	Improvement of energy efficiency on electricity distribution and uses in Java-Bali	ADB	100000	20000
			374498	198756

Priority Technical Assistance

Executing Agencies	Projects	Remarks	Foreign Fund (1000 USD)	Indonesian Fund (1000 USD)
ESDM	Electricity Power and Energy Policy Project	JICA	12040	600
MOFR	Forest Resources Management using Satellite Image	JICA	5500	1000
Ministry of Health	Preparedness and Disaster Response Management	JICA	1000	
Ministry of Communication and Information Technology	Early Warning Systems	KOICA	2000	

Agency for Research and Development, PU	Capacity Development for River Basin Organizations in Practical Water Resources Management and Technology	JICA	8641	1296
DG Water Resources, PU	Integrated Water Resources Management in Jabodetabek and Its Surrounding Area	-	3000	500
DG Railways, Ministry of Transportation	Bandung Urban Railway Transport Development, Electrification Padalarang-Cicalengka Line	France	10000	1500
	Improvement of Railway System in the East Jakarta Industrial Region	JICA	2500	
Indonesian Institute of Science	Project for determine Sustainable Energy Research Priority in Indonesia	KOICA	300	60
			44981	4956

2008

Project Assistance

Executing Agencies	Projects	Remarks	Foreign Fund (1000 USD)	Indonesian Fund (1000 USD)
DG Human Settlements, PU	Regional Solid Waste Development for Maminasata, South Sulawesi	JBIC	27800	
	Urban Water Supply and Sanitation Project	WB	26219	6707
DG Water Resources, PU	Integrated Citarum Water Resources Management Project (Tranche 1)	WB	50000	40000
	Non Structural measures and Urgent Mitigation for Jakarta Flood Control	WB	156500	12600
	Urban Flood Control System Improvement in Selected Cities	JBIC	70000	7000
Local Government of DKI Jakarta province	Construction of Jakarta Mass Rapid Transit Project (Phase 1)	JBIC	450000	45000
Local Government of Riau province	Southern Pekanbaru Water Supply Development Project	Denmark	27500	4600
PT. PLN	Kusan Hydro Electric power Plant 63MW	JBIC	95500	
	Upper Cisokan Pumped Storage HEPP (1000MW)	WB	469473	82848
			1372992	198755

Priority Technical Assistance

Executing Agencies	Projects	Remarks	Foreign Fund (1000 USD)	Indonesian Fund (1000 USD)
National Disaster Management Agency	Disaster Information Sharing System for Emergency Response	JICA	450	
ESDM	Barrier Removal to the Cost Effective Development and Implementation of Energy Efficiency Standards and Labeling Project	UNDP	1800	
	Energy Conservation and Efficiency Improvement	JICA	60	
	The System Design and Establishment of Distribution Control System for Optimizing Management in Semarang and Bekasi (Phase 2)	KOICA	2122	500

MOFR	Comprehensive Approach for Conservation and Restoration of Ecosystems in Protected Areas	JICA		
Agency for Research and Development, PU	Capacity Development for River Basin Organizations in Practical Water Resources Management and Technology	JICA	8641	1296
DG Water Resources, PU	Integrated Water Resources Management in Jabodetabek and Its Surrounding Area	JICA	2000	750
	Integrated Disaster Mitigation Management for Banjir Bandang	JICA	1231	
DG Human Settlements, PU	Indonesia Water and Sanitation Policy and Action planning Facility (Phase 3)	WB	8800	250
Ministry of National Education	Enhancement of Global Carbon Sequestration Potential from Indonesian Tropical Forest (Phase 2)	IDB, EU	200	
DG Land Transportation, Ministry of Transportation	Integrated Public Transportation Master Plan for the Bandung Metropolitan Area	France	1000	
	Program for Improvement of Transport System in Medium-Sized Cities	GTZ	5000	
DG Railways, Ministry of Transportation	Bandung Urban Railway Transport Development, Electrification of Padalarang-Cicalengka Line	France	10000	1500
	Improvement of Railway System in the East Jakarta Industrial Region	JICA	1502	
Indonesian Institute of Science	Assistance in Establishing Research Laboratory for Energy, Environment, and Natural Substances	KOICA	3000	14
Bappenas	Support to Bappenas in Mainstreaming Climate Change Issue into Development Plan	GTZ, UNDP	300	
KLH	Waste Management and Recycling for Building a Resources-Circulating Society	JICA	120	
			46226	4310

2009				
Project Assistance				
Executing Agencies	Projects	Remarks	Foreign Fund (1000 USD)	Indonesian Fund (1000 USD)
DG Human Settlement, PU	Climate Friendly and Sustainable City Development (Eco City) Phase: Solid Waste Improvement Management	Germany	68500	7000
	Metropolitan Sanitation Management and Health Project	ADB	35000	20000
	Regional Solid Waste Development for Maminasata, South Sulawesi	JICA	40470	4047
DG Water Resources, PU	The Construction of Transfer Water Inter Basin of Cibutarua Cilaki Cisangkuy	IDB	63750	20250
DG Railways, Ministry of Transportation	Procurement of Railway Track Construction and Maintenance Machinery	KfW	51200	6080
	Procurement of 1000km Track Material and 200 Units Turn Out	China	102000	19500

	Procurement of Locomotives Diesel Electric	China	51000	
Local Government of Nanggroe Aceh Darussalam Province	Seulawah Geothermal Working Area Infrastructure	Germany	81900	76500
Local Government of Riau province	Southern Pekanbaru Water Supply Development Project	Denmark	27143	4475
PT. PERTAMINA	Ulubelu Unit 3 & 4 2*55MW	JICA	295400	
PT. PLN	Bakaru II Hydro Electric Power Plant (HEPP) 2*63MW	JICA	133232	36738
	Engineering Services and Construction of the Kamojang 6 Geothermal plant (60MW)	JICA, ADB, WB	51000	9600
	Engineering Services and Construction of the Lumut Balai Geothermal plant (2*55MW)	JICA, ADB, WB	120700	21300
	Java Bali Electricity Distribution Performance Improvement	ADB	100000	15000
	Kusan Hydro Electric Power Plant 63MW	JICA	95500	16860
	Lahendong 1V GEOPP (1*20MW)	ADB	32370	5780
	Rehabilitation and Modernization of Paiton Small Power Producer (SPP) 1 & 2 (2*400MW)	Export Credit	41100	7250
	Rehabilitation and Modernization of Saguling Hydro Electric Power Plant (HEPP 4*178MW)	Export Credit	13380	2360
	Scattered Transmission and Sub-Station in Indonesia	Export Credit & WB	500000	
	Sembalun GEOPP, Lombok (2*10MW)	JICA, ADB, WB	40460	7140
	Upper Cisokan Pumped Storage HEPP (1000MW)	WB	774000	73000
			2718105	352880

Priority Technical Assistance

Executing Agencies	Projects	Remarks	Foreign Fund (1000 USD)	Indonesian Fund (1000 USD)
BNPB	Disaster Information Sharing System for Emergency Response	JICA	450	
	Disaster Risk Reduction-Based Rehabilitation Reconstruction	UNDP	1500	
Ministry of Home Affair	Disaster Risk Reduction in Development (DRR-A)	UNDP	10000	
MOFR	Forestry Sector Climate Change-Related Program (REDD)	Germany	30000	3000
Agency for Research and Development, PU	Development of Green housing model with Minimizing CO_2 Emission as a Control Micro Climate Change	Germany (KfW)	500	
DG Human Settlement, PU	Capacity Development of 3R and Domestic Solid Waste Management System	JICA	8520	
	Flood Management in Selected River Basins, PFR1	ADB	1000	200
DG Water Resources, PU	Technical Assistance for Capacity Building in Water Sector	ADB	850	75

Ministry of National Education	Enhancement of Global Carbon Sequestration Potential from Indonesian Tropical Forest (Phase 2)	IDB, EU	200	
DG Land Transportation, Ministry of Transportation	Integrated Public Transportation Master Plan for the Bandung Metropolitan Area	France	1000	
	Programme for Improvement of Transport System in Medium-Sized Cities	Germany (GTZ)	5000	
DG Railways, Ministry of Transportation	Bandung Urban Railway Transport Development, Electrification of Padalarang-Cicalengka Line	France	10000	1500
Ministry of Agriculture	Immediate Support for Improving Resilience of Agriculture-Based Livelihood and Enhanced Food Security Response in East Nusa Tenggara (NTT) province	FAO	785	
Indonesian Institute of Science	Establishing Research Laboratory for Energy, Environment, and Natural Substances	KOICA	3000	14
KLH	Indonesian Training Course for Co-Benefits Approach	JICA	359	
Bappenas	Support to Bappenas in Mainstreaming Climate Change Issue into Development Plan	GTZ	300	
	Supporting Medium-Term Geothermal Development Plan and Accelerated Investment in Geothermal Sector	Netherland, AusAID, EU, DFID (Trust Fund)	1035	
			74499	4789

Annex IV: List of the informants

The following table shows the informants who were interviewed by the A&M team during the programme evaluation study. The informants include government officials, experts of the development partners, scholars, NGO officers, and other stakeholders.

Note: Informants who provided information related to more than two sectors are listed only once..

LULUCF sector			
Sector	**NAME**	**TITLE**	**Affiliation**
LULUCF	Dr. Agus Setyarso	Executive Chairman	National Forestry Council of Indonesia
LULUCF	Dr. Rizaldi Boer	Professor	Bogor Agriculture University
LULUCF	Mr. Yuyu Rahayu	Director of Inventory and Monitoring of Forest Resources	MOFR
LULUCF	Mr. Agus Sarsito	Director for International Cooperation	MOFR
LULUCF	Mr. Tanaka Yasuhisa	JICA Expert	MOFR/JICA
LULUCF/ Cross sectoral	Mr. Agus Widiyarto	Head of Data & Information Div.	MOFR

Energy sector			
Sector	**NAME**	**TITLE**	**Affiliation**
Energy	Mr. Sugiharto Harsoprayitno	Director of Geothermal Enterprise Supervision and Groundwater Management	ESDM
Energy	Dr. Hasrul Azhari L.A	Sub-Directorate of Geothermal Enterprise Guidance and Management of Groundwater	ESDM
Energy	Ms. Maryam Ayumi	Director of Renewable Energy and Energy Conservation, DEGGU	ESDM
Energy	Ms.Indarti	Head of Energy Conservation Division, Renewable Energy and Energy Conservation, DEGGU	ESDM
Energy	Mr.Saleh Abdurahman	Head of Data & Information Management Division, Centre for Energy & Mineral Data and Information	ESDM
Energy	Ms. Farida Zed	Head of Centre for Energy & Mineral Data and Information	ESDM
Energy	Ms. Musdhalifah Machmud	Assistant to Deputy Minister for Estate Corps and Horiculture	EKUIN
Energy	Ms. Endang Supartini	Director for R & D Center for Energy Resource, Regional development, and Environment	MOI
Energy	Ms. Shinta	Head of Energy Division, Center for Resource, Environment and Energy R&D	MOI
Energy	Ms. Emi Suryandari	Head of Sub Divison, Global Environment, Center for Resource, Environment and Energy R&D	MOI
Energy	Ms. Yuni	R & D Center for Energy Resource, Regional development, and Environment	MOI
Energy	Ms. Maritje Hutapea	Head of Bureu Study and Research Ministry Mines, Energy and Resources, General Secretariat	DEN
Energy	Mr. Montty Girianna	Director of Energy Resources, Mineral and Mining	Bappenas

Energy	Mr. Rizal Primana	Head of Sub Dir Geology & Mining	Bappenas
Energy	Dr. Yahya Rachmana Hidayat	Director, Directorate of Energy, Telecommunications and Informatics	Bappenas
Energy	Mr. Syaiful B. Ibrahim	Power Economist	PT PLN
Energy	Mr. Marnix J Segers	Second Secretary, Economic Department	Embassy of the Kingdom of the Netherlands
Energy	Mr. Edi Setianto	Program specialist	USAID
Energy	Mr. Rehan Kausar	Infrastructure Specialist	ADB
Energy/ Cross sectoral	Prof. Singgih Riphat	Head of Working Group on Climate Change, Fiscal Policy Office	MOF
Energy/ Cross sectoral	Mr. Bambang Utoro	Head of Cooperation Division	ESDM

Water resource management sector

Sector	NAME	TITLE	Affiliation
Water resource management	Mr. Imam Santoso	Head of Subdit River Basin Planning, Directorate General of Water Resources	PU
Water resource management	Mr. Imam Anshori	Head, Secretariat of National Water Resources Management Council	NWRC
Water resource management	Mr Tomy M. Sitompul	Head of information service, National Water Resource	NWRC
Water resource/ Water supply & sanitation	Mr. Sugiyanto	Director of Water Resources Management, Directorate General of Water Resources	PU

Water supply and sanitation sector

Sector	NAME	TITLE	Affiliation
Water supply & sanitation	Mr. Widagdo	Director of River, Lake and Reservoir, Directorate General of Water Resources	PU
Water supply & sanitation	Mr. H. A. Malik	Director, Cleansing Department	Central Jakarta
Water supply & sanitation	Ms. Sri Bebassari	Executive Director	Perisai Foundation (NGO)
Water supply & sanitation	Mr. Firdaus	Head of Project Management Unit (PMU)-Water Sanitation Sector (IKK), Directorate of Water Supply Development	PU
Water supply & sanitation	Ms. Anggi, Mr. Budi	Technical persons, Directorate of River, Lake and Reservoir, Directorate General of Water Resources	PU
Water supply & sanitation	Mr. Apriadi Busri	Director, Park and Cleansing Department	Palembang City Government
Water supply & sanitation	Ms. S. Bellafolijani A.	Sub Director of Water Supply, Directorate of Water Supply Development, Directorate General of Human Settlements	PU
Water supply & sanitation	Mr. Handy B. Legowo	Head of Sub-Directorate of Sanitation, Directorate General of Human Settlements, Directorate of Environmental Sanitation	PU

Water supply & sanitation/ Agriculture/ Cross sectoral	Ms. Masako Ogawa	JICA Expert	KLH

Agriculture sector

Sector	NAME	TITLE	Affiliation
Agriculture	Ms. Etty Savatri	Deputy Director, International Cooperation Bureau, UN-Agencies for Food and Agriculture	MOA
Agriculture	Ms. Ade Candradijaya	Head of Sub Division, Program for International Cooperation, International Cooperation Bureau	MOA
Agriculture	Ms. Yulistiana Endah Utami	Head, Sub-Division of Policy Planning Bureau of Planning	MOA
Agriculture	Ms. Wahyuningsih Darajati M.	Director of Food and Agriculture	Bappenas
Agriculture/ Cross sectoral	Dr. Mappaona	Head of Bureau of Planning	MOA

Disaster management sector

Sector	NAME	TITLE	Affiliation
Disaster management	Mr. Sugeng Triutomo	Deputy for Prevention and Preparedness	BNPB
Disaster management	Dr. Suprayoga Hadi	Director for Special Area and Disadvantaged Region, Deputy for Regional Development and Local Autonomy	Bappenas

Marine, coral, and fisheries sector

Sector	NAME	TITLE	Affiliation
Marine, coral & fisheries	Dr. Ketut Sugama	Director of Seed Development	MMAF
Marine, coral & fisheries	Dr. Jamaluddin Jompa	Executive Secretary, Directorate General of Marine Coastal and Small Islands, COREMAP II	MMAF
Marine, coral & fisheries	Ms. Umi Windriani	Head of disaster mitigation and environmental pollution, Directorate General of Marine Coastal and Small Islands	MMAF
Marine, coral & fisheries	Dr. Adiasmara Gri	Director of Gondol Research Institute for Mariculture, Agency for Marine and Fisheries Research	MMAF
Marine, coral & fisheries	Dr. Adi	Researcher of Marin Gondol Research Institute for Mariculture, Agency for Marine and Fisheries Research	MMAF
Marine, coral & fisheries	Ms. Budi Sugianti	Head of Budget Planning Division, Planning Division, Secretariat General	MMAF
Marine, coral & fisheries	Mr. Tukul Rameo	Head of Research Resources Division, Board of Marine and Fisheries Research (BRKP), Agency for Marine and Fisheries Research	MMAF
Marine, coral & fisheries	Mr. Agus Dermawan	Director of Conservation and Marine park, Directorate General of Marine Coastal and Small Islands (KP3K DG)	MMAF

Cross sectoral issues

Sector	NAME	TITLE	Affiliation
Cross sectoral	Dr.Edi Effendi Tedjakusuma	Director of Environment	Bappenas
Cross sectoral	Ms. Tri Dewi Virgiyanti	Head of Environmental Pollution and Degradation Control Division, Directorate of Environment	Bappenas
Cross sectoral	Dr. Andi Eka Sakya	Executive Secretary	BMKG
Cross sectoral	Dr. Untung Merdijanto	Head of Bureau of Planning	BMKG
Cross sectoral	Mr. Soeroso Hadiyanto	Deputy of Climatology Department	BMKG
Cross sectoral	Mr. Widodo	Working Group on Climate Change, Fiscal Policy Office	MOF
Cross sectoral	Mr. Purwoko	Working Group on Climate Change, Fiscal Policy Office	MOF
Cross sectoral	Dr. Maurin Sitorus	Director of Funds	MOF
Cross sectoral	Ms. Daisy Joyce	Head of Bilateral Cooperation Division	KLH
Cross sectoral	Mr. Haneda Sri Mulyanto	Head of Mitigation, Assistant Deputy for Climate Change Impact Control	KLH
Cross sectoral	Mr. Dadang Hilman	Head of Adaptation, Assistant Deputy for Climate Change Impact Control	KLH
Cross sectoral	Mr. Agus Purnomo	Head of Secretariat	NCCC
Cross sectoral	Dr. A. Hasanudin	Head of International Cooperation Division	PU
Cross sectoral	Ms. Devina Suzan	International Cooperation Division	PU
Cross sectoral	Mr. Kiichi Tomiya	Senior Representative	JICA
Cross sectoral	Ms. Yuka Murakami	Project Formulation Advisor	JICA
Cross sectoral	Mr. Patrick Abbes	Deputy Country Director	AFD
Cross sectoral	Mr. Dimitri Kanounnikoff	Project Manager, Environment & Climate Change	AFD

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