



**STATE MINISTRY OF ENVIRONMENT
UNITED NATIONS DEVELOPMENT PROGRAMME**



**NATIONAL CAPACITY SELF-ASSESSMENT
PROJECT 00033093**



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PREFACE

The National Capacity Self-Assessment (NCSA) project is an activity addressed by Ministry of Environment (MoE) in coordination with the United Nations Development Programme (UNDP).

The primary objective of the NCSA is to identify priorities and needs for capacity development to address global environmental management requirements, in a country-driven manner. This assessment will concentrate on the three thematic areas of biodiversity, climate change and desertification/land degradation, and will place particular emphasis on identifying crosscutting issues and synergies.

While, the secondary objectives of NCSA project are:

- To assess the impact of the decentralization of power and regional autonomy (OTODA) and the capacity challenges they will engender in relation to global environmental management.
- To strengthening capacities to understand and manage the impact of trade on environmental management.
- To assess required capacities for awareness-raising and public education and mobilization in environmental management.

This report will present Cross Cutting Assessment which consists of several topics such as: 1) Cross Cutting Assessment Under the Conventions; 2) Assessment of Cross Cutting Capacity Constraints and weakness, Capacity Needs and Opportunities; 3) Cross Cutting Natural Resources Management; and 4) Procedure on Cross Cutting Assessment.

In this regard, we would also like to thank the members of the Working Groups for their continued support and advice. Critics and suggestions are welcome to improve the finishing of this Cross Cutting Assessment Report.

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NCSA_Projects Team

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ABBREVIATIONS

APBN	: Anggaran Pendapatan dan Belanja Negara
Bappenas	: Badan Perencanaan Pembangunan Nasional
BBM	: Bahan Bakar Minyak
BKBN	: Badan Koordinasi Bencana Nasional
BKSDA	: Balai Konservasi Sumber Daya Alam
BMG	: Badan Meteorologi dan Geofisika
CBD	: Convention on Biodiversity
CCD	: Convention to Combat Desertification
CDM	: Clean Development Mechanism
CDI	: Capacity Development Initiative
CEMP	: Coastal Environment Management Planning
CHM	: Clearing House Mechanism
CITES	: Convention on International Trade in Endangered Species
CO ₂	: Karbondioksida
COREMAP	: Coral Reef Rehabilitation and Management Project
CTE	: Center for Transportation and the Environment
FCCC	: Framework Convention on Climate Change
DAS	: Daerah Aliran Sungai
DAU	: Dana Alokasi Umum
DAK	: Dana Alokasi Khusus
Deperdag	: Departemen Perdagangan
Deperind	: Departemen Perindustrian
Dephut	: Departemen Kehutanan
Dephub	: Departemen Perhubungan
Deptan	: Departemen Pertanian
Depkimpraswil	: Departemen Pemukiman dan Prasarana Wilayah
DKP	: Departemen Kelautan dan Perikanan
DESDM	: Departemen Energi Sumber Daya Mineral
DIP	: Daftar Isian Proyek
DPR	: Dewan Perwakilan Rakyat
DP3	: Daftar Penilaian Pegawai Pemerintah
EC	: European Countries
FA	: Foreign Affairs
FAO	: Food and Agriculture Organization
FWI	: Forest Watch Indonesia
GDP	: Growth Domestic Product
GEF	: Global Environment Facility
GERHAN	: Gerakan Rehabilitasi Lahan Nasional
GIS	: Geography Information System
GoI	: Government of Indonesia

GRK	: Gas Rumah Kaca
HA	Home Affairs
Ha	: Hektar
HKI	: Hak Kekayaan Intelektual
HPH	: Hak Pengusahaan Hutan
IT	: Informasi Teknologi
IBSAP	: Indonesian Biodiversity Strategy and Action Plan
IPB	: Institut Pertanian Bogor
IPCC	: Intergovernmental Panel on Climate Change
ITB	: Institut Teknologi Bandung
IPTEK	: Ilmu Pengetahuan dan Teknologi
IPKH	: Industri Pengolah Kayu Hulu
KK	: Kepala Keluarga
KKH	: Konvensi Keanekaragaman Hayati
KKN	: Korupsi, Kolusi dan Nepotisme
KLH	: Kementerian Lingkungan Hidup
KMNRT	: Kementerian Negara Riset dan Teknologi
KOMNAS	: Komisi Nasional
KPDL	: Konvensi Penanggulangan Degradasi Lahan
KPI	: Konvensi Perubahan Iklim
KPK	: Komisi Pemberantasan Korupsi
KPP	: Konverensi Para Pihak
KSDA	: Konservasi Sumber Daya Alam
KUN	: Kontak Utama Nasional
LAKIP	: Laporan Akuntabilitas Kinerja Instansi Pemerintahan
LAPAN	: Lembaga Penerbangan dan Antariksa Nasional
LIPI	: Lembaga Ilmu Pengetahuan Indonesia
LITBANG	: Penelitian dan Pengembangan
Lintrad	: Perlindungan Pengetahuan Tradisional
LPND	: Lembaga Pemerintahan Non Departemen
LREPP	: Land Resources Evaluation and Planning Project
LSM	: Lembaga Swadaya Masyarakat
MGA	: Meteorology and Geophysics Agency
MoA	: Ministry of Agriculture
MoE	: Ministry of Environmental
MoF	: Ministry of Forestry
MoTI	: Ministry of Trade and Industry
MoEMR	: Ministry of Energy and Mineral Resources
MBK	: Mekanisme Balai Kliring
MEAs	: Multilateral Environmental Agreements
MP-RHL	: Master Plan Rehabilitasi Hutan dan Lahan
MPB	: Mekanisme Pembangunan Bersih
MREP	: Marine Resources Evaluation Project
MtCO ₂	: Metric ton CO ₂

NAAA	: National Aeronautic and Aviation Agency
NCSA	: National Capacity Self Assessment
NDPA	: National Development Planning Agency
NAP-CCD	: National Action Programme
NAP-FCCC	: National Action Plan
NBIN	: National Biodiversity Information Network
NCIC	: Nature Conservation Information Centre
NET	: National Environmental Trust
NFP	: National Focal Points
NGO	: Non Government Organization
ORSA	: Operation Research System Analysis
O ₂	: Oksigen
OTODA	: Otonomi Daerah (Regional Autonomy)
PAD	: Pendapatan Asli Daerah
Perda	: Peraturan Daerah
PIKA	: Pusat Informasi Konservasi Alam
PLT	: Program Lintas Tematik
PLTA	: Pembangkit Listrik Tenaga Air
PP	: Peraturan Pemerintah
PPLH	: Penyidik Pegawai Lingkungan Hidup
Ppm	: Part per million
PPNS	: Penyidik Pegawai Negeri Sipil
PRA	: Participatory Rural Appraisal
Puslitbang	: Pusat Penelitian dan Pengembangan
PUSFATSATKLIM	: Pusat Pemanfaatan Sains, Atmosfer dan Iklim
P2LHP	: Pejabat Pengesah Laporan Hasil Produksi
P3KB	: Petugas Pemeriksa Penerimaan Kayu Bulat
R&D	: Research and Development
Renstra	: Rencana Strategis
RLKT	: Rehabilitasi Lahan dan Konservasi Tanah
RUTRW	: Rencana Umum Tata Ruang Wilayah
SDA	: Sumberdaya Alam
SDH	: Sumberdaya Hutan
SDM	: Sumberdaya Manusia
SDG	: Sumberdaya Geneti
Setneg	: Sekretariat Negara
Sipteknas	: Sistem Ilmu Pengetahuan dan Teknologi Nasional
SK-Men	: Surat Keputusan Menteri
SKB	: Surat Keputusan Bersama
Stanling	: Insentif Standarisasi Lingkungan
TGHK	: Tata Guna Hutan Kesepakatan
TOR	: Term of Reference
UN	: United Nations
UNDP	: United Nations Development Programme

UNCBD	: United Nation Convention of Biological Diversity
UNCCD	: United Nation Convention of Combating Desertification
UNFCCC	: United Nation Framework Convention on Climate Change
UNESCO	: United Nations Educational, Scientific and Cultural Organization
UNITAR	: United Nations Institute for Training and Research
UU	: Undang-undang
WI-IP	: Wetland International-Indonesia Programme
WSSD	: World Summit for Sustainable Development
WTO	: World Trade Organization
YBUL	: Yayasan Bina Usaha Lingkungan

CHAPTER I

PREFACE

Cross cutting is one phase of the need assessment for capacity building of three conventions, such as CBD, FCCC and CCD. There are eight Technical Departments, three Non-Technical Departments or Non Departmental Agencies, and Non Governmental Organizations (NGOs) (Table 1) who will implement the cross cutting issues of these three conventions. As a means to implement them, a thematic program is developed. The cross-thematic program coordination shall be implemented in a normative, tour of duty, internship and voluntary manner¹.

The first nature or normative is a type of government based coordination through a team set up by the respective Ministerial Decree or Joint Decree. The two decrees also served as a base for the team to meet routinely. The coordination in this level consisted of concept development, setting up system or procedure, determining the framework of the proposed working plan or program. Besides, the forum also served as a disseminating tool for information and other things related to these cross thematic programs or activities.

The effectiveness of that system relies on the team's initiator or we can say the team manager. If the team manager has a dynamic scenario, then it will be plausible for the team to have sufficient supports to run the program effectively. Consequently, the team can carry out the agreed concept or scenario, both in terms of software, such as law assurance and hardware, such as facility and funding.

The second pattern of coordination happened when an institution delegated someone to another institution but not of his or her origin, to join a certain program of activity (tour of duty). The nature of this delegation was to provide assistance or job transfer. In this pattern, a person was deliberately chosen from another unit or institution to lead or to hold a position in a certain organization of an institution. By doing this, it was expected that a coordination between the donor and the recipient agencies could be established. However, it was possible

¹ Based on NCSA observation, 2005

that coordination was not in place, especially when the recipient agency already possessed a specific working system contrary to that of the donor.

Internship is another type of an effective coordination. In this regard, a person is delegated to work in another institution to learn all things related to cross thematic, so that he or she is able to master the software and hardware of the cross thematic program in a short period. However, the internship pattern has not yet been implemented or recognized in this moment, especially in the governmental institution.

Table 1.1: Cross Thematic Programs, 2001 – 2004

No.	Program	Organization
1	Development and Improvement of Access to Information of Natural Resources and Environment ¹⁾	LIPI
2	Prevention of Environmental Damage and Pollution ²⁾	LIPI
3	National Program on Biodiversity Network ³⁾	LIPI
4	The Use of HKI and Standardization ⁴⁾	KMNRT
5	Forest Conservation and Safety ⁵⁾	Ministry of Forestry
6	Forest and Land Rehabilitation ⁶⁾	Ministry of Forestry
7	Capacity Building Improvement for Regions in Implementing Environmental Governance ⁷⁾	Ministry of Environment
8	Society (Warga Madani) ⁸⁾	Ministry of Environment
9	Environmental Conservation ⁹⁾	Ministry of Environment

Source: Several LAKIP of the Related Institution, 2004.

The other pattern of this cross thematic coordination is called volunteer. In regards to cross thematic coordination, several NGOs have implemented this volunteer pattern through report submission on their programs or activities to the government. Based on this inputs, the government sets up a follow up program or activity even though most of the time the response was considerably slow. As an illustration, Table 1.1 provides those believed as cross thematic programs and activities (Cross Thematic Program – CTP).

Table 1.2: Organizations Carries Out Cross Thematic Program or Activity

No.	Organization	Cross Thematic Activity
1.	Ministry of Environment (MoE)	UNCBD, UNFCCC, UNCCD
2.	Ministry of Forestry (MoF)	UNCBD, UNFCCC, UNCCD
3.	BAPPENAS	UNCBD, UNFCCC, UNCCD
4.	Ministry of Agriculture (MoA)	UNCBD, UNFCCC, UNCCD
5.	Ministry of Industry (MoI)	UNFCCC, UNCCD
6.	Ministry of Trade (MoT)	UNCBD, UNCCD
7.	Ministry of Energy and Mining (MoEM)	UNCBD, UNFCCC, UNCCD
8.	Ministry of Research and Technology (MoRT)	UNCBD, UNFCCC, UNCCD
9.	Ministry of Transportation (MoT)	
10.	Ministry of Sea and Fishery (MoS&F)	UNCBD, UNFCCC, UNCCD
11.	Wetland International – Indonesia Programme (WI-IP)	UNCBD, UNCCD
13.	Pelangi	UNFCCC, UNCCD

Source: Several Reports of the Related Institution, 2004.

Notes:

- 1) This CTP receives its funding from list of project which is used to fund several activities, such as conservation of flora and fauna in low land wet climate, high land wet climate, low land dry climate, low land dry climate in Indonesia, disbursed through four national parks belonged to LIPI, such as Bogor National Park, Cibodas National Park, Purwadadi National Park in East Java, Eka Karya National Park in Bedugul, Bali. Besides, the funding is also dedicated for the development of Wamena Biology Park in Papua, Baturaden National Park in Central Java, and Jambi National Park. Several endeavors are executed to rescue the heritage of Muller mountains area in North Barito through an exploration of primary forest that will be proposed as a Natural World Heritage after complying all criteria required by UNESCO.
- 2) The CTP program covers the prevention and rehabilitation of coral reefs in Indonesia.
- 3) This program is part of the Information Dissemination Program under Science and Technology.

- 4) The program covers following activities, such as: a. Incentive for protection of traditional knowledge; and b. Incentive for environmental standardization.
- 5) The program is aimed at preserving forest function with the objective of upholding the law enforcement in any illegal logging practices. To support this program, a policy on eradicating illegal logging is set up. Besides, the program is steered to hit the objective of the establishment of a comprehensive forest fire management.
- 6) The general goal of this program is to rehabilitate forest and land with several objectives such as followings: the availability of a Forest and Land Rehabilitation in national and regional levels, the set up river basin management and land rehabilitation systems; the availability of research and development that focuses on improving the effectiveness of forest resource rehabilitation and the prevention of forest degradation; the implementation of an afforestation in a 200,000 ha area and the implementation of planning, surveillance and securing the 9 million ha of area after the Right of Forest Use expires.
- 7) This program covers following activities: to carry out a baseline study on the level of environmental governance in every respective region; to disseminate the vision to the regional government and staff to provide an assistance in the area of institutional capacity building in the respective region, to support the human resource capacity building in the area, to develop technical and procedural regional planning; to develop the capacity of regional government on communication.
- 8) The program has several activities including as follows: awareness building on environment, awareness building on the dependence of human's welfare on the quality of the environment, awareness building on the needs to get involve in any decision making process where the decision is for the sake of the society in general to achieve their welfare, especially in the sustainable development; dissemination of information regarding the procedure and method to get involve in any decision making process when the decision is benefiting the society in general; to motivate the society to participate in any decision making process that benefits the society and to initiate it locally.
- 9) There are several activities in this program, as follows: forest fire management, pond's preservation and tropical forest rehabilitation, including the reserved park; coastal area and marine management, of

which coral reef is included, anticipation on the impact of climate and atmospheric change, biodiversity management to protect its degradation, the increase on the understanding and compliance towards the International Environmental Treaty.

To add the above mentioned explanations, we can briefly say that there are several institutions in Indonesia who have undergone the cross thematic program or activity. In general, Table 1.2 provides the respective institutions with its respective cross thematic program or activity.

CHAPTER II

Cross-Cutting Requirements under the Conventions

2.1 Cross-Cutting Requirements

Based on the thematic assessment for the three conventions, there are eight cross-cutting requirements among these conventions (table 2.1).

Table 2.1: Cross-Cutting Requirements

No.		Biodiversity	Climate Change	Land Degradation
1.	National & regional action plans	Article 6(a); (b)	Article 4.1(b)	Article 9,10
2.	Legislation	Article 8(k)	Preamble	Article 16
3.	Research	Article 12(b)	Article 5	Article 17, 19(b)
4.	Public education	Article 13	Article 6.a(i)	Article 5(d),6,19
5.	Public participation	Article 9	Article 6.1(ii)	Article 19(4)
6.	Information Exchange	Article 17	Article 7.2(b)	Article 16
7.	Training	Article 12(a)	Article 6	Article 19
8.	Report steps to COP	Article 26	Article 12	Article 26

Source: UNITAR guidelines

2.2 Cross-Cutting Requirements Priority

The stakeholders have reached a consent in defining the top five priorities in cross cutting requirements which will be thoroughly discussed based on the three key function; namely, system, institution and individual (Table 2.2).

Table 2.2: Cross Cutting Requirements Priority

	Biodiversity	Climate Change	Land Degradation
(1) Legislation	Article 8(k)	Preamble	Article 16(g)
(2) National & regional action plans	Article 6(a); (b)	Article 4.1(b)	Article 9,10
(3) Public education & training	Article 13, 12(a)	Article 6.a(i)	Article 5(d),6,19
(4) Public participation	Article 9	Article 6.1(ii)	Article 19(4)
(5) Information Exchange	Article 17	Article 7	Article 16

Source: Stakeholders' consent

2.2.1. Legislation

- CBD, article 8(k) regarding in-situ conservation: every contracting party shall develop or maintain necessary legislation and/or other regulatory provisions for the protection of threatened species or populations.
- FCCC, preamble: Recognizing that States should enact effective environmental legislation, that environmental standards, management objectives and priorities should reflect the environmental and developmental context to which they apply, and that standards applied by some countries may be inappropriate and of unwarranted economic and social cost to other countries, in particular developing countries,
- CBD, article 16(g): subject to their respective national legislation and/or policies. exchange information on local and traditional knowledge, ensuring adequate protection for it and providing appropriate return from the benefits derived from it, on an equitable basis and on mutually agreed terms, to the local populations concerned.

There is a need to develop a national legislation supporting the implementation of the convention, not only for the articles required for their execution, but also for the entire convention, to guarantee the implementation in the national level effectively. The contents of the above mentioned articles are the articles themselves as written in the three

conventions explicitly who require the development of the national legislation.

The capacity assessment as a means to develop the policies, regulations, strategies and programs related to legislation is carried out at three levels: system, institution and individual.

2.2.1.1. Capacity in System Level

The discussion on capacity as a tool to develop policies, regulations, strategies and programs at the system level is directed with regards to contextual framework, institutions and laws, participation, accountability and transparency, authority level, property rights and tenure, market and financial flows, as well as science and risk. The discussion is necessary to be carried out since in developing policies, regulations, strategies and programs at system level, every system variables is directly related to the characteristic requirements of the legislation.

2.1.1.1.a. Contextual framework

In the contextual framework, the cross-cutting requirement of the legislation defines the situational analysis of several environmental policies related to the three conventions and the correlation between the legislation and the national report. The policy in this regards includes also any formal political statement from high level institution, and formal document which is not legally binding, regulation related to implementation of the three conventions, starting from the constitutional level to the regional level. The national report in this term is defined as a national report for the three conventions and annual institutional report that provides every activity related to the three conventions.

The government has not executed its function effectively in developing the legislation related to these three conventions. The area of concerns remains on the development of appropriate policies, regulations, strategies and programs in the system level. For your information, there was no complete situational analysis as a back up when developing legislation related to the CBD, FCCC or CCD. When the government decided to ratify the respective convention, there had been only few discussions at the national level. Besides, the cross-cutting issues of the

three conventions were not on the agenda of the discussion. An unparallel ratification is the underlying reason of this failure.

In the contextual framework, the three conventions have not received an appropriate attention to become a priority since the current legislation gives no room for an effective implementation of the conventions. We can see it clearly from regulations which are put into effect after the ratification of the conventions. It is expected that these regulations define the requirement of the conventions, however, they only define the general aspects (such as only one article mentioned in a regulation) and covers only parts of the convention. This serves as a barrier in the development of the implementing regulation. For example: a Law that regulates traditional knowledge as mentioned in CBD is Law No. 23 of 1997. However, the issue is regulated in article 23 alone, and not entirely. This reflects the fact that the law was intentionally made not for the implementation of the Convention.

Another aspect which is closely related to the incomplete situational analysis happens at the land rehabilitation case, which is not backed up with a complete situational analysis. The activity failed to consider the biodiversity aspect, since its focuses were merely on the land and water aspects. As for FCCC related legislation, we can depict the incomplete situational analysis when the establishment of the national and technical committee was based on the Ministerial Decree with no sound basis. As a result, the national committee stumbles.

The existence of legislation as a means to implement the requirements of the respective convention is reported under *a national report* for CBD, *a national communication* for FCCC, and *a national action plan* for CCD. The national legislation to support the implementation of the convention is still superficial and is not soundly basis for effective implementation of the conventions, since it fails to include several issues as mandated or required by the conventions. Therefore, there is a need to restore the current legislation, so as to achieve an appropriate national legislation.

2.1.1.1.b. Institutions and Laws

In this cross-cutting requirement, it is essential to discuss the environmental legislation under institutions and laws. It elaborates the tools to implement the requirements as mandated in each convention. In this section, we will discuss whether or not the current environmental regulation supports the implementation of each convention, or the availability of law enforcement and dispute mechanism.

The current environmental regulations are not in contrary with the implementation of the three conventions, however they are not sufficient to regulate the implementation of the three conventions optimally. Followings are the environmental regulations related to the three conventions, among others:

1. Act no. 5 of 1990 regarding the Natural Biodiversity and Ecosystem Conservation.
2. Act no. 23 of 1997 regarding the environmental management
3. Act no. 41 of 1999 on forestry

There are several efforts to support the law enforcement on those laws, however they were not executed effectively. Low in sanctions, low in awareness of the material and the contents of the laws, and low political willingness to punish those went astray from the environmental compliance are the reasons of this ineffectiveness. Not only that, lack of a good governance, such as a high rate in corruption, collusion and nepotism in every governmental level has exacerbated the law enforcement measures.

In terms of legislation, CBD has produced so many laws and regulations to support the implementation of the convention, such as Act no. 5 of 1990, Act no. 23 of 1997, Act no. 41 of 1999 and Act no. 31 of 2004. However, several issues and important themes in CBD, such as access to genetic resources, traditional knowledge, fairness in profit sharing, and others still require additional laws to guarantee its effective implementation.

Currently, there is no available law and regulation regulating issues carried out by other convention in detailed; the FCCC, CCD and CBD. Therefore, there is a need to produce a new law as a basis for the implementation of

the three conventions. To this end, the current law only regulates the ratification of the convention, but not on the implementation process.

In regards to legislation, a problem of the implementation of the three conventions arises when several institutions (sectors) produced policies which were overlapping with each other; the laws were not in harmony and even generate conflict. Besides, different institutions endorsing similar programs proved a lack of coordination nor synergy.

The current laws related to environment, indirectly regulate climate and land since they are components of environment. However, Indonesia is still lacking of a regulation regarding climate change; to regulate impacts generated from the use of greenhouse gases in global level, as well as its impact inflicted to Indonesia and how Indonesia mitigates these problems. Indonesia should come across the desertification issue as a land degradation. There are several regulations on this issue, however there is a need for an integrated implementation.

2.1.1.1.c. Participation, accountability and transparency

In general it is wisely said that any policy should receive a wide public participation and there should be people's involvement in any decision making process. It is a general term for a law-making process. Public participation in the policy development and decision-making process should always get public involvement. Not only that, public can validate the legitimacy of a law, through a material testing against a law in the Constitutional Court, while a material testing against a regulation with level below a law is carried out in Supreme Court. Any activity in regards to the implementation of the convention at global level is under the supervision of the central government. To implement the convention, the central government (includes also those supervised by sectors) has a mandate to develop a national legislation and its guidelines as the basis for the regional government to follow up the implementation of the convention at the regional level.

The Law regarding regional autonomy serves as a profound basis for delegating the governing authorities (Act no. 22 of 1999 is perfected through Act no 32 of 2004). Issues covered in government regulation no.

25 of 2000 regarding authorities delegated to Provincial Government or District Government is now in the process of discussion at the national level. As an example, even though there are several regional government decrees related to the implementation of each convention, however the correlation between them takes place unintentionally.

2.1.1.1.e. Property rights and tenure

The implementation of the statute of several requirements of each convention is closely related to the variable of property rights and tenure. Currently there is no law that regulates patents and property rights of natural resources in Indonesia, they are limited to patents and copy rights for a song. Indonesia has not adopted regulation to protect patents and property rights on softwares since the dissemination of the patents procedure is still complicated. Government should pay attention to the property rights of genetic resources, technology and traditional or local knowledge, especially those related to the development of legislation under the requirements.

2.1.1.1.f. Market and financial flows

The implementation of the three conventions only runs effectively when market mechanism is in place normally; where scarcity has an inverse relationship with price. It means that the more scarcity is a resource, the more costly is the price. As an example, article 8 (k) of CBD: Indonesia has ratified the Convention on International Trade in Endangered Species (CITES) that regulates the protection and trade of endangered species. However, the implementation fails to accommodate all requirements related to the market and financial flows so that it could run as what market mechanism does. For example, in an endangered species trade, Indonesia is not allowed to sell the species according to market mechanism due to the low bargaining position in the international level. Another convention such as land degradation; the high land degradation rate on account of slash and burn activities when clearing plantation areas signify the low value of natural resources in several area in Indonesia. In spite, the ecological and economic values to restore the degraded land are extremely high, reflecting the high value of the natural resources. This example indicates several things like in forest area, economic principle

does not prevail. On account of it, a good assistance to restore the principle is crucially needed.

2.1.1.1.g. Science and risk

In regards to the implementation of the three conventions, several existing legislations were made based upon scientific judgment. For example, in determining the permanent quota for the tradable wild flora and fauna, the scientific background is based on several measures, such as survey on the potentiality, study and tacit knowledge gathering among the scientific society in the national level. Precautionary principle and non-detriment findings are the basis for the exploitation of the wild flora and fauna. However, it lacks of scientific judgment in several aspects, such as the regulations regarding the economic valuation is not optimal.

2.2.1.2. Capacity in institutional level

The discussion on capacity as a means to develop policies, regulations, strategies and programs at the institutional level focuses on corporate governance, corporate strategy, resource management, operational management, quality assurance and staff quality. The discussion is considerably crucial since in implementing the function to produce policies, regulations, strategies and programs at the institutional level, all institutional variables are directly related to the characteristic of the legislation requirements.

2.2.1.2.a Corporate governance

When developing legislation related to each convention at the institutional level, it is understood that governmental institutions have a strategy in place even though it has not been carried out consistently. Besides, even though public consultation was in place, but the development of legislation only took into consideration vested interests of a certain group or party, even the process often lacked of risk management. As an example, a new government regulation was revoked three days after it was put into effect since it received so many hurdles or was in contrary with the superior regulations or did not comply with the social fairness.

2.2.1.2.b. Corporate Strategy

It is perceived that in producing legislation related to each convention at the institutional level, most of the government strategy was not based upon authority. For an example, the authority of MoE as an NFP of the UNCBD was in questioned when developing legislation of the convention and its supporting infrastructure. Not only that, sectors that are formally or legally bound, seems to short of authority in following up the requirements of the convention. They have no specific strategy to develop policy and legislation to follow up the convention.

In general, the institutional planning is in parallel with the managerial planning. Governmental institution, according to Law no. 25 of 2004 regarding National Development Planning System, is required to produce a Long Term Plan (twenty five years) and a Short Term Plan (five years), which includes development planning of legislation. An institution with a responsibility to develop legislation, has a clear indicator for institutional goals and targets when producing legislation according to the proposed plan. Legislation will be dynamically developed in accordance with the current facts and needs. A law, which according to its philosophy, shall function as a long term plan, can be altered along with time and when the government feel necessary to change it .

Presidential Decree no. 7 of 1999 regarding LAKIP regulates the harmonization of the goals and targets of an institution, however it does not run optimally. As an example, vision and mission of an institution or an agency has not set up a clear timeframe for its achievement. This is elaborated in Short Term Plan (five years) which also should be clearly defined in terms of budgeting. The annual budgeting is often made without meeting the existing Short Term Plan, and is perceived as a temporal need at that time, thus impeding the development of LAKIP. We believe that a consistent planning, the inclusion of an organization's vision, including the implementation of the convention into a proper planning, are the solutions to the current problems.

2.2.1.2.c. Resource management

In regards to the development of legislation for the implementation of each convention, the government has allocated resources and management plan. Resource allocation which is appropriate with the management plan has not yet run smoothly, since the fiscal condition that the government has decided does not support the proposed plan. However, to overcome this financial limitation, the government has borrowed money from the national and international market through a proper financial management.

Human resource was not allocated according to its field and expertise when developing a policy. In the governmental institution, it is a common practice when a man power is not allocated according to the institutional needs or he or she is not designated according to his or her expertise. Rotation system in the Governmental institution not in accordance with an appropriate career path and believed to increase the bureaucracy system, is accused to be the fallacy of the system. In the governmental bureaucracy, the structural position still dominates and remuneration system is based on the structure. Unfortunately, the government has not developed a functional-based position.

Indonesia only adopts limited functional position, such as for medics, paramedics, researchers, trainers, lecturers, assistance, counselor, and special police. In comparison with its neighboring countries in Asia, Indonesia is a laggard in developing functional position, an example: The Philippines has adopted more than fifty functional positions in its bureaucracy system. When optimally developed, staffs of an institution will not chase after a limited structural position, so that staff delegation is in accordance with his or her expertise, given that structure is not the limitation anymore.

At present, there is a strict and appropriate financial control mechanism. However, as the government is lacking of good governance in its implementation, so that is the control practice, which is getting out of the rail. The only solution to cure the financial control is to encourage the government to adopt a political will to combat Corruption, Collusion, Nepotism (CCN), such as through the establishment of the Corruption

Eradication Committee and through the promulgation of a law against money laundering.

2.2.1.2.d. Operational Management

Several institutions holding a responsibility to produce legislation related to the three conventions have put the operational procedure in place. In Indonesia, a legislation making process especially for setting up a law was so time and money consuming, that the process did not seem to run effectively and efficiently. Also in the law making process, the operational target was not defined appropriately resulting in a time frame that went beyond schedule. As an example: the development of a law regarding the Access towards the Genetic Resources reached its consent in 2003. Unfortunately, even to date there is no clear sustainability of its existence in the future. Therefore, there are several legislation making processes that ended up with dissatisfaction.

2.2.1.2.e. Quality assurance

In the governmental institutions that have developed legislation, we found sufficient guidelines and internal assessment, even though the implementation was not intentionally for the conventions. It was also the case in the controlling and evaluating mechanism of a policy making process. Besides, according to a rule all government institution must adopt an internal audit process under the Inspectorate surveillance. So far, the evaluating practice has run normally, but it is still lacking of its fruitful result.

The internal audit processes have run well, however the institution fails in following up the audit findings nor to include the findings in its future planning system. There is a special organization in every unit of a technical Department that does the evaluation and provides the report to support a good evaluating mechanism, however the cost of legislation remains nontransparent.

2.2.1.2.f. Staff quality

To date, there is a transparent recruitment and promotion system for a staff, however the implementation often goes astray from the existing system (in regions staffs' recruitment is associated with compromise or

CCN). A transparent promotion mechanism is available but it has not run well. As an example: A Scoring List of a Government Employee as an indicator to evaluate a government employee does not run effectively (not in accordance with the procedure). It also takes place in a governmental institution whose works mainly deal with the development of a policy for each convention.

2.2.1.3. Capacity in Individual Level

We will discuss job requirements, incentives and skill development in our discussion regarding the capacity to develop policies, regulations, strategies and programs at the individual level. The discussion is considerably crucial, since in implementing a function to policies, regulations, strategies and programs at the individual level, all related individual variables are directly related to the characteristic of legislation requirements.

2.2.1.3.a Job requirements

In regards to a function to develop policies, regulations, strategies and programs at the individual level, there are several governmental institutions with a policy making responsibility related to the conventions that have a clear job requirements for their policy makers. These job requirements are usually designated for functional positions. Likewise also is the structural position, but it is still lacking of its openness and suffers from an ever changing regulation regarding the functional and structural positions, especially the double position.

2.2.1.3.b. Incentive

The wages and incentives of the policy makers of the governmental institutions related to the convention follow the wages and incentives set for the government employees. Notwithstanding, this current standard seems insufficient even though the governmental institutions have adopted man-hour system. In regards to the career development, the government has adopted a career development mechanism for those holding the functional position. The system is considerably clear, but when confronting with the load of work, the quantity and its relevancy are not optimal. The problem lies on the government's financial condition which is

incapable in offering the government employees a remuneration package the same as what the private firms offer.

2.2.1.3.c Skill development

The governmental institutions have built a training facility to improve the expertise in developing policy related to the convention, however the effort is still lacking of its effectiveness and its sustainability. The current practice indicates that the contents or the requirements of the convention are not specifically included in the training package, but they are by chance included in the package on account of their correlation with the sector's issue. A training to improve a managerial capacity of an individual holding a structural position to implement the task effectively is considerably sufficient. However, the structural position holders are still lacking of technical and functional training. Consequently, they are lacking of appropriate knowledge to implement the convention or even worse, they do not know what ought to be done in regards to the convention. The information facility for the decision makers is not sufficient; the information is available but the network is weak.

2.2.2. National Action Plan

- CBD, article 6(a): Develop national strategies, plans or programmes for the conservation or sustainable use of biological diversity or adapt for this purpose existing strategies, plans or programmes which shall reflect, inter alia, the measures set out in this convention relevant to the Contracting Party concerned: and (b) integrate, as far as possible and as appropriate, the sustainable use of biological diversity into relevant sectoral and cross sectoral plans, programmes and policies.
- FCCC, article 4.1(b): Formulate, implement, publish and regularly update national and, where appropriate, regional programmes containing measures to mitigate climate change by addressing anthropogenic emissions by sources and removals by sinks of all greenhouse gases not controlled by the Montreal Protocol, and measures to facilitate adequate adaptation to climate change;
- CCD, article 9: In carrying out their obligations pursuant to article 5, affected developing country Parties and any other affected country Party in the framework of its regional implementation annex or, otherwise, that has notified the Permanent Secretariat in writing of its

intention to prepare a national action programme, shall, as appropriate, prepare, make public and implement national action programmes, utilizing and building, to the extent possible, on existing relevant successful plans and programmes, and subregional and regional action programmes, as the central element of the strategy to combat desertification and mitigate the effects of drought. Such programmes shall be updated through a continuing participatory process on the basis of lessons from field action, as well as the results of research. The preparation of national action programmes shall be closely interlinked with other efforts to formulate national policies for sustainable development.

- CCD, article 10: The purpose of national action programmes is to identify the factors contributing to desertification and practical measures necessary to combat desertification and mitigate the effects of drought.

There is no national action plan to support the integration of these conventions, such as on logging and others.

The capacity assessment as a means to develop policies, regulations, strategies and programs related to the legislation is carried out at three levels: system, institution and individual.

2.2.2.1 Capacity at the system level

The discussion of the capacity as a means to develop policies, regulations, strategies and programs at the system level focuses on the contextual framework, institutions and laws, participation, accountability and transparency, authority level, property rights and tenure, market and financial flows as well as science and risk. The above mentioned discussion is essential since in the development of policies, regulations, strategies and programs at the system level, all variables are directly related to the characteristics of the national action plan requirements.

2.2.2.1.a. Contextual framework

In the contextual framework of the cross-cutting requirements of the national action plan, we will analyze the situation of several existing environmental policies and the relationship between the national action

plan and the national report. The policy in this regards refers to any regulation produced by the governmental institution and has its relevancy with the national action plan. The national report in this regards refers to the national report of CBD, the national communication of FCCC and the national action plan of CCD. The complete situational analysis is already in place, but the problem lies on the non-legally binding Action Plan, so that it can be implemented optimally.

2.2.2.1.b Institutions and laws

The institution and laws in the context of the cross-cutting requirements of the national action plan applies to the environmental legislation. We will also discuss whether or not the current environmental regulations have already supported the national action plan. The current regulations are in harmony with the National Action Plan, but the non-legally binding nature of the National Action Plan remains as a problem. On account of it, it is difficult to mandate sectors and regions to be bound with the implementation of the documented action plan. In several times, politics and other factors are the major influences to settle any environmental dispute, as once happened in buyat case, pulp, industrial wastewater, textile, Citarum water shed area and others.

2.2.2.1.c Participation, accountability and transparency

Public participation in the development of National Action Plan mechanism is in place and is currently running even though publics are not fully participated in the development of the National Action Plan. The National Planning was carried out by the Government in cooperation with the Non-Governmental Organization, and the development phase is accomplished through a sufficient public consultation.

In general, any policy making process should be accomplished through public participation and the decision making process for a policy should involve publics. It is a general practice for the development of a law, regulation or even national action plan.

Indonesia has started the efforts to include public participation in the development of the National Action Plan and in the decision making process. In the real practice, the system remains inadequate, since

government often dominate the composition of public participating in this process. There is an exception however, the National Park Bunaken experienced an adequate public participation. Cooperation between the government and the surrounding society and among the stakeholders is regulated in the Ministerial Decree regarding A Collaborative Management on A Natural Conservation Area, that satisfactorily delegates task and authority among them, including a clear planning. Meanwhile, there is no execution for the distributed responsibility for any activities related to the national plan.

There is only limited public accountability in practice, such as the Accountability Report for the Performance of the Governmental Institutions (ARPGI) and hearings with the House of Representatives, which public only knows a few. ARPGI is one type of public accountability that the government carries out, as it is mandated in the Presidential Instruction no. 7 of 1999 regarding the Accountability of the Governmental Institutions Performance.

2.2.2.1.d. Authority level

So far, only the central government who has the authority in developing strategy and action plan related to the three conventions, even though related stakeholders participated in the process (related sectors). The central government as the authority bearer of the convention has to elaborate it in the national policy (including plan and program), which sectors and regions should follow up. The action plan in general defines roles between the central and regional governments; several sectors show a sufficient role, such as Ministry of Forestry, but in general it is beyond adequacy. There is still a need to clearly define authority between central and regions in implementing the three conventions. A non defined implementing regulations in the central level requires support for its implementation in the regions. To date, there is no (or perhaps unnecessary) regulation that manages the distribution of authority between the central and regional levels in implementing the National Action plan. However, they can use the law on Regional Autonomy and its inferior regulations as the basis for the implementation.

2.2.2.1.e. Property rights and tenure

Several action plans have paid their attention on property rights. As an example, the development of an action plan took notice on the property rights on a land, so that to give respect to ownership is one issue to be upheld. Every convention takes heed on property rights issues, such as UNFCCC is related to Patent (result of the modelling software related to climate change is available at IPB, ITB and others), while UNCCD acknowledges land lord system.

2.2.2.1.f. Market and financial flow

The action plan has accommodated the market and financial flows issues in its development phase, however the issues are not elaborated in details, such as UNCBD defines a quota system, UNCCD has not done any calculation only acknowledging an economic benefits derived from land rehabilitation, UNFCCC has considered them under the Clean Mechanism Development (CDM), and the collaborating modeling softwares from one institution to another, individual or institutional level.

2.2.2.1.g. Science and risk

Science and risk has been put into consideration and served as the basis in the action plan making process; the national planning for the implementation of the conventions involved the participation of academics, practitioners, bureaucrats, non-governmental organizations and scientists.

2.2.2.2. Capacity in institutional level

In the discussion of capacity in the development of policies, regulations, strategies and programs at institutional level, we will discuss corporate governance, corporate strategy, resource management, operational management, quality assurance, staff quality and monitoring performance. The above mentioned discussion is essential since in implementing the function in the development of policies, regulations, strategies and programs at institutional level, all institutional variables are related directly to the characteristics of the national action plan requirements.

2.2.2.2.a. Corporate governance

Several related sectors (the stakeholders) participated in the action plan making process, such as INSAP and NAP CCD, but only sectors who participated in FCCC. Several action plans are in harmony with the targeted time frame and risk managed was also accommodated and received an appropriate portion in the action plan. Managerial structure was available and is currently running well, as reflected from the completion IBSAP and NAP CCD, however National Committee as required in FCCC stumbles. The development of an action plan was a project base activities that received participation from many institutions. We can find all of the action plans of the three conventions as mere documents of planning which sectors and regions are not legally bound to implement them nor serve as the basis for sectors and regional planning. At present, it is essentially crucial to make those planning documents as a legally binding ones for sectors and regions, so that they can serve as binding guidelines. Looking to this condition, we can not put the blame on the regions and sectors when they do not comply with IBSAP, NAP or FCCC Action Plan since there is no rule that binds sectors and regions to refer on them.

2.2.2.2.b. Corporate strategy

In the development of the action pan, the involved institutions do not bear a specific mandate, instead, each convention provides the required mandate. The involvement of the institution is limited to its appointment as the National Focal Point (NFP), while other participating institutions other than NFP has no specific plan to develop an action plan for the three convention. However, the implementation of the action plan practically is related to the task and function of the respective institution. There is no harmony between the goals and targets and its indicators, since the indicators are still vague and lack of common commitment nor coordination or synergy among the institutions, such as different criteria and indicators of the area of critical land that MoA and MoF adopt. Sectors and regions can develop action plan in accordance with the agreed national plan (even though not legally binding).

2.2.2.2.c. Resource Management

The government (the institutions pertaining to the development of an action plan) has not allocated resources and management plan in the development of an action plan. It was the donors or the secretariat of the respective conventions who allocated their resources to assist Indonesia in developing the action plan. The resource allocation for CBD and CCD went along with the management plan, however it is suffice say that this resource allocation should hit the right target and be spent wisely. Budget control management should go in line with the mechanism that the donor requires.

2.2.2.2.d. Operational management

There is no operational procedure or guideline for the implementation of an action plan for each convention. For example, CCD has not set up agreed criteria for critical land, resulting in lack of operational guidelines. However, there are clear operational targets in some program such CBD has a clear operational targets for its recovery endangered species (tigers, elephants, rhinos, orang utans). Bureaucracy issues and the worthiness of information value block the information flows.

2.2.2.2.e. Staff quality

In general, the delegation of an employee in terms of implementing the action plan was carried out through a Ministerial Decree: thus there is no system for recruitment and promotion. However, every governmental institution has adopted and implemented such a mechanism- regulated in the existing program- even though it is lacking of transparency.

2.2.2.2.f. Monitoring performance

The organizing team of each convention has set up a reporting and accountability system when developing an action plan. The report is called LAKIP which is reported every 3 months. The monitoring performance of the members of the organizing team is considerably sufficient but the implementation went beyond the expectation.

2.2.2.3. Capacity at the individual level

The discussion of the capacity as a means to develop policies, regulations, strategies and programs at the individual level focuses on job requirements, incentives and skill development. The above mentioned discussion is essential since in the development of policies, regulations, strategies and programs at the individual level, all variables are directly related to the characteristics of the national action plan requirements.

2.2.2.3.a. Job requirements

An institution with the authority to coordinate the development of an action plan set up an organizing team whose job was to facilitate any activities pertaining the development of an action plan. The institution also recruited members of the organizing team with respect to his or her position, expertise and experience in the three conventions. There was no specific requirement for those who got involved in the development of an action plan, since the recruitment was merely based on expertise on the proposed candidate.

2.2.2.3.b. Incentive

The wage and incentive standard for the individual who participated in the development of the action plan was not compatible to those of a foreign expert.

2.2.2.3.c. Skill development

The Ministry of Research and Technology was the only institution who attempted to provide a training activity called Operation Research System Analysis, but stumbled; other institutions carried no training activities during the development of the action plan. An individual whose job was to develop an action plan, needed an in depth understanding in performing an analysis with regard to the proposed method. As an addition, he or she needs to improve his or her expertise in utilizing several methods appropriate for the development of the action plan. The available information was considerably sufficient for the development of the action plan.

2.2.3. Public education and training

- CBD, article 12(a): Establish and maintain programmes for scientific and technical education and training in measures for identification, conservation and sustainable use of biological diversity and its components and provide support for such education and training for the specific needs of developing countries.
CBD, article 13(a): Promote and encourage understanding of the importance of, and the measures required for, the conservation of biological diversity, as well as its propagation through media, and the inclusion of these topics in educational programmes.
- FCCC, article 6a(i): Promote and facilitate at the national and, as appropriate, subregional and regional levels, and in accordance with national laws and regulations, and within their respective capacities: (i) The development and implementation of educational and public awareness programmes on climate change and its effects;
- CCD, article 5(d): promote awareness and facilitate the participation of local populations, particularly women and youth, with the support of nongovernmental organizations, in efforts to combat desertification and mitigate the effects of drought;
- CCD, article 6(e): promote and facilitate access by affected country Parties, particularly affected developing country Parties, to appropriate technology, knowledge and know-how.
- CCD, article 19(1): promote and facilitate access by affected country Parties, particularly affected developing country Parties, to appropriate technology, knowledge and know-how: (b) by strengthening training and research capacity at the national level in the field of desertification and drought; (d) by fostering the use and dissemination of the knowledge, know-how and practices of local people in technical cooperation programmes, wherever possible.

The capacity assessment for the implementation of policies, regulations, strategies and programs related to legislation is carried out at three levels: system, institution and individual.

2.2.3.1 Capacity at system level

The discussion of the capacity as a means to develop policies, regulations, strategies and programs at the system level focuses on the contextual framework, institutions and laws, participation, accountability and transparency, and science and risk. The above mentioned discussion is essential since in the development of policies, regulations, strategies and programs at the system level, all variables are directly related to the characteristics of the public education and training requirements.

2.2.3.1.a. Contextual Framework

In the contextual framework of the cross-cutting requirements for public education and training, we will analyze the situation of several existing environmental policies and the relationship between those activities and the national report. The policy in this regards refers to any regulation starting from laws to regional government decrees pertaining to the implementation of the conventions in terms of civic education and training. The national report in this regards refers to the national report of the three conventions and the annual report of an institution who implements any activities of each of these three conventions.

In regards to the public education and training for the three conventions, the government has developed sufficient policies, regulations, strategies and programs at the system level. For your information, there was a complete situational analysis when the government provided public education and training related to CBD, CCD, and FCCC (even though still in sectors level). As an example, MoA and MoF developed a complete analysis prior to a strategy for public education and training. Besides, activities related to public education and training are located under the umbrella of the national report of CBD, CCD and FCCC even though FCCC activities are still at sectors level.

2.2.3.1.c. Participation, accountability and transparency

In the cross cutting requirements for public education and training, the discussion on participation, accountability and transparency focuses on public participation in any activity related to public education and training as well as its accountability.

It is considerably crucial to have public participating in activities related to public education and training for the three conventions, since they are the main players. The current practice indicates an adequate public participation, especially from the NGOs, but they have not reached a wider range of private participation especially from private schools, academics and public in general. Currently, public accountability is limited to the Accountability Report of the Performance of a Governmental Institution or LAKIP (Indonesian term); unfortunately public shows little interest on it. LAKIP is one type of accountability report that a governmental institution makes available to public, as mandated in Presidential Instruction no. 7 of 1999 regarding the Accountability Performance of a Governmental Institution.

2.2.3.1.d Science and Art

In regards to any activity related to public education and training for the three conventions, it is suffice to say that science and risk were taken into consideration in the implementation methodology. Science was used as a basis in developing a public educational material, such as in the printed media, electronics or in formal education.

2.2.3.2. Capacity at the institutional level

The discussion of the capacity as a means to develop policies, regulations, strategies and programs at the institutional level focuses on the corporate governance, corporate strategy, resource management, operational management, and staff quality and monitoring and performance. The above mentioned discussion is essential since in the development of policies, regulations, strategies and programs at the institutional level, these five institutional variables are directly related to the characteristics of public education and training requirements while the quality assurance variable has no correlation with the requirements.

2.2.3.2.a. Corporate governance

The government had produced several strategies when the government implemented the public education and training activities (for example, Department of Forestry included public education in its strategy and NGOs were involved in the implementation), but the implementation was considerably inconsistent due to several hurdles as explained before.

NGOs participated in public education and training activities consistently, but the program went beyond what the government expected. Therefore, there is a need to synchronize these activities. In regards, to FCCC and CCD, the government formulated a strategy on public education and trainings; they were already implemented but fell short of consistency and continuity. As an example, in order to improve knowledge and expertise in the field of land degradation, Sadagori Foundation set up a clear program which was consistently implemented. Besides, LAPAN also carried out a consistent program in public education and trainings under the umbrella of FCCC.

In regards to public education and training, the government has accommodated risk, but unfortunately it was inadequate. For an example, the Department of Education removed a directorate whose function is related to public education and training in general. The case also happened in other technical departments; Department of Agriculture removed a unit whose job was to provide guidance. While at the regional level and under the governmental structure, the instructors do not hold functional positions as instructors.

2.2.3.2.b. Corporate strategy

Every institution has developed a strategy to carry out public education and training activities; this is based on mandate. However the activities are not in harmony with the management plan, and have no clear and sustainable criteria and indicators for evaluating their success measures.

2.2.3.2.c. Resource management

Resource management went along with the management plan in the implementation of the public education and training. Unfortunately, public education and training activities are not set as a priority in every institution. Nonetheless, government fully supports any institution, such NGO if they want to implement the program. A budget mechanism control is available, but it does not run optimally.

2.2.3.2.d. Operational Management

Several institutions have set up an operational procedure regarding public education and training. For an example, under the CBD umbrella the management of National Park Institution and the Conservation Institution of the Department of Forestry carried out a continuous public education. The program was associated with the awareness building and poverty eradication programs. Government has set up a syllabus related to CCD for its public education and training program. As for the FCCC, there is a temporal operational procedure for mitigating any adverse impact inflicted by climate change, such as floods, draughts, forest fire; these issues are under the responsibility of the regions and Bakorstanas at the central level. No standard criteria for evaluating an individual after completing public education and training serves as a hurdle in public education and training. Another problem arises from the lack of a clear operational target on public education and training. Information flow on public education and training runs well and the information is accessible.

2.2.3.2.e. Staff quality

Currently, we can find a transparent recruitment and promotion system for an employee in regards to public education and training, especially the formal ones, such as an instructor. Individual capacity in several institutions managing a formal public education and training is associated with the existing job description that meets the standard and field of expertise. In the case of NGO and National Park Institute and Natural Resources Conservation, those who manage public education and training are experts in their field, even though they are lacking of knowledge and experience for providing a public training. The current capacity needs further improvement through training of trainers.

2.2.3.2.f. Monitoring performance

There is a formal reporting and accountability system for any activity at the governmental level. One of them is LAKIP that has a clear reporting system, but is lacking of a sound implementation.

2.2.3.3. Capacity at the individual level

The discussion of the capacity as a means to develop policies, regulations, strategies and programs at the individual level focuses on the job requirements, incentives and skill development. The above mentioned discussion is essential since in the development of policies, regulations, strategies and programs at the individual level, these three variables are directly related to the characteristics of public education and training requirements.

2.2.3.3.a. Job requirements

A job requirement is considerably clear in the implementation of public education and trainings, especially for the training providers who have specific requirements.

2.2.3.3.b. Incentive

The standard wage and incentive for any individual involved in public education and training activities is not sufficient. An instructor's career path is well structured especially when it is associated with the existing functional and structural positions.

2.2.3.3.c Skill development

A sufficient training facility with the goal to improve expertise in public education and training for the three conventions was available. For CCD, the facility was still sectoral, but for FCCC it was specific and was carried out by the institutions holding the responsibility and the program. There were a lot of training series under CBD but the information is incomplete.

NGOs carried out a lot of public education and training activities. A government employee received a skill development through undergoing series of trainings, workshops, seminars, and national and international trainings. Information on public and training for an individual was considerably sufficient.

2.2.4. Public participation

- CBD, article 9(e): Cooperate in providing financial and other support for ex-site conservation outlined in subparagraph (a) to (d) above and

in the establishment and maintenance of ex-site conservation facilities in developing countries.

- FCCC, article 6(a) Promote and facilitate at the national and, as appropriate, subregional and regional levels, and in accordance with national laws and regulations, and within their respective capacities (iii) Public participation in addressing climate change and its effects and developing adequate responses.
- CCD, article 19(4): The Conference of the Parties shall establish and/or strengthen networks of regional education and training centers to combat desertification and mitigate the effects of drought. These networks shall be coordinated by an institution created or designated for that purpose, in order to train scientific, technical and management personnel and to strengthen existing institutions responsible for education and training in affected country Parties, where appropriate, with a view to harmonizing programmed and to organizing exchanges of experience among them. These networks shall cooperate closely with relevant intergovernmental and non-governmental organizations to avoid duplication of effort.

The assessment capacity as a means to implement policies, regulations, strategies and programs on legislation is carried out at three levels: system, institution and individual.

2.2.4.1. Capacity at the system level

The discussion of the capacity as a means to develop policies, regulations, strategies and programs at the institutional level focuses on the contextual framework, institutions and laws, participation, accountability and transparency, authority level, property rights and tenure, as well as science and risk. The above mentioned discussion is essential since in the development of policies, regulations, strategies and programs at the institutional level, only the system variables are directly related to the public participation requirements.

2.2.4.1.a Contextual framework

In the situational analysis for the three conventions on account of public participation, we have found that among these three only CBD that has a complete situational analysis in regards to public participation. The issues

is clearly written in Act no. 5 of 1990, article 37 regarding Public Participation, Act no. 41 of 1999, article 68 paragraph 2b: "every information on forest planning, forest products and forest information should be accessible to public" and Act no. 23 of 1997, article 5 paragraph 2 and 3: "every individual has an equal right for an environment in regards to his or her participation on environmental management" and "every individual has a right to participate in managing the environment in line with the existing regulations".

In general, there is no correlation between public participation of the three conventions and the national report, but the national report of CBD has accommodated public participation activities in the protected area. As for FCCC, the National Committee of Climate Change holds the responsibility of its dissemination.

2.2.4.1.b Institutions and laws

The article 8 of the act no. 23 of 1997 defines environment as follows: "the government has authority upon the natural resources, and shall utilize it optimally for the welfare of society through series of regulation". The phrase indicates that the government has a mandate to regulate and to develop policy for environmental management, including the environmental planning, utilization, management and recycle of natural resource, among other is genetic resource.

In the field of law enforcement for those regulations, the government has not developed a sanction scheme when violation occurs. CBD recognizes the scheme in regards to the traditional rules in several areas where the society upholds the rules in the area and its surrounding actively, especially in the protected area.

Several laws have regulated dispute settlements through a legal procedure; CBD has upheld the scheme. But when a conflict takes place, centering on the traditional rights in a conservation area, the dispute settlement mechanism is carried out through a legal process and through setting up an enclave in that area, following series of meeting and agreements in every level.

2.2.4.1.c. Participation, accountability and transparency

In general, the development of a policy and the decision making process require public participation. The government of Indonesia has put in place the mechanism of public participation in a policy making and in the decision making process. On account of it, the development, decision making and implementation processes of a policy always involve public participation. Besides, public can evaluate the legitimacy of a regulation through a material testing of a regulation or an activity.

2.2.4.1.d. Authority level

We consider that the delegation of job and mandate in regards to public participation is clear and is in accordance with its job and function. However, an overlapping occurred during the implementation phase due to a vested interest. For forestry issue, the central government has delegated some of its authority to the regions, so called decentralization. Even though the current law ascribes the conservation authority under the central government, the Department of Forestry has set up a policy regarding the Collaborative Management that delegates responsibility, profit and authority proportionately to any stakeholder in a certain area. As for the public participation under CBD and CCD, the society surrounding the National Park has gained a good understanding of the existing condition, but it is not the case for FCCC since the problem mainly arises from the lack of understanding of the rights and responsibility that the local society bears for the implementation of the convention.

2.2.4.1.e. Property rights and tenure

Property rights and tenure is a crucial element in the public participation of the implementation of the conventions, since the data shall refer to the location or the area of the implementation. We can find the issue in respect to CCD and CBD, where the available land is related to the rights of the land lord, *ulayat's* land and traditional land (the implementation of the program usually also considered inputs and advice from the land lord and the traditional society). FCCC has not acknowledged property rights and tenure issues, since the society does not understand and considers the issue still in infancy and under debate. The intellectual right in terms of CBD refers to the local or traditional knowledge and the issue has been discussed several times in the discussion forums. However, there is still a

need to elaborate the issue into appropriate legislation in order to protect the property rights of the knowledge.

2.2.4.1.f. Science and risk

Science and risk was analyzed prior to the implementation of an activity that required public participation. The analysis mainly focuses on the delivery method, on how a society participated in an activity. We found the academics participation in their efforts to increase public participation in an activity related the convention.

2.2.4.2. Capacity at the institutional level

The discussion of the capacity to mobilize information and science at the institutional level focuses on the corporate governance, corporate strategy, resource management, operational management, staff quality, and monitoring performance. The above mentioned discussion is essential since in the development of policies, regulations, strategies and programs at the institutional level, the six institutional variables are directly related to the public participation requirements.

2.2.4.2.a. Corporate governance

Only two conventions, CBD and CCD, that included public participation in their strategies implementation, while FCCC failed to do so subjecting to lack of dissemination of FCCC itself. We can see it in the Short Term Plan of the Department of Forestry that has implemented a strategy related to public participation meeting the CBD implementation components. Besides, the strategy also has been consistently implemented in the National Park Institution and BKSDA. We can also see it from the Short Term Plan of the Department of Agriculture where a new directorate managing public participation was just established.

NGOs have contributed to the implementation of risk management in regards to public participation; and it is well managed. The activity refers only to CBD convention. As for FCCC, even though a National Disaster Coordination Agency was appointed as the responsible unit, the program did not run smoothly. Public participation in the CCD implementation did include risk management, such as no authority or legislation that regulates slash and burn.

In the structure management of CBD and CCD, we can find a clear and an output oriented structure. FCCC has set up a management structure but it fails to run accordingly.

2.2.4.2.b. Corporate Strategy

The existing strategy that supports public participation for the three conventions is based upon mandate. The related institutions have set up only limited programs related to the implementation of the conventions, associated with the management plan for the three conventions. On account of it, the goals and targets have no profound basis, especially in the criteria and success indicators of the public participation program.

2.2.4.2.c. Resource management

The government institution requires any resource allocation to follow the management plan. Nonetheless, public participation activities for the three conventions do not conform to the management plan since the government does not set it as the priority (not the central issue), but the government will support any other institution (NGO) who commits to do so. Several National Parks have specifically allocated their budget to improve public participation especially in the biodiversity conservation through poverty alleviation activities. As for the budget control mechanism for the public participation activities, the three conventions share a similar condition and the mechanism must conform to that the government sets up.

2.2.4.2.d. Operational management

Most of the governmental institutions have adopted an operational standard procedure to carry out public participation activities for the three conventions. Several national parks have put in place a mechanism that involves public participation, which is well managed. In terms of CCD, we can find public participating in an effort to combat land degradation. Governmental program such as National Land Rehabilitation Efforts have engaged several stakeholders in its implementation.

2.2.4.2.e. Staff quality

In general, there is a transparent recruitment and promotion system for an employee as regulated in the government employee system. Even though a system to manage staff performance is available, but in terms of public participation the system is only associated with guidance provision (we can say that the system lacks of instructor participation, and only delegates a technical person) with an unstructured staff's needs, albeit a position/human resource needs analysis is available.

The career path for a formal position is clear. There is also a procedure to implement public participation activities, even though it does not run optimally.

2.2.4.2.f. Monitoring performance

We can only see the success measures of the public participation programs in the long run through a continuous monitoring system. The current monitoring performance is qualitatively and quantitatively adequate, but its continuity is not optimum, so that it is difficult to measure the success measures of public participation activities.

2.2.4.3. Capacity at the individual level

The discussion of the capacity to mobilize information and science at the individual level focuses on job requirement, incentives and skill development. The above mentioned discussion is essential since in the development of policies, regulations, strategies and programs at the individual level, all individual variables are directly related with the public participation requirements.

2.2.4.3.a. Job requirements

There is no specific requirement for the implementation public participation activities. Every responsible individual received less guidance to achieve his or her goal. To reach a desirable implementation of public participation activities, the government usually invites NGOs' participation or if the Human Resource is available, then the institution carries out trainings in regards to the implementation of public participation.

2.2.4.3.b. Incentive

The existing wage and incentive standard for any individual working as a government employee in the field of public participation conforms to that of the government employee. An NGO playing in the international level has a wage system with a specific standard, while the local NGO has not adopted that kind of system. In the career development, the government has set up a career path for its employees but the implementation does not conform to the existing standard, especially for those engaged in the public participation activities.

2.2.4.3.c. Skill development

In general, we can say that the human resource related to public participation (especially for CBD and CCD) is sufficient and is supported with appropriate trainings, even though in several aspects the trainings were not appropriate to the existing condition. The FCCC received no adequate support in regards to human resource since the National Communication itself has no action plan. The condition was exacerbated with the fact that the membership position is based on structural position that was changing, but not on expertise.

The information on public participation is considerably sufficient, but there is also a need to improve and to add the information continually, so that people can access new and globally updated information. The capacity building considered scientific aspect and was considerably sufficient, but the transfer of knowledge required a systematic effort in as much that it would improve the human resources' performance. Besides, there is also a need to engage scientists and technical staffs in Indonesia in research and study activities to guarantee the sound judgment of the expected science.

2.2.5. Information exchange

- CBD, article 17(1): The Contracting Parties shall facilitate the exchange of information from all publicly available resources, relevant to the conservation and sustainable use of biological diversity, taking into account the special needs of developing countries. (2) Such exchange of information shall include exchange of results of technical, scientific, and socio-economic research, as well as information on training and surveying programs, specialized knowledge, indigenous and local

knowledge as such and in combination with the technologies referred to Article 16, paragraph 1. It shall also, where feasible include repatriation of information.

- FCCC, article 7(2): The Conference of the Parties, as the supreme body of this Convention, shall keep under regular review the implementation of the Convention and any related legal instruments that the Conference of the Parties may adopt, and shall make, within its mandate, the decisions necessary to promote the effective implementation of the Convention. To this end, it shall (b) Promote and facilitate the exchange of information on measures adopted by the Parties to address climate change and its effects, taking into account the differing circumstances, responsibilities and capabilities of the Parties and their respective commitments under the Convention.
- CCD, article 16: The Parties agree, according to their respective capabilities, to integrate and coordinate the collection, analysis and exchange of relevant short term and long term data and information to ensure systematic observation of land degradation in affected areas and to understand better and assess the processes and effects of drought and desertification. This would help accomplish, inter alia, early warning and advance planning for periods of adverse climatic variation in a form suited for practical application by users at all levels, including especially local populations.

The capacity assessment on information and science mobilization related to information exchange is carried out at three levels: system, institution and individual.

2.2.5.1.a. Contextual framework

In the information exchange context, we found a complete situational analysis for the Convention on Biological Diversity, while the other two conventions (FCCC and CCD) were short of a complete analysis; even though several policies on information exchange were established, but they failed to regulate the information exchange for the three conventions. We can see it from act no. 9 of 1985 regarding Fishery, article 14 says " The government shall provide an information system assistance and execute a collection, management, and wide dissemination of technical and fishery production data to support the fishery resource management

activities as well as the development of fishery” (CBD). Sectors have carried out an exchange of information at the international level. The national reports to the three conventions have incorporated the information exchange activities. Nonetheless, the information and science exchange has been an issue that needs further improvement at the national political level.

2.2.5.1.b. Institutions and laws

The existing environmental regulation supports the exchange of information. Act 23 of 1997 regarding The Environment defines an information exchange as an essential element. Besides, in general there is a specific law that regulates the freedom to access information from mass media. Only CBD that a regulation on the exchange of its thematic information, while FCC and CCD only regulate the issue in general. No mechanism regulating the information exchange for the two conventions is held responsible for the limitation of information.

A Clearing House Mechanism (CHM) was set up as a means to exchange the information. Currently it only applies to CBD, but it may be possible for other conventions to adopt a similar mechanism. Under the CHM, a National Biodiversity Information Network (NBIN), centered at LIPI (Biological Research Center) was established. NBIN consists of several nodes from several institutions, such as Nature Conservation Information Center (NCIC) at the Department of Forestry. To run smoothly, the establishment of the Clearing House needs to be formalized.

2.2.5.1.c. Participation, accountability and transparency

It is important to have public participation in the information exchange activities, bearing in mind that the information exchange is by public and for the sake of public themselves in comprehending and implementing the three conventions. In the implementation phase, the decision making process for an information exchange policy will always engage public participation. Besides, public can access the report in general to find the accountability of the implemented activities. As mentioned above, there is a specific law to protect mass media on their important roles in respect to dissemination of information.

2.2.5.1.d. Authority level

There is no authority that particularly regulates an information exchange for the three conventions, since information exchange has no correlation with authority. What needs to be followed up is the ability to delegate and to open an access of information so that information exchange can take place at every level.

2.2.5.1.e. Property rights and tenure

Property rights and tenure play an important element in the implementation of information exchange in regards to the existence of the data; the secondary data can be informed directly to other party, while important primary data requires specific administration to access. To date, that kind of mechanism is not in place, even though there is an agreement, among others the Technical Commission of the National Communication, under FCCC, has that kind of mechanism but failed to run accordingly since felling short of coordination with the NFP. The CHM acknowledges the property or copy rights of information through a mechanism; it also applies to an exchange of confidential information. The Act no. 19 of 2002 regarding intellectual property rights regulates the underlying issue and can serve as the basis for the implementation of the issue for the three conventions.

2.2.5.1.f. Market and financial flows

Market and financial flows issues may have no direct correlation with information exchange. There was some high cost information to access, not because of the scarcity of the issue but because of the degree of difficulty in accessing the data; thus resulting in a high cost. In terms of data and information, an up to date data received a high value. There is a need to develop a regulation that can simplify access to information and the information exchange mechanism for the benefits of both owners and users. So far, people need to pay for acquiring some data and information, but do not have to do so for the free ones (by regulation and political free).

2.2.5.1.g. Science and risk

Data and information are strongly related to science and risk, so we considered it is unnecessary to discuss the relevancy of information exchange with science and risk.

2.2.5.2 Capacity at the institutional level

The discussion of the capacity to mobilize information and science at the institutional level focuses on corporate governance, corporate strategy, resource management, operational management, quality assurance, staff quality and monitoring performance. The above mentioned discussion is essential since in the development of policies, regulations, strategies and programs at the institutional level, all institutional variables are directly related with the information exchange requirements.

2.2.5.2.a. Corporate governance

There is no strategy as the basis for the information exchange for the three conventions; even if it was available, the strategy did not work out well. As an example, under the CBD a Clearing House Mechanism (CHM) was established, but it could not operate optimally due to lacks of rules of the game for an information and data exchange mechanism. It applies also to FCCC where the existing CHM needs to be improved and to have additional data and information. The existing condition of lacking the information exchange strategy resulted in the lack of risk management and lack of an effective structural management plan during the implementation of information exchange, so that every activity went by itself. Considering the urgent need of information exchange in the implementation of the convention, it is essential to develop a CHM as a tool to accommodate the issue not only for the three conventions, but also for others. As a first step, the rules of the game need to be set up.

2.2.5.2.b. Corporate strategy

The existing strategy, as the basis for the information exchange activities for the three conventions have not been based upon mandate. The information exchange plan has not been associated with the management plan, so that the desired goals and targets are baseless.

2.2.5.2.c Resource management

Most of the sectors managing any part of the convention have a strategy in developing an information system for the sake of the sectors themselves. But the system is very sectoral and it is not clear how other institution can access or share the information. At the national level, the information system developed by a sector needs to be coordinated under CHM, in this regards NBIN should play a role a center of the exchange in exchanging information from the sectors' nodes.

2.2.5.2.d. Operational management

As it does with the corporate strategy, the development of information exchange takes place in sectors. The problem lies on how to develop a mechanism to facilitate the transfer of information that sectors have developed and to fulfill the information for the sake of an effective implementation of the convention. Besides, the government needs to share its information with NGOs who developed theirs information system.

3.5.2.e. Quality assurance

In the governmental institutions, the implementation of internal and external information exchange has not been properly regulated or received less guidance. Besides, there is no monitoring and surveillance system in this respect due to the sectors ego and lacks of cooperative synergy. Nonetheless, the information system developed by sectors is benefiting their monitoring and evaluating activities.

2.2.5.2.f. Staff quality

In general, there is a transparent recruitment and promotion process for an employee as regulated under the government employee system. Even though a performance measurement for a staff is available, the promotion process is not in accordance with the existing guidance, so that it is not the right person on the right place. In terms of information exchange, there is no specific recruitment process. Several governmental departments have recruited an individual with an information technology background, assigned to information system development or statistic unit at the respective department.

2.2.5.2.g. Monitoring performance

There is a standard guideline for any reporting and accountability system for all activities in governmental level; it includes information exchange report. LAKIP is one type of a reporting system with clear definition, however the implementation is not adequate.

2.2.5.3. Capacity at the individual level

The discussion of the capacity to mobilize information and science at the individual level focuses on job requirement, incentives and skill development. The above mentioned discussion is essential since in the development of policies, regulations, strategies and programs at the individual level, all individual variables are directly related with the information exchange requirements.

2.2.5.3.a. Job requirements

There is specific requirement for a position in the implementation of information exchange. Every individual who manages the information exchange issues must comprehend things related to the information and information technology exchange. A specific recruitment process supports the implementation of the information exchange or the available human resources will enable the institution to carry out the related trainings in respect to the information exchange.

2.2.5.3.b. Incentive

The existing wage and incentive standard for any individual working as a government employee in the field of information exchange conforms to that of the government employee. To add his or her wage, an employee received an information exchange training may explore an opportunity to work as a free lance in several places related to information exchange, and thus forgetting his or her main responsibility. In the career development, a career development system for a government employee is available, but the implementation is not according to existing system.

2.2.5.3.c. Skill development

In general, the human resources that an institution or an agency have prepared related to information exchange is considerably sufficient (mostly coming from the Ministry of Research and Technology), supported by

adequate trainings, even though the trainings partly reached the goal. The existing trainings were mostly technical ones such as information technology which was really operational and was targeted for the operators, not for the decision makers. Lack of political will from the government impeded the implementation of the information exchange activities. We consider the information exchange activities are currently sufficient, even though the information is scattered and difficult to access. The decision makers and politicians need to participate in the transfer of knowledge to guarantee the implementation of the conventions.

CHAPTER III

ASSESSMENT OF CROSS CUTTING CAPACITY CONSTRAINTS AND WEAKNESS, CAPACITY NEEDS AND OPPORTUNITIES

3.1. Cross-Cutting Capacity Constrains and Weakness

Based on UNITAR guideline², there are several recommendations believed as cross-cutting constraints in several countries when implementing the three conventions, as follows:

- Awareness and exchange of information;
- National policy, legal and regulatory framework;
- Institutional mandate, co-ordination and processes for interaction and co-operation between all stakeholders;
- Information management, monitoring and observation;
- Mobilization of science in support of decision making;
- Financial resource and technology transfer;
- Incentive system and market instrument;
- Negotiation;
- Co-operation and networking with regions;
- Institutional management and performance;
- Individual skills and motivation.

As for Indonesia, given the existing cross cutting constraints and its relevancy with the result analysis of the thematic assessment and cross cutting requirements, we can identify priorities of the cross cutting capacity constraints in the implementation of the three conventions, such as:

- National policy, legal and regulatory framework;
- Awareness and information exchange;

² GEF, A Guideline for Self-Assessment of Country Capacity Needs for Global Environmental Management, 2001

- Institutional mandate, co-ordination and process for interaction and cooperation between all stakeholders;
- Financial resource;
- Individual skill and motivation.

3.1.1. Cross cutting capacity constraint and weakness at the system level

Based on the thematic assessment analysis for the three conventions and on the cross cutting requirements, as well as stakeholders' agreement, we identified the cross cutting capacity constraints at the system level as follows: national policy, law and legal framework and its implementation. The cross-cutting capacity constraints took place on account of weaknesses at the system level as follow:

1. Implementing regulation to carry out several issues at each convention integrally, one of them is regulations on property rights concerning property rights of the traditional knowledge.
2. Authority between local and central not yet clearly to implement at each convention
3. Incentive and disincentive mechanism in terms of the implementation of the three conventions --> the mechanism is available but the implementation stumbles. The incentive mechanism only applies to the society.
4. There is no mechanism to foster the decision of COP
5. Harmonization among the existing regulations and policy in the implementation of each convention --> (For an example: non synchronization among act no. 5 of 1990 concerning The Conservation of Biodiversity Resources and Ecosystem and act no. 9 of 1985 concerning Fishery).
6. Ineffectiveness of the conflict settlement mechanism in regards to natural resources and environment exploitation in regards to the implementation of each convention. So far, any environmental dispute settled out of court is regulated in Law no. 54 of 2000.
7. Stakeholders' participation in every policy and regulation making stage (participation) on account of inappropriate information dissemination.
- 8.

3.1.2. Cross-cutting capacity constraints and weakness at the institutional level

Based on the thematic assessment analysis for the three conventions and on the cross cutting requirements, as well as stakeholders' agreement, we can identify the cross cutting capacity constraints at the institutional level as follows:

1. Institutional mandate, co-ordination and process for interaction and cooperation between all stakeholders;
2. Financial resource;
3. Individual skill and motivation.

The four cross-cutting capacity constraints took place on account of several weaknesses, as follows:

1. Inclusion of the convention specifically in the mandate, task, authority and priority of the institutions; both at central and regional levels for the implementation of the convention.
2. Clarification of legal and mandate status, as well as the main task of NFP to implement the convention at the national level.
3. NFP of CBD, CCD and FCCC are not assigned at a unit specifically managing the convention. The convention is cross sectoral in nature. Due to this characteristic, it will be difficult if only one institution bears the responsibility.
4. Harmonization of perception among institutions and individuals regarding the importance of each convention and lack of awareness for the implementation of each convention.
5. Coordination among and inter sectors and conventions both in national and regional levels in the implementation of each convention.
6. Information and database system management especially in respect to data sharing and accessibility --> data base and data source (a complete and incomplete ones, detailed and non-detailed ones). This condition resulted in non-detailed data and information on natural resources that they could not be used in the planning, development of policies and programs for the three conventions.
7. Institutional capacity (knowledge, financial and human resources support) at the local level (both government and NGO) in the

implementation of activities related to each convention --> refers to staff quality and resource management.

8. Human and financial resources management in every stakeholder (central and regional government, private and NGO) in the implementation of each convention.
9. Implementation of accountability report.
10. A need to execute a training program for each convention at every related institution.

3.1.3. Cross-cutting capacity constraint and weakness at the individual level

Based on the thematic assessment analysis for the three conventions and on the cross cutting requirements, as well as stakeholders' agreement, we can identify the cross cutting capacity constraints at the individual level as follows:

1. Individual expertise and motivation;
2. Awareness and information exchange.

Both cross-cutting capacity constraints took place on account of several weaknesses, as follows:

1. Awareness building, knowledge, willingness and capacity of every human resource in the implementation of each convention.
2. Society's access to the information on each convention.

3.2 Cross-Cutting Capacity Needs and Opportunities

3.2.1 Cross-cutting capacity needs and opportunities at the system level

Based on the thematic assessment analysis for the three conventions and on the cross cutting requirements, as well as stakeholders' agreement, we can identify cross cutting capacity needs at the system level as follows:

1. Reviewing activities (assess/re-assess), revising the regulations (including property rights) to integrate the implementation of each convention.

2. Reviewing activities (assess/re-assess), revising the regulations at clearly of local and central authority.
3. Reviewing activities (assess/re-assess), revising the regulations (including incentive and disincentive mechanism) to integrate the implementation of each convention.
4. Mechanism to foster decision of COP
5. Harmonization among the regulations and policies related to the implementation of each convention.
6. Regulation completeness to settle any conflict deriving from the exploitation of the natural resources and the environment in respect to the implementation of each convention.
7. Implementation of effective law enforcement.
8. Dissemination and improvement of an effective mechanism in matters related to conflict resolution in the exploitation of natural resources and environment in its regards to the implementation of each convention.
9. An effective dissemination system that covers the entire stakeholders in legislation development.

Among those ten cross cutting capacity needs, there are several available opportunities, such as:

- Ratification of the three conventions provides an opportunity to develop the implementing laws and regulations.
- A dynamic political system --> the existence of the Constitutional Court to review laws.
- The availability of appropriate experts to review and revise policies.
- The availability of some data, even though they are still scattered.
- The availability of networking instruments (websites) --> such as NBIN, PIKA, CHM to cover the three conventions.
- The existence of traditional rules and religions that effectively settle any dispute (norms and cultures).
- The availability of a guidance to settle any environmental dispute in general (Governmental Regulation no. 54 of 2000).

3.2.2 Cross-cutting capacity needs and opportunity at the institutional level

Based on the thematic assessment analysis for the three conventions and on the cross cutting requirements, as well as stakeholders' agreement, we can identify the cross cutting capacity needs at the institutional level as follows:

1. Inclusion of the convention specifically in the mandate, task, authority and priority of the institutions; both at central and regional levels for the implementation of the convention.
2. Clarification of legal and mandate status, as well as the main task of NFP to implement the convention at the national level.
3. NFP assignment at the appropriate unit.
4. Coordination among and inter sectors both at the national and regional levels for the implementation of each convention.
5. A mechanism system for information change and accessibility.
6. An optimal human resources management (starting from the recruitment, disposition, career path, reward and punishment system) in the implementation of each convention.
7. Effective and efficient (optimum) use of financial resources (domestic and foreign) that every stakeholder adopts (central and regional governments, privates and NGOs)
8. An optimum access to domestic and foreign non governmental funding.
9. LAKIP as a controlling instrument.
10. Training program (education and training) related to the implementation of each convention.
11. Campaign program related to the implementation of each convention.

Of these eleven cross-cutting capacity needs, there are several available opportunities, as follows:

- A cabinet meeting mechanism is available at the central level (including ministerial level --> inter departmental meetings), a coordinating meeting is available at the regional level; these two can be used (regular meetings)
- Every institution has set up an infrastructure and unit to manage IT.
- A human resource management system is available; the next issue to consider is to put the right man on the right place.

- There is a directory and guidance for information regarding access to foreign funding.
- In domestic arena, there are several private firms that have committed to contribute to the environment.
- The government has produced a law on tax deduction for any firm conducting Research and Development --> Law no. 18 of 2002 regarding sipteknas

3.2.4 Cross-cutting capacity needs and opportunities at the individual level

Based on the thematic assessment analysis for the three conventions and on the cross cutting requirements, as well as stakeholders' agreement, we can identify the cross cutting capacity needs at the individual level as follows:

1. Education and training in respect to the implementation of each convention.
2. Dissemination of information related to the convention effectively.

Of those both cross cutting capacity needs, there are several available opportunities, as follows:

- The existence of an instrument that identifies and implements training and dissemination related to each convention.
- An initial effort to develop a social and economic incentive systems (kalpataru, kehati award)

CHAPTER IV

CROSS CUTTING NATURAL RESOURCE MANAGEMENT

4.1 Problems in Natural Resource Management

Problems on account of natural resource management have been dated back since 1970's through the promulgation of a law concerning domestic and foreign investment to boost economic growth. The investment grew significantly especially in oil and gas, forestry, agriculture and mining sectors. A massive exploitation on natural resources such as oil, forest and mine were the consequent results. In the 70's era and the end of 20th century, the national economy relied heavily on oil and gas, forestry and agriculture sectors. Oil and gas, and mining sectors that exploited non-renewable natural resources had a limitation in terms of the quantity of the resources and this condition resulted in externality. On the other hand, forestry with its renewable resources has also a limitation in its capacity to withstand against the exploitation (resistance) and its ability to recover (resilience). Given this, a sustainability issue is inseparable from the environmental management.

Natural resources degradation finally reached an uncontrolled limit that reflected the mismanagement of the natural resources; forest, land and water; as indicated in the weakness of the system, institution and individual in environmental resource management.

4.1.1 Weakness at the system level

The implementation of regulations is inconsistent and lacks of control:

- Law no. 5 of 1967 regarding Forestry serves as the basis for forest management.
- Management forest is centralized; every logging permit comes from the Central Government.

- Indonesia adopted the Indonesian Selective Logging (Tebang Pilih Indonesia: TPI) for its silviculture system. The system was converted into Indonesian Selective Logging and Plantation (Tebang Pilih Tanam Indonesia: TPTI) that is very strict on paper but lacks of control in its daily practice.
 - There is no control of the logging plan as assigned to forest concession, resulting in an excessive logging in terms of volume and area.
 - An ineffective logging administration that could prevent illegal logging.
- The regulations on wood industry are overlapping and inconsistent, resulted in a discrepancy between the installed industrial capacity (up to 60 million m³ annually) and the limited supply (the capacity of forest yield is up to 25 million m³ annually); consequently demand on woods as raw materials is supplied by illegal loggers.
 - Forest clearing plan for transmigration, farming, housing, agriculture etc was executed aimlessly resulting in forest and habitat fragmentation. In this regards, wildlife-human conflict is inevitable.

Comment [TP1]: Apa ini inggrisnya?

Comment [TP2]: Apa inggrisnya?

4.1.2 Weakness at the institutional level

- Lack of a reliable institution to control forest exploitation and land clearing.
- Selective Logging system (TPI or TPTI) was not executed consistently.
- Lack of good coordination in terms of planning and implementation, especially in the conversion of forest function both among sectors and between central and regional governments.

4.1.3 Weakness at the Individual Level

- Professionalism on forestry is still in question.
- No specialization; so that target to have the right man on the right place is not accomplished.

Natural resources externalities occur in Indonesia as a result of these weaknesses at the three levels. This assessment focuses on the impacts of natural resource mismanagement, in this respect the externalities resulted from the mismanagement of natural resource related to the cross cutting of the three conventions. Based on these problems, we will focus on deforestation, land degradation, drought and flood.

4.2 Deforestation

4.2.1 Definition

Deforestation is the destruction of forest condition and existence as a result of degrading process of activities; this destruction refers to any decline in quality (soil fertility) and quantity (area). For an example, an increase depth of a valley on account of erosion at the bottom of the valley or a decrease height of a hill on account of erosion at its surface. In general, deforestation is described as a removal of a forest. The United Nations Food and Agriculture Organization (FAO) defines deforestation as a the conversion of forested area to land area in a long period of time (more then 20 years) with a decrease of tree canopies less then 10%.

4.2.2 Current condition

Indonesia is one of the nations in the world with a high rate of deforestation. In 2002, Forest Watch Indonesia (FWI), a forum consisting of more then 20 NGOs that undergone a forest research in Indonesia, reported that since 1996 the deforestation rate reached two million hectares per annum. The World Bank in 2000 predicted that if this deforestation rate continued, then in 2005 Sumatra would lose its lowland forests. A similar experience might happen in Borneo by 2010, while forest ecosystem in Celebes would only be limited to 11% in 1997.

Another official data from a different source, indicates an alarming level of deforestation rate in Indonesia. Department of Forestry stated that the deforestation rate reached 1.6 million hectares per annum.

The main cause of deforestation is land clearing for the purpose of land use that excludes any biodiversity consideration into its planning variables. The remaining forest was poorly left or fragmented.

The condition of habitat destruction was made worse with the existence of illegal logging activities that reached even to conservation areas, and forest fire that occurred in a large area annually and threatened the biodiversity in Indonesia. Besides, conversion of forested areas as the

main habitat of flora and fauna took place also in the lowlands, places that are famous for its high level of richness and biodiversity compared to other ecosystem.

Deforestation is the main issue related to the two Rio conventions, namely, CBD and UNFCCC. With regards to CBD, deforestation resulted in a huge biodiversity loss of a forest ecosystem in Indonesia, especially in the lowland forests with the richest biodiversity that were converted into palm oil plantations, gum plantations, industrial forests, permanent housing (transmigration), mining and cropland. As for the UNFCCC, deforestation resulted in an increase of greenhouses gasses as a consequence of a decrease in forest covers that could absorb CO₂, and an increase of carbon released to the atmosphere on account of forest fires and land clearings.

Forest decrease and destruction has devastated and fragmented or eliminated several types of forest ecosystems and has eliminated several wild species and genetics; these two are essential elements of forest. The decrease of genetic diversity, especially those from the wild species whose functions are still unknown, is not well documented. But logically, if an ecosystem and a species are in danger, then a decrease in genetic diversity is most likely to happen. Since not all genetic diversity in the wild species is recognized, while the decrease is inevitable, then Indonesia most likely has suffered from a huge genetic diversity loss, whose value and utilization are still unknown.

Forest has a function as a sink for greenhouse gasses (GHG) emission (usually called carbon emission). Forest can absorb and convert carbon dioxide (CO₂), one type of GHG into oxygen (O₂), a substantial need of living things. In this regards, the large coverage of forest in Indonesia can absorb a huge amount of carbon emission, slowing down the rate of global warming and climate change.

In 1990, Indonesian forests were expected to absorb 1,500 Mt of CO₂ (*Indonesia: The First National Communication under UNFCCC, 1990*). In 1994 Indonesian forests were only able to absorb 404 Mt of CO₂ (NET and

Pelangi, 2000). So, in four years of period, Indonesia failed to sequester GHG emission to the atmosphere to the amount of 1.096 MtCO₂.

Forestry contributes to the highest GHG emission, generated from forest activities and the conversion of forested areas into non forested areas. Any forest devastating activity releases an amount of GHG emissions, stored in trees, into the atmosphere. The higher rate of forest destruction leads to the higher rate of GHG emission released to the atmosphere.

Forest destruction, as a consequence of a massive forest exploitation with no rehabilitation efforts (only one percent of the total exploited areas was followed up with rehabilitation), resulted in a critical land (decrease in land quality in terms of its physical, chemical and biological condition).

Not only forest logging activities, there are several human interfering activities in forest areas that dramatically change the canopy or crown structure of the forest. The process degrades the ecological quality of the forest; since any conversion of forest will reduce its ecological productivity.

Selective logging implemented in conformity with the Indonesia Selective Logging (ISL) or the Indonesian Selective Plantation Logging (ISPL) can prevent the degradation of forest quality. Even though forest clearance on this type normally does not reduce the canopy or the crown structure to less than 10%, the consequences may result in significant impacts. For an example, exploitation of several types of Dipterocarpaceae families, such as meranti, kapur, or keruing – dominant types of high value of forest products in most South East Asia. The density of these high commercial timbers leads to over-exploitation. Forest clearance can adversely affect the flora, fauna population and land. Another example, the decrease of forest quality was a result of the pollution generated by the oil companies (installation leakage, hazardous sludge from drilling activities, small mining leftovers, etc) or from any gold mining activities with its mercury application as one of the chemicals used in the mining activities, and from forest fires as a result of land clearing activities. Even though these activities are not resulting in deforestation, in the long run they can cause a permanent destruction leading to deforestation.

The decrease of forest quality refers to a fact that the existing forest exploitation cannot support the needs, and this will influence the future yield of the production forest. Historically, the slash and burn in the forested area generated insubstantial impact to the forest quality, but when the activities were extended in a larger area, then they will substantially decrease the quality. Impacts of the decrease in forest quality are: loss of biodiversity, drought, loss of water resources, loss of employment in the society who gets a benefit of forest products and loss of sink in terms of forest capacity to absorb carbon.

4.2.3 The existing capacity

To date, the existing capacity related to deforestation issue is the promulgation of law no. 5 of 1990 regarding the Natural Biodiversity Resources and Ecosystem Conservation, law no. 41 of 1999 regarding Forested Area and Presidential Instruction no. 5 of 2001 regarding the Elimination of Illegal Logging and the Distribution of Illegal Forest Products. In regards to deforestation issue, every institution sets up its own activities to reduce the deforestation rate. Besides, there are several deforestation programs such as re-plantation or reforestation through a program called National Effort to Rehabilitate Forest and Land, dated back since 2003. At the institutional level, several institutions have implemented deforestation-preventing activities to reduce the deforestation, among others are Department of Forestry, Indonesian Military, NGOs and other related institutions.

4.2.4 Constraints

There are some constraints in the efforts to reduce and to halt deforestation rate, one of them is the low of awareness, understanding and concern from the related stakeholders. Most of the society are lacking of the awareness and understanding regarding the impacts of the deforestation in their daily activities as the asset of development. Most of the stakeholders only recognize the short term productive value of a natural resource. As an example, the loggers only recognize a forested area as a source of tradable timbers and they do not know the value of the environmental service. The lack of understanding on this long term value leads to a no concern attitude and the destruction of biodiversity resource. Greediness is also another factor of this lack of concern.

Another constraint derives from the excessive use, collection of forest products and illegal logging. The exploitation of natural resources often disregards the environmental carrying capacity. For an example, an excessive exploitation of several type of forest timbers, such as from the Dipterocarpaceae family or Meranti. Nowadays, it is difficult to find a tree from Meranti group in a production forest on account of its excessive exploitation especially those with a diameter of more then 50 cm to fulfill timber demand from domestic and international market. The Citra Landsat data of the Department of Forestry stated that during 1997 and 1999 an excessive exploitation occurred mostly in production forests. Of the 46.7 million hectares of production forest, only 41% remained as a primary forest, 29% as good and moderate ex logging areas, and the remaining 30% as destructed forested areas. An example of a detrimental illegal collection and trading applies to robbery and illegal logging that inflict the nation's financial loss to the amount of Rp. 30.42 billion per annum. Environmental and social losses inflicted from these activities are difficult to measure, even though they are not less important.

4.3 Land, Coastal and Marine Degradation

4.3.1 Definition

Land degradation is a reduction or a land productivity loss in regards to its physical, chemical, biological and economic characteristics, as well as its land complexity as rain receptor, irrigating land, or as savanna, flock tending area, natural forest and plantation forest; as consequences of land use or a process or a combination of processes, including man-made processes, such as:

- Land clearing
- Deforestation
- Land conversion for another usage
- Irrigation
- Pollution
- Soil erosion caused by wind and or water
- Nutrient depletion
- Acidification
- Salinization

- Sodification/alkalinization
- Land compaction
- Loss of organic matter
- Subsidence
- Soil structure destruction
- Desertification
- Long term natural vegetation loss

Comment [TP3]: Apa ini?

4.3.2 Existing condition

People living in the area suffering from land deterioration are opposing several threats, such as deterioration (loss) of soil fertility, shortage of water resources, famine, and epidemic. Global land degradation threatens the existence of biodiversity and results in global warming.

Coastal and marine degradation includes as follows:

- Over-fishing
- Abrasion, sedimentation
- Pollution, ballast waste, solid waste and aircraft accident
- Corral reefs, mangrove deterioration.
- Sea sand exploration, land dredging and costal reclamation.

Constituting of 17,508 islands and 81,000 km of costal lines, Indonesia is endowed with uncountable natural resources. The conversion processes of costal area and mangrove forest took place naturally and artificially (man-made). Several costal landscapes, including mangrove forest living along the sea or river shore are affected by the mixture of river water and saline-contained sea water.

Basically, coastal zone is a transition area between land and marine area. According to a physiographic definition, it corresponds to an area from a coastal line heading to tideland, where coastal and sea bottom slopes (%) determine its width, a formation of clay and loose sand sediment, mixed with gravel.

Coastal zone space is a space between land and its adjacent marine territory. Land space located above and below land surface contains

aquatic land and the lowest side of marine line. While marine space lies above and below the sea surface, starting from the lowest side marine line, including sea bottom and any earth part below it.

Comment [TP4]: Perairan darat

Coastal refers to a plain area or a bumpy area with a height difference not more than 200 m, created by loose sediments from the sea and river. To have dry part (land) and wet part (swamp) is its characteristic. Coastal line is characterized by the existence of a borderline connecting seawater and land. Therefore, coastal line position is impermanent and can be moved (walking land or walking vegetation) in accordance with the tide-subsidence of sea water and coastal abrasion or sludge deposition.

Comment [TP5]: Pasang-surut inggrisnya apa?

In general, biogeography and hydrodynamic characteristics affects the nature/type of coastal zone, vegetation, area and distribution of mangrove forest in a certain area. Several coastal areas in Indonesia share commonalities and or differences on climate factors, water temperatures, sedimentation level, water tide-subsidence level, relief, protection against tidal and wind abrasion, water salinity and geological history. Therefore, exploration of this area is in conformity with its capacity.

Based on the carrying capacity, assimilative capacity and an appropriate utilization, coastal area and mangrove forest become the focus of natural resource exploitation and environmental pollution along with the economic-based development efforts. When the economic gains increase, the more severe is the environmental/ecological impact it inflicts. On contrary, less economic gains lead to less damage on the environment.

We can identify the environmental impacts when coastal degradation exists and the area of mangrove forest dwindles. The environmental damages result in coastal erosion/abrasion, loss of coastal borderline and decline or destruction of biodiversity or fauna and its habitats.

Society living in the degraded mangrove forest suffers from an economic and welfare drawback. Destruction of mangrove forest and of the coastal environment adversely affects the fishing yield and reduces fishermen' income who live in coastal village. The population census in 1991 revealed that coastal villages were considered as poor areas.

Forest mangroves converted into shrimp ponds and fish ponds in the Northern part of Java Island, Eastern part of Sumatra Island and South Celebes coastal lines, usually experienced an optimal harvest in the first five years. After that, the ponds were not productive anymore and were left unmanaged, and thus becoming critical lands.

The area of mangrove forest dwindles 1.1% per annum. Based on the latest forest mangrove data (National Forest Inventory Project in 1993), the area of mangrove forest declined to 4.25 million hectares in 1982, while in 1993 it remained only 3.7 million hectares.

Efforts to understand, to comprehend, to be aware of and to love the coastal area and the mangrove forest ecosystem arose on account of problems of the natural resource exploitation in the coastal area, such as uncontrolled coral reefs management, decorative fishes, mangrove forests, turtles, and protected fishes. Consequently, the need to use the coastal area effectively sprang and nourished, taking into consideration the sustainability aspects of the natural resources and the environmental conservation.

The existing degradation affects the sustainable development related to issues of poverty, health, and malnutrition, food stocks deficiency, migration problems when a person moves from one place to another, and the demographic movement.

Environmental degradation contributes to biodiversity problems resulted in a growth decline of flora and fauna diversity (even small organisms). Besides, it also contributes to climate change since a degraded land results in difficulty for a tree to re-grow, thus reducing the GHG emission that a tree may absorb.

4.3.3 Existing Capacity

Several institutions dealing with land, coastal, and marine degradation have developed their own programs and activities, such as Department of Marine and Fishery (DMF) with its marine and fishery strategic plans set up in 2000; a working program for the exploitation and conservation of marine and coastal area. Besides, DMF in cooperation with IPB and LIP

have developed a national policy and strategy concept on coral reef management.

Given its multifunction and diversity in nature, the coastal environment requires an integral environmental management that can be comprehensively put in practice in its entire processes, starting from research to implementation and monitoring activities. Given this, a need to have an instrument to harmonize all activities is identified. The best instrument lies on the availability of an integrated plan and management on the coastal area and mangrove forest, equipped with a comprehensive and detailed information network through an accurate information supply. A Geographic Information System (GIS) on coastal area (land and marine) supporting the information supply program serves as an instrument to manage the exploitation of natural resources in coastal area and mangrove forest optimally.

The government has completed a General Plan on Coastal Spatial Planning, an Agreed Forest Planning; these two are in harmony, Land Rehabilitation and Conservation Pattern through the provision of geographic information and its integration with Land Resources Evaluation and Planning Project (LREPP), Marine Resources Evaluation Project (MREP), Coral Reef Rehabilitation and Management Project (COREMAP), Indonesia Coastal Environment Management Planning (ICEMP) and Indonesia Marine Biodiversity.

Comment [TP6]: Rencana Umum Tata Ruang Wilayah

Comment [TP7]: Tata Guna Kesepakatan

4.3.4 Constraints

Lack of awareness, understanding and low of concern on the financial loss of land, coastal and marine degradation results in a short term natural resource exploitation by the related stakeholders. For an example, the coastal society only regards the marine and coastal resources as their food stocks and it is only limited to fish, without realizing their other meaning or function.

There was a tendency of an excessive fishing on certain types of fish in several marine areas in Indonesia. For an example, exploitation of shrimps from Pedaeidae family has reached 60% of the average sustainable yield

(MSY). Besides, the use of technology, techniques or instruments in the use of biodiversity results in the ecosystem deterioration. There are several instruments destroying coastal biodiversity, such as the use of fish collecting tools, explosives, poisoning materials and tiger prowl. The degree of destruction often exceeded tidal destruction, since the prowl used to catch shrimps were 20 m of width and it could grind the sea bottom to the area of 1 km² within 1 hour.

Comment [TP8]: Apa ini MSY??

Comment [TP9]: Pukat harimau

4.4 Drought and Flood

4.4.1 Definition

Flood and drought are two natural phenomenon taking place in Indonesia where rainfall condition affects each of them. Flood is a result of an excessive rainfall (rainy season) , while drought is a result of limited rainfall and water resources condition (dry season). These two phenomenon adversely affect the livelihood of a society. An incorrect water conversion is the major cause of this phenomenon.

Drought is defined as a natural phenomenon where the rainfalls do not reach the normal standard, causing hydrologic instability that affects water resource production system.

Flood is defined as an excessive rainfall condition retained in land surface in a relatively long period as a consequence of a positive water balance.

4.4.2 Existing Condition

Society is often experiencing water scarcity issue, especially when dry season arrives. The needs of water increases along with the population increase, a massive growth of industrialization and of the housing sector, as well as the energy sector, that is, electricity. For your information, to fulfill the needs for drinking, cooking and other needs, a person needs approximately 2,600 liter/capita/day of water or is equivalent with 950 m³/capita/annum. Even though the surface water potential (especially rivers) in Indonesia reaches approximately 15,500 m³/capita/annum, the

availability varies in place and time. Java island consisting with 65% of total Indonesian population, only can provide 4,5% of the national fresh water capacity. Also, water resources fluctuate along the wet and dry seasons. As an example, the rate of water flow from Cimanuk River reaches 600 m³/second, but it is only 20m³/second during the dry season (Roestam Sjarif, 2003).

Meanwhile, the supporting areas expected to permeate water into soil have suffered from deterioration and critical lands also expands widely, resulting in water scarcity. Critical lands in Indonesia have aggressively extended, from 11.3 million hectares in 1993 to 23.7 million hectares in 2000 (www.dephut.go.id). The number of critical River Catchment Areas (RCA) has increased and also does their dispersion number. In 1984, there were 22 critical RCAs and only within 14 years, exactly in 1998, the number reached to 59 RCAs (Roestam Sjarif, 2003).

Comment [TP10]: Daerah Tangkapan Air, bener gak inggrisnya?

Illegal logging in the supporting areas and other causes converting RCAs function are the starting points of a massive water loss in terms of surface runoff; a resource that society should conserve and use. The fact reveals that the water deficit areas are experiencing an increase of water deficiency or a decline in water resources. The drying out of water pouches in the RCAs basin serves as a real indicator of the loss of the hydrological function in the respective RCA.

The existing floods resulted in severe damages along with the increase number of floods as a result of the change in rainfall pattern and land use change. The conversion of forested areas into others is the major cause of the change in the rainfall pattern, which is a result of global climate change and the land use change in general. Land use contributes to the change of RCA hydrology and severely affects the impacts inflicted by flood.

The aggressive population increase, the massive development of industrial and housing sectors and other water consuming sectors result in an increase demand of water. The decrease of water quality as a consequence of pollution even aggravates the scarcity condition of water to fulfill people's needs. The need to have hydropower to support

electricity generation will increase along with the massive growth of industrial sector and households needs.

The likelihood of flood to occur during the rainy season increases and the impacts is becoming more severe, while water scarcity issue during dry season also increases. Based on the fact, Java Island with its water supply capacity of 30,569.2 million m³/annum is not able to quantitatively fulfill the water needs for the entire population. This highest population density island has always been experiencing water deficit from 1995 until 2015, and the deficit grows larger. Other areas are experiencing surplus in the same period, but the number declines along the years (Roestam Sjarief, 2003).

Water scarcity adversely affects the agricultural production system. Dry land as an important natural resource in Indonesian agriculture is challenging with water resource scarcity. Most of the agricultural areas rely on rainfall as its water resources. It is expected that 83% of the total area in Indonesia receives an annual rainfall of more than 2,000 mm (categorized as wet climate area), but that huge number of water is lacking of an efficient management (Agus et al., 2002).

Conversion of forested area into others in the RCA areas results in a change of its hydrological function. Consequently, the water catchment area in the upper course of RCA dwindles, thus resulting in a decrease of water resource.

Problems on drought and flood are often associated with the destruction of the Water Catchment Areas (RCAs). RCAs deterioration in several locations in Indonesia resulted in a change of hydrological function in that RCA. RCAs supporting the catchment function have lost its function on account of its destruction. Land conversion in the catchment area, the expansion of critical lands (Department of Housing and Spatial Planning recorded 13.1 million hectares in 1992 and now 18.5 million hectares) and the spreading out of critical RCAs (there was 22 critical RCAs in 1984 and became 59 in 1998), illegal logging in the catchment areas and other factors contributing to the conversion of RCAs function are the starting points of a massive volume of water loss, in this regards, the surface run

off needs to be conserved. The facts indicate that there is an increase of water deficit in the water shortage areas or the decrease of water resource in the surplus areas. The drying out of water pouches in the RCAs basins indicates the loss of hydrological function of RCA.

The national water supply in Indonesia reaches 1,957 billion meter cube per annum. Considering the 220 million of population, the capacity reaches 8,800 meter cube per capita per annum; the number is above the global average rate with only 8,000 meter cube per capita per annum. Water supply varies depending on its location and time. More than 83 % of the surface run off is concentrated in Sumatra, Kalimantan and Papua, while the remaining 17% is in Java Bali, Celebes, and Nusa Tenggara. Java Island inheriting 7 percent of the total land area in Indonesia is only endowed with 4.5% of the total national fresh water potential. To date, 65% of the total Indonesian population inhabits the island. The figure describes that Java is prone to a water scarcity issue due to its critical carrying capacity on water resources.

When discussing the availability of water per capita per annum, we can find that Java is only able to supply 1,750 meter cube of water; the number is below the sufficiency standard, that is, 2,000 meter cube. Until 2020, it is expected that Java Island will only provide 1,200 meter cube of water per capita per annum. The critical water potential also applies to other regions, such as East Nusa Tenggara, Bali, West Nusa Tenggara and South Celebes. When the condition continues, the regions will stop their development and implementation progress on account of the excessive use of the natural resources.

Of the total water supply per annum, approximately 80 percent is available during in the five month period of rainy season, while the remaining 20% is in the seven month period of dry season. During the rainy season, most of the water flows directly to the lower course as a result of its the topographic contour, the decline of its crown vegetation, and the decline of water catchment areas on account of the high rate of land conversion. The direct flowing water has gone astray from its primary hydrological cycle, so called the combination of sub-surface flow and surface flow, to surface flow dominant leaving any substantial usage. This conversion has

Comment [TP11]: Tutupan vegetasi lahan

become an annual flood threat in several regions and also as a drought threat during dry season as experienced in Java Island.

The national water need is concentrated in Java and Bali, with the main consumption for drinking, household, urban, industry, agriculture and others. The water balance in 2003 revealed that Java and Bali needed 38.4 billion of meter cube of water in dry season, of which only 25.3 billion could be fulfilled. The deficit number is expected to grow in 2020 along with significant growth of the total population and the economic activities. To fulfill the needs on water, the government has constructed several big and moderate dams. The monitoring activities in the 14 main dams in Java indicated that those dams recorder their water level below the normal condition (dry pattern) in the dry season.

Therefore, a priority on the utilization of those dams was set up. The first priority goes to drinking water, households and urban (all major dams fulfill the need for water supply). Second priority goes for horticulture irrigation, and the third is assigned for industry and other needs. In 2003, the paddy fields located in 430,295 hectares of rice producing areas became arid due to the low supporting capacity of dams; this number included the 82,696 hectares that dried up. Besides, there were several Hydroelectric Power Plants running intermittently. The drought resulted in a decline of income, shortage of food stocks, and loss of job for the 250,000 households, as well as water scarcity in urban area.

We can draw a conclusion based on the above discussion that Java Island has a tremendous challenge in respect to water resource management in this present time. The current problem has a tendency to increase in the future. There are several water resource management programs put into action in Java, even they were dated back in the Dutch colonial time. To our concern, the proposed concepts and technical solutions have not addressed the current problems due to their complexity that require an integral management approach.

Several causes of flood and drought requiring an integral solution are low of society awareness in respect to water management, forest and water catchment area deterioration, and inconsistency in the spatial planning

efforts. This assessment was designated as a tool to address flood and drought problems in Java Island. This assessment is also expected to produce an integrated concept that can be implemented realistically. The analysis will focus on the existing condition of the water resource infrastructure and the external factors contributing significantly to it.

The deteriorating environmental condition as a consequence of deforestation and land degradation will result in the water cycle change leading to flood and drought. Deforestation and land degradation also resulted in a climate change when the rainfall pattern is unpredictable. Several locations with an increasing intensity of rainfall will result in flood and land sliding. Other areas experiencing a decrease in rainfall will result in drought.

Excessive natural resource exploitation, such as an excessive forest logging and permanent conversion from forested areas to non forested areas have dwindled biodiversity existence. The condition contributes to flood and drought since the water cycle does not run as expected (water cycle change).

4.4.3 Existing Capacity

Water conservation is essential when addressing and or reducing flood and drought problems. The existing water conservation technology components need to be re-assembled producing a package of technology by the support of data and information on the biophysical, social economy and cultural condition of society, especially farmers.

The re-management of RACs is essential to restore their function as supporting areas able to permeate water; thus increasing water resource to fulfill the needs of the society. There is also a need to appoint a protected area to conserve water by support of a strong governmental lobbying. The reforestation of an open area in RCAs slopes is expected to increase water absorption and water resource in the dry season.

Several water conservation techniques such as the exploration of water reservoir, penetration well, *rorak*, dams, ditches, or other method to reduce evaporation such as using mulch are the applied water

Comment [TP12]: Sumur resapan

Comment [TP13]: Apa itu rorak??

conservation techniques. Water loss by means of evaporation can be controlled by using mulch. In the water conservation scheme, society can use of those technologies efficiently when they themselves manage the technologies with support of governmental facilitation. Another important consideration lies on the benefits (especially economic) that the proposed technologies render to the society. An experience in Selopamioro, Yogyakarta revealed that a micro water reservoir technology is applicable when it is in harmony with agro-ecology and provides economic gains to farmers (Irawan et al., 1999).

Institution plays an important role in the dissemination of water conservation efforts. A community based in the implementation of water conservation technology is worthy to develop.

To increase land productivity through an efficient use of supplemental irrigation in the parched and sloppy area of the upper course of RCAs, a water conservation effort is needed to increase water resource as the main water supply for the irrigation. The construction of penetration wells, *rorak* and water reservoir are another applicable alternatives. The implementation of water conservation technology requires an actualization in terms of an institutional framework and a farmer community based approach to guarantee the sustainability of the technological implementation.

Comment [TP14]: Apa itu rorak?

The support of policies, rules and laws in the natural resources management, especially the water conservation, will give society a guarantee of their rights on water and their responsibilities on water resource management. In the future, society is expected to put more concern and to participate actively in the water resource management. A harmony between regions and institutions in the water resource management must exist especially in RCA management. One RCA may consist of more than one region, and its management should come from the same roof.

Flood and drought taking place in the lower course of RCA is a result of the hydrological change in its upper part. Any water conservation practices in the upper course engage an amount of money that society living in the

lower part can not bear. Water conservation practices require a certain amount of contribution from society living in the upper course to those in the lower course. Therefore, a regulation is needed to make it into practice.

4.4.4 Constraints

Water conservation technologies are not popular in society because they are money consuming while the results are not directly feasible. Consequently, there is only a slight opportunity to put the technologies into practice. To date, society especially farmers need a support in terms of subsidy to implement water conservation technologies. The technologies generated and implemented under a governmental project only runs when the project exists. After the project reaches its completion, the technology is not put into practice anymore.

CHAPTER V

PROCEDURE ON

CROSS CUTTING ASSESSMENT

NCSA team carried out these following activities in the implementation of cross cutting assessment:

1. Expert meeting
2. Working group members meeting
3. Data collection
4. Report writing

5.1 Expert Meeting

5.1.1 Introduction

The goal of expert meetings were to put ideas or methods to implement the cross thematic assessment in harmony. We considered them crucial since the finalization of thematic assessment resulted in the lack of data and information that could support the cross cutting assessment processes.

During the meetings, there were several main issues that the experts focused on, such as:

Data support, the thematic assessment produced a generally described result not a detailed one as expected. We did not know whether it was a result of no data kept by the related institutions nor the team knew where it was stored, so that the report was general.

5.1.2 Agenda

There were four agendas to be accomplished in this meeting, such as:

- 1) Determination of aspects needed to be implemented in the cross cutting assessment.
 - Cross-cutting requirements under the conventions.
 - Cross-cutting capacity constraints.

- Cross-cutting capacity needs.
 - Cross-cutting opportunities.
 - Cross-cutting natural resource management problems.
- 2) Determination of Cross-cutting capacity constraints.
 - 3) Determination of Cross-cutting requirements.
 - 4) Determination of Cross-cutting capacity.
 - 5) Determination of Cross-cutting Natural resource management problems.

5.1.2 Discussion

Topic 1: Aspect Determination

It was agreed that the UNDP Guide version KL was used as the main basis in the implementation of Cross-cutting assessment. While Unitar guideline served as a complement in the analysis phase. In general, the Cross-cutting assessment analysis consisted of these following aspects:

Assessment of capacity to meet priority that cuts across the three conventions:

- 1) Based on the three thematic assessments and on table 1, list and describe overlapping requirements of the three conventions.
- 2) Select priority overlapping requirements.
- 3) Define and describe the requirements in terms of all three conventions.
- 4) Describe and assess the status of the five capacity performance functions.
- 5) Describe the existing and needed capacity at the system/institutional and individual levels.
- 6) Clarify the underlying causes of the failure to meet the requirements.
- 7) Describe the impact of weak capacity on the implementation of each of the three conventions.
- 8) Describe any opportunity, point where synergies and economy of scale can be generated by taking cross-cutting and measures, even if no specific capacity constraint or gap has been identified.

Comment [TP15]: Maksud kalimat?

Assessment of cross-cutting capacity constraints:

- 1) Based on the three thematic assessment and capacity performance functions (table 2), select priority on capacity weakness.
- 2) Describe and assess the capacity situation. Assess the individual, institutional and system situation.

- 3) Describe the needs, gaps, constraints and opportunities. Clarify the underlying causes.
- 4) Describe the impacts on the implementation of the three conventions.

Based on the cross-cutting analysis as mentioned above, the assessment accommodated all aspects written on topic-1. Therefore, this meeting reached an agreement that those aspects were to be used in the Cross-cutting assessment.

- Cross-cutting requirements under the conventions.
- Cross-cutting capacity constraints.
- Cross-cutting capacity needs.
- Cross-cutting opportunities.
- Cross-cutting natural resource management problems.

Topic-2: Determination of Cross Cutting Capacity Constraints

Prior to the determination of the cross-cutting capacity constraints, an identification of each common constraint was formulated using a weighing method, as follows:

In the beginning, a variable is considered as a common capacity constraint when the variable exists in the entire issue (all of those five issues). There is an interesting figure, when a variable exists in the three issues or even four issues. The meeting agreed to set a variable as a common capacity constraint when the variable exists in three issues at minimum.

The discussion of this topic resulted in common capacity constraints of each convention as seen in the following table:

Table 5.1: Matrix of Common Capacity Constraints UNCBD

Priority Issue	Level		
	Systemic	Institutional	Individual
Issue number 1	Contextual framework Institutions and laws Participation, accountability and transparency	Corporate governance Corporate strategy Resource Management Operational	Job requirements Monitoring Performance Skill Development

		Management Quality Assurance Staff Quality	
Issue number 2	Contextual framework Institutions and laws Participation, accountability and transparency	Resource Management Operational Management	Skill Development
Issue number 3	Contextual framework Institutions and laws Participation, accountability and transparency Authority level Property rights and tenure Market and financial flows Science and risk	Corporate governance Corporate strategy Resource Management Operational Management Quality Assurance Staff Quality	Job requirements Monitoring Performance Incentives Skill Development
Issue number 4	Contextual framework Institutions and laws Participation, accountability and transparency Authority level Property rights and tenure Market and financial flows Science and risk	Corporate governance Corporate strategy Resource Management Operational Management Quality Assurance Staff Quality	Job requirements Monitoring Performance Incentives Skill Development
Issue number 5	Contextual framework Institutions and laws Participation, accountability and transparency Authority level Property rights and tenure Market and financial flows	Corporate governance Corporate strategy Resource Management Operational Management Quality Assurance Staff Quality	Job requirements Monitoring Performance Skill Development

	Science and risk		
Common Capacity Constraints	Contextual framework Institutions and laws Participation, accountability and transparency Authority level Property rights and tenure Market and financial flows Science and risk	Corporate governance Corporate strategy Resource Management Operational Management Quality Assurance Staff Quality	Job requirements Monitoring Performance Incentives Skill Development

Source: Result of NCSA Team Analysis, 2005

Table 5.2: Matrix on Common Capacity Constraints UNFCCC

Priority Issue	Level		
	Systemic	Institutional	Individual
Issue number 1	Contextual framework Institutions and laws Authority level Science and risk	Corporate governance Corporate strategy Resource Management Operational Management Staff Quality	Job requirements Skill Development
Issue number 2	Contextual framework Institutions and laws Participation, accountability and transparency Authority level Science and risk	Corporate governance Corporate strategy Resource Management Operational Management Quality Assurance Staff Quality	Job requirements Monitoring Performance Skill Development
Issue number 3	Contextual framework Institutions and laws Participation, accountability and transparency Authority level	Corporate governance Corporate strategy Resource Management Operational Management	Job requirements Monitoring Performance Skill Development

	Science and risk	Quality Assurance Staff Quality	
Issue number 4	Contextual framework Institutions and laws Participation, accountability and transparency Authority level Science and risk	Corporate governance Corporate strategy Resource Management Operational Management Quality Assurance Staff Quality	Job requirements Monitoring Performance Skill Development
Issue number 5	Contextual framework Institutions and laws Participation, accountability and transparency Authority level Science and risk	Corporate governance Corporate strategy Resource Management Operational Management Quality Assurance Staff Quality	Job requirements Monitoring Performance Skill Development
Common Capacity Constraints	Contextual framework Institutions and laws Participation, accountability and transparency Authority level Science and risk	Corporate governance Corporate strategy Resource Management Operational Management Quality Assurance Staff Quality	Job requirements Monitoring Performance Skill Development

Source: Result of NCSA Team Analysis, 2005

Table 5.3: Matrix of Common Capacity Constraints UNCCD

Priority Issue	Level		
	Systemic	Institutional	Individual
Issue number 1	Institutions and laws	Corporate governance Corporate strategy Resource Management Operational Management	Job requirements Monitoring Performance Incentives Skill Development

		Quality Assurance Staff Quality	
Issue number 2	Institutions and laws	Corporate governance Corporate strategy Resource Management Operational Management Quality Assurance Staff Quality	Job requirements Monitoring Performance Incentives Skill Development
Issue number 3	Institutions and laws Science and risk	Corporate governance Corporate strategy Resource Management Operational Management Quality Assurance Staff Quality	Job requirements Monitoring Performance Incentives Skill Development
Issue number 4	Contextual framework Institutions and laws	Corporate governance Corporate strategy Resource Management Operational Management Quality Assurance Staff Quality	Job requirements Monitoring Performance Incentives Skill Development
Issue number 5	Institutions and laws Participation, accountability and transparency Market and financial flows Science and risk	Corporate governance Corporate strategy Resource Management Operational Management Quality Assurance Staff Quality	Job requirements Monitoring Performance Incentives Skill Development
Common Capacity Constraints	Institutions and laws	Corporate governance Corporate strategy Resource Management Operational	Job requirements Monitoring Performance Incentives Skill Development

		Management Quality Assurance Staff Quality	
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Source: Result of NCSA Team Analysis, 2005

Meanwhile the UNDP guideline provides several examples of variables expected to indicate the cross-cutting capacity constraints (Unitar Guideline, 2001 page 31). Those variables are associated with weaknesses in each respective variable at every level (table).

Comment [TP16]: Berapa?

Taking that list into consideration, we found an equivalent weakness for each selected variable of the common capacity constraints in each convention (table 5.1; table 5.2 and table 5.3). Based on expert judgment, we formulated the result of Common Capacity Constraints and their weaknesses, as seen in table 5.4. below.

Comment [TP17]: Setara maksudnya equal atau similar?

Table 5.4: Common Capacity Constraints and Weakness

Level	Common Capacity Constraints	Weakness
System	<ul style="list-style-type: none"> • Contextual framework • Institutions and laws • Participation, accountability and transparency • Authority level • Market and financial flows • Science and risk 	National policy, laws and legal framework
Institution	<ul style="list-style-type: none"> • Contextual framework • Institutions and laws • Participation, accountability and transparency • Authority level • Market and financial flows • Science and risk 	<ol style="list-style-type: none"> 1. Cooperation and networks among regions/areas 2. Institutional mandate, coordination and interacting processes, coordination among stakeholders. 3. Financial sources and technology transfer

		4. Awareness and transfer of information
Individual	<ul style="list-style-type: none"> • Job requirements • Monitoring performance • Skill development 	<ol style="list-style-type: none"> 1. Individual expertise and motivation 2. Awareness and transfer of information

Source: Result of NCSA Discussion, 2005.

Topic-3: Determination of Cross-Cutting Requirements

Annex C Unitar, Guideline, 2001 page 44 served as the basis for the determination of cross-cutting requirements, of which 8 (eight) Cross-cutting requirements are identified. By taking those variables into account, the experts agreed to select five variables expected to become the priority of Cross-cutting requirements. The result of the determination and evaluation of those five variables are formulated on table 5.5.

Table 5.5: Cross-Cutting Requirements

Priority of the Cross Cutting Requirements	UNCBD	UNFCCC	UNCCD
(1) Legislation	Article 8(k)	Preamble	Article 16
(2) National & regional action plans	Article 6(a,b)	Article 4(b)	Article 9,10
(3) Public education + training	Article 13, 12(a)	Article 6	Article 5(d), 6, 19
(4) Public participation	Article 9	Article 6(i), a(ii)	Article 19(4)
(5) Information exchange	Article 17	Article 7	Article 16

Topic-4: Determination of Cross-Cutting Natural Resource Management Problems

In determining the Cross-Cutting Natural Resource Management Problems we used a brainstorming method. The discussion results to determine the Cross-Cutting Natural Resource Management Problems are as follows:

- (1) Illegal logging (law enforcement);
- (2) Flood/erosion/land degradation;
- (3) Drought.

5.2 Working Group Meetings

5.2.1 Introduction

The Working Group meetings (WG meetings) were carried out x times in the second tri semester of the year 2005. The working group meetings were part of an important series in the NCSA processes.

Comment [TP18]: Masih kosong angka

According to the working plan on the finalization of the Cross-Cutting Assessment in the ongoing second tri-semester, 2005, the first working group discussed the following issues:

- 1) Method on the implementation of the Cross-Cutting Assessment
- 2) Report Writing Plan on Cross-Cutting Assessment
- 3) Finalization of the thematic assessment.

These following items were made available as the discussion material in the first working group:

- 1) Expert Meeting Summary
- 2) Draft report on the Cross-Cutting Assessment
- 3) Copy of the implementing guideline for thematic assessment from UNDP guideline
- 4) Key summary of the thematic assessment.

For your information, we have considered a need to finalize the implementation capacity data for the three conventions, the biodiversity convention (UNCBD), the climate change convention (UNFCCC), and the land degradation convention (UNCCD). We can see the issue from the

discussion of the thematic assessment as it is generally described, but not in detailed as expected.

5.2.2 Goals

We initiated working group meetings to discuss the three subject matters as mentioned above, with the following targets:

- 1) Accomplishing an agreement among the working group members regarding the method on the implementation of the cross-cutting assessment.
- 2) Accomplishing an agreement among the working group members regarding the reporting type of the Cross-Cutting Assessment.
- 3) Accomplishing a commitment among the working group members to contribute to the finalization of the thematic assessment, in terms of data and related information.

5.2.3 Discussion

Several topics were discussed especially those related to the finalization of the thematic assessment. In general, the working group members accepted the method on the implementation of the cross-cutting assessment, because the method was adjusted to the guideline. Followings are some important discussion items:

- 1) It was expected that the CAA content was synchronized with the BAPPENAS-produced IBSAP. Doing this, there would be an equality in the implementation of the three conventions.
- 2) In general, it suffices to say that the existing national policies regarding the three conventions are sufficient. But the technical practices were still inadequate, especially those related to the infrastructural supports resulted in poor implementation. For an example, there is a need to utilize the *ipteknet* and its network optimally to disseminate information for the implementation of the three conventions.
- 3) Aspect determination was sufficient but in practical terms the regulations were overlapping. The policy was partial and suffered from a weak coordination while the respective institution carried out almost similar program. Lack of dissemination for the three conventions and the unknown of MOE activities in the regional level were the underlying causes.

Comment [TP19]: Ipteknet dianggap program

- 4) The renewable energy law seemed to overlap from one to another institution. Therefore, the government has put an effort to produce an integrated energy law.
- 5) CC requirements under the convention needs to include research because the variable is crucially needed in the efforts to improve the capacity to implement the three conventions.
- 6) Research on marine was very limited that we considered a need to change the existing paradigm. It was reflected on the non existence of database regarding the implementation of UNFCCC in Indonesia and on the low of network for the convention.
- 7) Thematic Assessment on FCCC should include article 2 & 4(2,3). An adaptation definition should be added along with the mitigation measures and can be used in CDM. Meanwhile, we considered a need to finalize the discussion on adaptation policy options.
- 8) Cross-Cutting capacity constraints should include the description of participation, accountability mechanism at the institutional level, as reflected from the existing condition where not all institutions publicize that issue. Corporate public accountability that every stakeholders implemented needed to be written in a report.
- 9) Cross-cutting capacity constraints required a hierarchical framework in its determination. Besides, technology development with a research support should be prioritized. Early Warning System should be improved, so that society really understood it. Given this issue, there should be a **SKB** that can minimize the over-lapping, especially in the four Departments: Department of Agriculture, MOE, Department of Forestry.
- 10) NCSA was initiated to improve services towards the conventions. But it is expected that the result is far beyond what the three conventions need, resulting in a far reaching target, an environmental protection in Indonesia.
- 11) Regions were not truly understand Indonesian Biodiversity Strategy and Action Plan (IBSAP). The remaining questions lies on whether the issue is poorly disseminated or the inappropriate use of the method.
- 12) The working group network has not run optimally in terms of understanding the existing conventions.
- 13) Government needs to address legislation issue.

Comment [TP20]: Apa ini SKB?

- 14) Government is lacking of sufficient funds to improve human resource capacity, resulting in appropriate designation of the scholarship grantees. It is still in question whether we have assessed the impacts of those regulations.
- 15) Legislation is still immature, so that it needs an optimum discourse and skill development. The discussion on staff recruitment was still non-transparent and was partially implemented, therefore it needed a thorough focus. To guarantee his or her activity for implementing the conventions, a governmental employee received an incentive but it was below the standard.
- 16) NCSA and IBSAP share a different implementation method resulting in priority difference and individual in the stakeholder group differs one to each other. The report content can be developed along with the needs in Indonesia.
- 17) The overlapping research public accountability regulations need to be reassessed.
- 18) Skill development should include marine issues since our marine natural resources suffered from a deterioration. This is in line with the statement of the UN secretary general who expected a sound reason subject to our marine deterioration.
- 19) National program is much more important than a project.

5.3 Data Collection

We understood that the stock taking and thematic assessment results reflect the general situation. The key foundation of the cross-cutting assessment lies on the information and data as reported in the thematic assessment report. Given this, we are expecting to have a data elaboration and addition to finalize the thematic assessment.

Data and information collected in this phase was only to fulfill the result of the cross cutting assessment, those related to CC requirements, CC constraints, weakness and opportunities, and specific data on the management of environmental problems.

There were several methods of data collection: investigation and interview. Investigation was aimed at gaining data/information stored in terms of

reports, assessments and other kind of media. Interview was aimed to get a primary data from the respondents.

To accelerate the access to the needed data/information, the respondents received a copy of the thematic assessment and the draft report on the cross-cutting assessment.

5.4 Report Writing

Report writing is the essence of the whole NCSA activities in this tri-semester. In regards to the report writing |

Comment [TP21]: Habis.....