APPENDICES

with the Advice on guidelines on
Environmental Impact Assess-
ment of land reclamation projects
in the Philippines

(appendices A to H)

APPENDIX A

Letter from Royal Netherlands Embassy dated 18 June 1998 in which the Commission has been asked to submit an advice

FROM : ROYAL NETHERLAND EMBASSY PHONE NO. : 632 4013565 Jun. 18 1998 11:18AM F

032-95

AMBASSADE VAN HET KONINKRIJK DER NEDERLANDEN
Royal Netherlands Embassy

F A X B E R I C H T

DATUM	:	18 juni 1998
AANTAL PAGINAS	:	2 (inclusief deze pagina)
VAN	:	OS/Manilla
FAX NUMMER	:	63(2) 815-4579
AAN	:	Commissie voor de Milieu Effect Rapportage
T.A.V.	:	A. Kolhoff
FAX NUMMER	:	31.30.2304382
ONZE REF	:	# MAN/OS

Onderwerp: Advies MER inzake milieuprojecten Filipijnen

Met verwijzing naar uw bericht van 4 juni 1998, alsmede het telefoongesprek met Hoofd OS, de heer Teunissen, op 12 juni jl. betreffende de follow-up van het MER-advies, gaarne uw aandacht voor het volgende.
De ambassade maakt graag gebruik van het aanbod door de MER gedaan om betrokken te blijven bij de follow-up van het MER-advies. Wat betreft het Laguna de Bay project heeft Hoofd OS telefonisch kontakt gehad met de heer J. de Schutter en hem gevraagd de ambassade een begroting te sturen en de TOR aan te passen, zodat duidelijker wordt welke activiteiten dienen te worden ondernomen. Op basis daarvan kan vervolgens het contract (bilateraal) worden opgesteld. Het GeoCES project wordt nog even buiten beschouwing gelaten, ook vanwege de status van dat projectvoorstel.

Wat betreft het Guidelines-project zou de ambassade graag zien dat de MER het gedeelte A nader uitwerkt ("Guidelines on environmental impact assessment of land reclamation projects"). Alvorens de ambassade een overeenkomst met de MER kan sluiten hieromtrent, dient u een begroting in te dienen met daarin aangegeven de tijdbesteding, wie het werk zullen uitvoeren en de daarmee gemoeide kosten. Het door u in te vullen begrotingsformulier treft u hierbij aan. Op basis daarvan kan vervolgens het contract worden opgesteld. Ook graag aangeven wie namens de MER deze overeenkomst zal ondertekenen.

Na ontvangst van uw bijdrage zal de ambassade (vermoedelijk Hoofd OS na terugkeer van zomerverlof) met DENR overleggen hoe verder te gaan, mede in verband met hun eigen bijdrage. Hetzelfde geldt ten aanzien van het Laguna de Bay project: bespreking Hoofd OS (na zomerverlof) met de heer C. Tomboc, General Manager van LLDA.

9th Fl. King's Court I, 2129 Pasong Tamo, Makati, Metro Manila, The Philippines,
mailing address: P.O.Box 2448 MCPO, 1264 Makati, Metro Manila, The Philippines.
Tel. (632) 812.5981/82/83, 811.2213, Economic Section. 811.2769, Fax (632) 815.4579. e-mail nlgovman@qinet.net.

APPENDIX B

Project information

Proposed activity: The Dutch embassy in the Philippines has asked the Commission to advise on Terms of Reference for EIA studies for land reclamation projects in the Philippines.

Categories: Land development and reclamation, DAC CRS code 91082

Project numbers: The Royal Netherlands Embassy MAN/OS; Commission for EIA 035

Procedural information:
Request for advice: 18 June 1998
Advice submitted: 27 September 1999

Members of the working group:
Mr R.W. van Oostrum
Mr J.G.L. de Schutter
Mr J.H.J. Terwindt
Mr D. de Zeeuw (chairman)

Secretary of the working group: Mr A.J. Kolhoff

APPENDIX C

List of environmentally critical projects and environmentally critical areas. In: Procedural manual for DAO 96-37, by the Department of Environmental and Natural Resources, January 1995

Environmentally Critical Projects

a. Heavy Industries
   1. non-ferrous metal industries
   2. iron and steel mills
   3. smelting plants
   4. petroleum and petri-chemical industries, including oil and gas

b. Resource Extractive Industries
   1. major mining and quarrying projects
   2. forestry projects
      - logging
      - forest occupancy
      - extraction of mangrove products
      - major wood processing projects
      - forest occupancy
      - grazing
      - introduction of fauna (exotic animals) in public/private forests
   3. dikes for/and fishpond development projects

c. Infrastructure Projects
   1. major dams
   2. major roads and bridges
   3. major power plants (fossil-fuelled, nuclear, coal-fired, hydroelectric, geothermal)
   4. major reclamation projects

d. Golf Course projects

Environmentally Critical Areas

a. All areas declared by law as national parks, watershed reserves, wildlife preserves and sanctuaries.
b. Areas set aside as aesthetic potential tourist spots.
c. Areas which constitute the habitat for any endangered or threatened species of indigenous Philippine wildlife (flora and fauna).
d. Areas of unique historic archaeological or scientific interest.
e. Areas which are traditionally occupied by cultural communities or tribes (indigenous cultural communities).
f. Areas frequently visited and/or hard-hit by natural calamities (geological hazards, floods, typhoons, volcanic activity, etc.).
g. Areas with critical slopes.
h. Areas classified as prime agricultural lands.
i. Recharged areas of aquifers.
j. Water bodies characterized by one or any combination of the following conditions:
   1. tapped for domestic purpose;
   2. within the controlled and/or protected areas declared by appropriate authorities;
   3. which support wildlife and fishery activities.
k. Mangrove areas characterized by one or any combination of the following conditions:
   1. with primary pristine and dense young growth;

2. adjoining mouth of major river systems;
3. near or adjacent to traditional productive fry of fishing grounds;
4. which act as natural buffers against shore erosion, strong winds and storm floods;
5. on which people are dependent for their livelihood.

l. Coral reefs characterized by one or any of the combination of the following conditions:
1. with fifty percent (50%) and above liver coralline cover;
2. spawning and nursery grounds for fish;
3. which act as natural breakwater of coastlines.

APPENDIX D

Draft Table of Contents for the EIA report

The Table of Contents can be used as a guideline for the EIA report prepared at the end of the EIA study both on site selection and on project level. The presented table describes the chapters expected in the EIA report, their purpose and their possible contents.

	Topic	Purpose	Contents
1.	Summary	*summarise in term understandable to the general public the key findings and recommendations*	non-technical brief description the EIA-report
2.	Introduction	*introduce the proposed project and the EIA including scope and purpose*	purpose of EIA, stage of the project and timing of the EIA, brief outline of the contents
3.	The proposed Project	*describe the project and is setting*	project description and history, purpose, need, legal and institutional framework and capacity
4.	Description of the Environment	*present the baseline information on the present situation and current development*	present baseline environmental situation and autonomous development (without project situation)
5.	Problem analysis	*present the problem to be addressed by the proposed project, is context and the proposed solution*	problem description, general objectives, policy setting
6.	Alternatives	*present the alternatives under consideration in the EIA Study*	site, project and activity alternatives
7.	Impact Assessment of project alternatives and evaluation	*present the analysis, assessment and evaluation of all alternatives on which the recommendations and decision making will be based*	description, assessment and evaluation of the significant environmental impacts (sources, receptors, positive, negative at local, regional and global levels) of the proposed alternatives
8.	Mitigation measures and compensation	*describe possible mitigation measures and measures to enhance environmental benefits;, how they are included in the alternatives and their consequences* *describe possible opportunities for compensation*	description of measures to mitigate negative environmental impacts including the effects of pricing, taxes etc., to protect or resettle affected people and/or to enhance environmental benefits description of measures to develop/ regenerate deteriorated or conserve valuable natural habitats
9.	Comparison of alternatives	*compare the alternatives to facilitate decision-making*	description and comparison of the alternatives in such a manner that it will provide an accurate overview/insight of impacts and facilitates decision-making
10.	Information and data	*present the necessary and available information with regard to the assessment, and decision-making*	the gaps in knowledge, data collection and availability and reliability of information/data; the consequences for the comparison of alternatives, and an evaluation of the importance risks of those gaps for decision-making

11.	Monitoring	*present the necessary monitoring measures and evaluation of survey results*	measures for monitoring and standards for evaluation of result
12.	Environmental management and training	*describe needs for management and training required during execution of the proposed project*	institutional requirements, inter-agency and public/NGO involvement, training needs
	Appendices		
a.	List of preparers	*present an overview of all people involved in the Study*	list of those directly involved in the EIA i.e. project proponent, responsible decision maker and consultant (representatives of donor organisations)
b.	Institutional and public involvement	*describe how and when parties have been involved as well as their contribution*	records of meeting and consultations, reactions and follow-up in the EIA
c.	Mitigation plan	*based on the above chapter 9 a more elaborate description of a plan for mitigation of the options*	concise plan for mitigation and monitoring during and after implementation of the project
d.	Monitoring and evaluation plan	*based on the above chapter 11 a more elaborate description of a plan for monitoring and evaluation of the options*	concise plan for monitoring including the evaluation of the survey results and possible follow-up actions
e.	Environmental management	*based on the above chapter 12 an elaborate description of needed management and training*	plan for required management and training to be conducted at the same time as the proposed project is implemented
f.	Technical reports	*to present all technical reports produced in the Study as separate background reports*	background reports to the study on specific issues like biodiversity, hydrology and social context
13.	Conclusions and recommendations	*present the overall results of the Study and conclusions/recommendations for both execution of the proposed project and decision making process*	presentation of the options including arguments, conclusions and recommendations

APPENDIX E

Outline for specific guidelines / checklists for preparation of an EIA for site selection and EIA for project level for land reclamation projects

1. Introduction

In this appendix, an outline for guidelines/checklists for aspects to be considered are provided for:
- the activity land reclamation by filling. The activities land reclamation by drainage and land reclamation by poldering are not considered;
- selected aspects to be considered for site selection EIA and for project EIA.

This guidelines/checklists, together with the guidelines in the main text of this advice, offers the author of the Guidelines document a structured and focussed set up for the preparation of this document.

The contents for an EIA as provided in appendix D has been followed for the presentation of guidelines and checklists in this appendix. For each topic/chapter it is shown for which type of EIA and for which activity the guidelines can be applied.

Guidelines for the Guidelines document
This appendix provides an outline for guidelines/checklists for selected land reclamation activities which can be used as a set up for the preparation of one of the sections of the Guidelines document. This means that the checklists/guidelines in this appendix are far from complete. In the Guidelines document these checklists/ guidelines should be made complete for the distinguished activities and distinction should be made for the following types of areas, fresh- and saline or brackish water areas. Furthermore, the guidelines in the Guidelines should be made accessible for people with limited knowledge on land reclamation by adding explanations, case studies, illustrations, figures and good practices, and in particular information on potential impacts should be described extensively.

2. The proposed activity

Guidelines on how to describe the proposed activity are provided in chapter 5.2 of the main text of the advice. In this section a checklist of aspects to be considered for the description of the proposed activity is provided.

Type of EIA - *The checklist provided in this section can be applied for a site selection EIA as well as for a project EIA.*

Activity - *Only a checklist for the activity land reclamation by filling, including dredging, is provided in this section.*

Checklist of aspects
Dredging:
- method and equipment used for dredging, including description of positioning system and depth control system;
- location of borrow area(s) on a map (scale 1:10.000);
- motivation for the selection of this location;
- indication of guarantees for sufficient availability of fill material, including measures to be taken if it turns out that the quantity is not sufficient;

- quality of fill material (indicating place, date and depth of sampling, accompanied by laboratory analysis, – with the signature of an authorized supervision official – e.g. granular, chemical, Atterberg limits, analysis according to the Dutch guidelines 'Interventiewaarden Bodemsanering', it is recommended taking samples equally distributed over the borrow area, covering the depth of the layer that will be dredged;
- duration of the dredging activity (continuous or divided in periods);
- monitoring plan.

Land reclamation by filling:

- method and equipment for transport of fill material and hydraulic filling, including floating and land-based pipelines, and tractors and bulldozers used for the spreading of the fill material;
- distance of transport (by ship and / or pipe lines);
- location of the reclamation areas (on a map with a scale of 1:5.000);
- location of temporary stockpile(s);
- measures to be taken at the stockpile site(s), preparation of the area and the clearing of the site;
- use and related finishing of the stockpile area after the construction period;
- location and design of the external bunds (dikes) for the containment of the sand, together with a description of the stability of slopes and their protection;
- measures to be taken for the maintenance of the dikes;
- estimates of soil subsidence in the reclamation areas due to the overburden of soil;
- indication of the compensation for the subsidence as well as a description of a work construction plan to implement this type of maintenance;
- description of safety measures during the construction phase.

3. Description of the environment and impacts

Guidelines on how to describe the present natural/socio-economic environment and how to determine and assess impacts are presented in chapter 5.6 of the main text of the advice. In this section, the following checklists are presented and s :

- checklist which can be used to select aspects in order to describe the natural and socio-economic environment. The same checklist can be used to describe the changes in the environment due to impacts caused by the execution of the activity.
- checklists on functions which can be used to focus the description of the present natural and socio-economic environment as these functions can be considered as final variables which should be valued in the EIA report.

Type of EIA - *The checklists provided in this section can be applied for a site selection EIA as well as for a project EIA.*

Activity - *The checklists provided in this section can be applied for all land reclamation activities .*

The link between the two checklists is shown in figure 1. The following three situations should be described:

- the state of the present functions (present state of the environment);
- the change of the present functions due to autonomous development (autonomous development);
- the change of the present functions due to impacts caused by the execution of the activities.

Figure 1: An example (simplified) of a chain of physical/environmental impacts caused by dredging and land reclamation in saline / brackish water areas.

Activity	Physical effect	Primary impact	Secondary impact	Functions
-Dredging	-Loss of marine bottom habitat	-Loss of bottom life (temporary)	↓	
			-Change in fish species diversity	-Production of fish, shrimps, shells etc.
	-Sediment dispersal in water column	-Change in visibility	↑	
	-Change in flow velocities/directions	-Change in erosion, sedimentation pattern	-Change of shore zone configuration	-Coastal protection
-Land reclamation	-Loss of habitat	-Change in fish species diversity	---	-Production of fish, shrimps, shells etc.
			↓	
			-Change in bird species population	-Life cycle migratory birds
			↓	
		---		-Tourism potential
	-Change in flow velocities/directions	-Change in erosion, sedimentation pattern	-Change of shore zone configuration	-Coastal protection
				-Suitability of water-ways for navigation

3.1 Natural and physical environment of the study area and potential impacts

Checklist of aspects to be considered

Climate:
- temperature, precipitation and wind (including extreme situations);
- risks of hurricanes and tsunamis.

Geology and geomorphology:
- offshore/coastal geology and geomorphology and topography (bottom morphology);
- stream line and coastal changes;
- bottom morphology;
- risks of eruptions of volcanoes;
- risks of earthquakes.

Hydrology of marine / coastal waters:
- depth and height contour maps;
- vertical and horizontal tides;
- wave climate;
- sediment transport patters by currents and waves;
- outflow plumes, salinity variations and stratification;
- water quality, salinity, including fresh water inputs;
- nutrient content of the water and bed sediments;

Checklist of functions to be considered

Production functions:
- production of fire wood/charcoal;
- production of secondary forest products;
- production of fish, shrimps, crabs etc.
- production of pearls, shells;
- production of game;
- water, quantity and quality;
- production of genetic resources, traditional cultivars, medicinal herbs, ornamental plants.

Carrier functions:
- suitability for production of crops;
- suitability for aquaculture, availability of water, safe and suitable land;
- tourism potential;
- nature conservation potential, unique or threatened habitats or species;
- suitability of waterways for navigation (water transport), water depth, seasonality, obstacles;

Regulation functions:
- flood attenuation and control;
- coastal protection;
- soil protection;

- temperature stratification.

Hydrology of surface waters:
- water quality; natural variability, turbidity
- flow regime of a river (peak- and low flow); volumes, variation in time and season;
- flooding regime; surface area flooded, duration;
- salt-fresh water balance (tidal/seasonal) in coastal areas (estuaries, delta's lagoons, mangroves);
- water level or - dynamics (seasonal) of reservoirs;
- hydrography (currents, tides, river water levels, salinity);
- temperature stratification of deeper water reservoirs.

Geohydrology and ground water aquifers:
- ground water table, permanent and seasonal;
- ground water physical-chemical characteristics (pollution), salinity;
- ground water reserves, use of ground water;
- underground intrusion of seawater or saline water from underlying aquifers.

Soils, sedimentation and (water) erosion:
- edaphical situation; the composition and quality of the river bed and the soil of the area to be reclaimed;
- sediment load of rivers;
- erosion of river channel beds and banks;
- sediment deposition in inland wetlands;
- sediment deposition in coastal wetlands.

Ecology;
- protected areas, protected or endangered species;
- ecosystems and their characteristic flora and fauna (terrestrial, tidal zone and marine environment);
- identification of vulnerable ecosystems and environmentally valuable areas (e.g. mangrove areas, coral reefs, sea grass fields, spawning sites for fish or specific sites for migratory birds);
- ecological requirements of main fishery resources;
- breeding conditions for water organisms (e.g. disease transmitting organisms);
- landscape (vulnerable elements and areas) and its development.
- infiltration /recharge of ground water aquifers;
- water purification by natural processes;
- sediment retention capacity;
- breeding grounds fish and shellfish;
- life cycle migratory bird species (wintering, breeding, stop-over sites);
- life cycle migratory aquatic organisms (breeding or feeding sites, migration routes);
- counteracting surface water intrusion from sea;
- counteracting the subsurface intrusion of saline water:
- water storage capacity.

Information functions:
- scenery, scenic beauty natural site valued by local inhabitants;
- natural area of particular scientific interest;
- religious function or high cultural/archeological value of a (natural) site.

Imbalances of nature:
- proliferation of aquatic weeds which obstructs waterways and deteriorates water quality.

3.2 Socioeconomic environment of the study area and potential impacts

Checklist of aspects to be considered

Demography:
- total population in the project and study area;
- population structure, sex ratio, density, growth;
- population pressure on land;
- migration of people (resettlement of people and houses).

Economic:
- employment and income situation;
- economic active population and kind of activities (e.g. fisheries);
- spatial structure, land use and physical planning of the area;
- land ownership, land prices;
- accessibility and (public) transport.

Social and living conditions:
- services quality and accessibility (water supply, waste/water disposal, energy supply);
- living conditions (noise hindrance, risk of accidents/safety situation);
- health situation (e.g. quality of the fill material)
- health services:
- actual and potential roles of women in the area.

Political:
- institutional capacity and involvement and public participation;
- informal and formal organizations of the inhabitants.

4. Problem analysis

Guidelines on the problem analysis are not provided in this section nor in the main text of the advice because this analysis is not specifically related to land reclamation.

5. Alternatives

Guidelines on how to develop alternatives for EIA for site selection and EIA at project level are presented in chapter 5.5 of the main text of the advice. In this section some suggestions for alternatives on dredging are provided.

Type of EIA - *The guidelines provided in this section can should preferably be applied for site selection of borrow areas, for a site selection EIA as well as for a project EIA.*

Activity - *The guidelines in this section can be applied for dredging only.*

Dredging:
- lay out of borrow pits, large shallow pits or small deep pits;
- phasing (season, time span) of the dredging activities may give rise to alternatives. Alternatives might be considered taking into account the preferred season in relation to fish migration, waterfowl or in relation to the availability of sediment (relationship with season).

6. Mitigating measures and compensation

A checklist and / or suggestions for mitigating- and compensating measures are not elaborated in this section. In chapter 5.6 of the main text of the advice some general guidelines are provided.

7. Comparison of alternatives

The guidelines on how to select and value final variables, and how to present the comparison of alternatives are presented in chapter 5.7 of the main text of the advice. In this section, a checklist is provided on the main aspects (criteria of change) of potential sites for land reclamation in a site selection EIA.

Type of EIA - *The guidelines provided in this section should preferably be applied for a site selection EIA.*

Activity - *The guidelines in this section can be applied for all distinguished land reclamation activities.*

Checklist of aspects

- Economic:
  - the costs for executing the activity, including the costs of environmental measures for both the public and the private sector;
  - operation and maintenance costs of the project for both the public and private sector;
  - changes (gains and losses) to the Gross Regional Product in the project area as a result of the project, including production loss of fish, shrimps, shells etc. and tourism potential.
- Environmental:
  - change in erosion and sedimentation pattern in order to know the impacts on the shore line zone / flood attenuation and control / coastal protection;
  - the occurrence of marine and terrestrial ecosystems in the study area;
  - the present quality of these ecosystems, in case of deteriorated ecosystems and the potential for recovery of those ecosystems;
  - the occurrence of rare or endangered species.
- Social:
  - the number and location of the people affected, beneficiaries as well as non-beneficiaries;
  - the need for resettlement;
  - the change of regional employment and income for different groups in the project area and study area;
  - change in the social structure and services for different groups in the project area and study area

8. Background notes on the assessment of impacts on the environmental aspects and socio-economic aspects of dredging and land reclamation by filling

Dredging, disposal and filling activities may have a variety of impacts on the environment. Whether these effects are relevant or important, will to a large extent depend on the presence of sensitive areas, (occurrence of endangered species) and/or important functions. The main impacts of dredging and disposal activities on the a-biotic environment include the creation of turbidity plumes (increased levels of suspended sediments), changes in levels of oxygen, nutrients and toxins, and changes in bottom morphology. All three have a direct effect on aquatic life. The impacts on benthic communities as a consequence of the dredging and disposal works will be more or less proportional to the areas affected. The importance of these impacts will depend on the uniqueness of the affected areas, the duration of the effects and the chances for recovery of benthic life by recolonisation.

Special attention is also paid to fish spawning or nursery areas for which mitigating measures should be developed to minimise or eliminate possible negative impacts.

The bottom morphology in the project area may change as a consequence of the creation of semi-permanent (borrow) pits and as a consequence of placing sediments at the reclamation sites and offshore disposal site in case of overburden dredging. Nature will respond to these changes by redistributing sediments in adjacent areas and by changes in current patterns.

Special attention should be paid to differences in impacts as a consequence of the layout of borrow pits, e.g. impacts of large shallow pits and small deep pits. The social and economic functions like fisheries, shipping, recreational areas, nature reserves, etc., can be affected and may differ both during and after the construction works.

APPENDIX F

Outline for environmental standards

Guideline: In this appendix a number of conventions are mentioned. These conventions contain internationally accepted environmental standards. These and other relevant conventions have to be elaborated. A number of conventions have been mentioned and one convention (Rio Convention on biological diversity 1992) has been elaborated to give the consultant an idea to which detail the conventions have to be worked out. It should be addressed which conventions have been ratified by the Philippines.

United Nations Convention on the Law of the Sea "UNCLOS" (Montego bay, 1982)
This Conventions only entered into force on November 16, 1994 and has received 75 ratifications as of May 9, 1995. It operates as an umbrella agreement and seeks to establish a comprehensive legal order to facilitate international communication and promote peaceful uses of the oceans, rational utilization of their resources, conservation of living resources and protection of the marine environment. It also seeks to establish basic environmental protection principles and rules on global and regional cooperation, monitoring and environmental assessment.

The Convention covers all sources of marine pollution, including those from vessels. It allocates enforcement responsibility for vessel-source pollution among the *Flag State* (state of vessel registry), *Coastal State* (state whose coastal waters the vessel transits), and *Port State* (state whose ports, including off-shore terminals, the vessel visits).

Parties are committed to monitor any activities which they permit or in which they engage, in order to determine whether these activities are likely to pollute the marine environment. Results of such monitoring must be made available internationally. States are also committed to enforce national and applicable international standards, settle disputes by peaceful means, and adopt measures for the conservation of living resources.

International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocol of 1978 relating thereto (MARPOL 73/78)
This Convention has a narrower scope than the Law of the Sea Convention as it is limited to vessel-based pollution. It had 92 parties as of December 31, 1994, including those with the largest fleets. It seeks to prevent, minimize and control marine pollution from ships.

Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter (London Dumping Convention)
This Convention is also closely linked with the Law of the Sea as well as to the MARPOL Convention. It had 70 parties as of December 1994, and seeks to prevent indiscriminate disposal at sea (i.e. outside of a country's territorial waters) of wastes liable to create hazards to human health, harm living resources and marine life, or interfere with other legitimate uses of the sea. The Convention prohibits dumping of certain wastes, requires a specific permit prior to dumping of others, and demands a general permit for the rest.

The Convention on biological diversity (Rio de Janeiro - 1992)

The objectives of this Convention refer to:

1. the preservation of biological diversity;
2. the rational utilization of its components;
3. the correct and equitable distribution of the benefits resulting from the utilization of the genetic resources;
4. the access to the genetic resources by an adequate transfer of relevant technologies.

The states have the sovereign right of exploiting their own resources in keeping with their environmental policies. Each signatory country will develop national strategies, plans and programmes for the rational preservation and utilization of the biological diversity and will integrate as far as possible (and if required) the preservation and reasonable utilization. The important components of the biological diversity will be identified for their rational preservation and utilization, in keeping with the category list. The biological diversity components will be supervised (by sample taking and other techniques) and the processes and activity categories having a negative impact on the preservation and utilization of biodiversity will be identified.

A system of protected zones will be established, as well as of zones requiring measures for the preservation of the biological diversity; directory lines will be developed for the selection, establishing and administration of these zones. The biological resources will be managed if they are important to the preservation of the biological diversity within or outside of the protected zones. The Parties will also promote the protection of ecosystems and natural habitats and the maintenance of the species of those populations living in a natural environment. They will also rehabilitate and reinstate the degraded ecosystems and will promote the recovery of the threatened species.
Each signatory will set up and maintain facilities for the ex-situ preservation and research of plants, animals and micro-organisms. Measures will be taken for the recovery and reconstitution of threatened species and for their reintroduction into natural habitats in adequate conditions. Cooperation relations will help with the securing of the financial support or of other kind of support for the ex-situ preservation.

Safety measures will be adopted to stimulate the rational utilization and preservation of the components of the biological diversity. Educational and scientific training programmes will be set up and maintained with regards to the identification, preservation and rational utilization of the biological diversity. Research activities, contributing to the preservation and rational utilization of the biological diversity, will be promoted and encouraged.

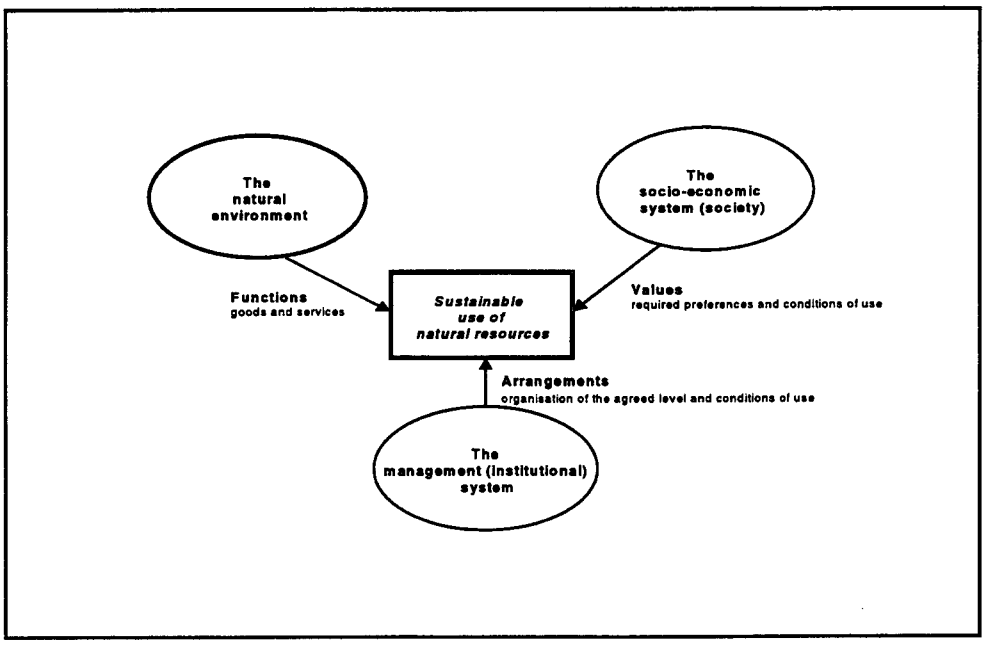
Each signatory country will make efforts to set up adequate conditions to facilitate access to the genetic resources, for safe utilization having a minimum impact as far as the environment is concerned.

The countries which adhered to this Convention will facilitate information exchange as well as share the results of technical, scientific, social and economic researches. They will also exchange ideas relating to the preservation and rational utilization of the biological diversity. Cooperation in personnel training and exchange of experts and scientific researchers will be developed too.

APPENDIX G

Specific guidelines for function evaluation

The concept of sustainable development and the principle that environment and development are two issues that can not be separately dealt with are nowadays widely accepted. They are also the guiding principles of environmental policy making in the Philippines. In these guidelines function value evaluation is the guiding principle to identify the choices that have to be made in the decision making process. In this approach the principle of sustainable development is lead by the identification of the existing interactions between functions produced by the natural environment, values attributed to these functions by society and management principles used to balance functions and values[1]. This is demonstrated more specifically in the following picture:



The natural environment system is providing a number of environmental functions representing goods and services which can be exploited by society. Exploitation is guided by social, economic and cultural behaviour of the society involved. Which functions are going to be used and to which extend is subject to the values that the society will attribute to those functions. The discrepancy between functions produced and pressure on the resource requires intervention. Scarcity for instance may result depending on demand and certain goods may need to be put under protection. The management system, to be interpreted as the total of institutional (laws and law enforcement structures) and physical (dams, protection structures) structure, takes care of control and balance between goods and services produced and requirements made by society as whole.

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1 The methodology of function evaluation used in these guidelines is based on a paper submitted to the OECD/DAC-WPDAE by NEDA of the Netherlands in March 1997. It is based on the original work of R.S. de Groot (Functions of Nature; evaluation of nature in environmental planning, management and decision making) of 1992.

Determination of the functions and values under this approach is done using the function evaluation methodology. The method makes use of a matrix in which functions are put against values that a society may attribute to them. Values can be of different order and nature. Usually socio-economic, financial and ecological values will be primarily used in project assessment. With regard to functions the following four categories are normally distinguished:

Regulation functions relate to the maintenance of life support systems. The interactions between biotic and abiotic components result in complex processes which influence conditions for life . These functions are often not recognised until they are disturbed.
Carrier functions are related to a space and substrate that is suitable for certain activities and for which there may be a demand (e.g. agriculture, water transport). In this sense nature also requires space.
Production functions are limited to those goods and that are produced by nature and for which man only needs to invest time and energy to harvest them. (So cultivated plants and animals are not included).
Information functions: nature provides opportunities for spiritual enrichment, cognitive development and recreation. Although it is often very difficult to measure or quantify the value that is derived from these functions, it is important to realise that the world's largest economic sector, tourism, is largely based on this function (i.e. man's appreciation of nature and landscape).

List of potential functions or final variables which can be valued

Production functions
- production of construction wood (round wood)
- production of fire wood/charcoal
- production of secondary forest products
- production of fish
- production shrimps, crabs etc.
- production of pearls, shells
- production of game
- water, quantity and quality
- production of genetic resources, traditional cultivars, medicinal herbs, ornamental plants

Carrier functions (suitability of a habitat for specific activities)
- suitability for production of crops, soil characteristics and fertility
- suitability for animal husbandry/regeneration capacity of vegetation
- quality and quantity of wood than can be produced from the forest
- suitability for aquaculture, availability of water, safe and suitable land
- tourism potential, landscape features
- nature conservation potential, unique or threatened habitats or species
- suitability of waterways for navigation (water transport), water depth, seasonality, obstacles

Regulation functions
- flood attenuation and control
- coastal protection
- soil protection
- infiltration /recharge of ground water aquifers
- water purification by natural processes
- sediment retention capacity
- breeding grounds fish and shellfish
- life cycle migratory bird species (wintering, breeding, stop-over sites)

-	life cycle migratory aquatic organisms (breeding or feeding sites, migration routes)
-	counteracting surface water intrusion from sea
-	counteracting the subsurface intrusion of saline water
-	water storage capacity
Information functions	
-	scenery scenic beauty natural site valued by local inhabitants
-	natural area of particular scientific interest
-	religious function or high cultural/archeological value of a (natural) site
Imbalances of nature	
-	vulnerability of crops to pests & weeds
-	wild animal disease reservoir inflicts damage to domestic animals
-	proliferation of aquatic weeds which obstructs waterways and deteriorates water quality
-	damage to crops or infrastructure, human safety risk due to the near presence of wild animals

In the function value matrix the functions of a certain (project and/or study) area can be considered in relationship with their attributed values as a method to demonstrate their relationship. Usually the functions appear in the rows of the matrix and the values in the columns. The matrix can be used for the purpose of assessment and analysis. First the relationship as such can be established, while in a possible second round these relationships can be qualified and quantified more exactly and in compliance with the methods of decision making to be used in further planning and evaluation of the project. It is also important to notice that values may differ depending on the stakeholders involved. Fishing grounds will have a different value to a fishing company than to a tourism company using it as a diving site or the national government who would need the area as a navigational channel. Construction of the matrix should involve the point of view of different stakeholders for this reason. Evaluation of the matrix for decision making should be done in a participatory process involving multiple stakeholders. Following is an example of a function value matrix developed for a typical; fresh water wetlands area:

Example of the function value matrix:

Functions	social values				economic values							ecological values	
	income in kind / subsistence	health & Safety	food quality / quantity	water quality	agriculture	animal husbandry	fishing and hunting	large industry	artisanal industry	medicinal herbs	employment creation	cross boundary relations	future (inter-generation)
Regulation Functions													
flood control													
groundwater recharge													
groundwater discharge													
soil erosion by water													
protection against wind dust													
retention of sediment													
storage/recycle organic matter													
storage / recycle toxicants													
soil stabilization													
nursery habitat for fish													
migration habitat for waterfowl													
biodiversity maintenance													
microclimate influences													
Carrier Functions													
human settlements suitability													
cultivation of crops													
aquaculture													
animal husbandry													
nature reserves / protection													
navigation and transport													
recreation & tourism													

Production Functions																		
irrigation water																		
public water supply																		
reeds for construction																		
fish																		
reeds and grass for fodder																		
waterfowl / other hunting																		
firewood																		
construction wood																		
Information Functions																		
landscape information (tourism)																		
cultural information																		
scientific information																		

APPENDIX H

Terms of Reference for the Guidelines document: guidelines for Environmental Impact Assessment for land reclamation projects in the Philippines

1. Rationale and background of the Guidelines document

These Terms of Reference describe the necessary work to finalize the Guidelines document for EIA for land reclamation projects in the Philippines. In the Philippines there is limited experience with the execution of EIA for land reclamation projects whilst the impacts of this type of projects are significant. In the Netherlands there is a lot of expertise in the field of EIA and land reclamation projects and for that reason the Philippines Department of Environment and Natural Resources requested the Netherlands Embassy to assist with the preparation of this Guidelines document.
In the preparation phase of the guidelines document a lot of work has been done already. The Netherlands Embassy in the Philippines on June 18, 1998, requested the Netherlands Commission for Environmental Impact Assessment (the Commission) to prepare an advice on Guidelines on environmental impact assessment of land reclamation projects in the Philippines. The Government of the Philippines (Department of Environment and Natural Resources/DENR) requested the Commission to incorporate the draft ToR[1]], prepared by DENR, into the advice of the Commission. This advice has been submitted to the Netherlands Embassy in the Philippines in September 1999.

The aim of the guidelines document is to assist:
- Competent authority / government personnel occupied with the coordination and coaching of parties which are responsible for the EIA procedure, the execution and review of the EIA study and report, and the coordination of the involvement of the stakeholders including the public (beneficiaries as well as non-beneficiaries).
- Proponent; This is the stakeholder who has taken the initiative to execute a land reclamation project. This can be the government or a private company.
- Parties (consultancy firms, universities etc.) which are responsible for the execution of the EIA study and the preparation of the EIA report, and the participation of stakeholders.

The advice of the Commission is covering all the aspects to be elaborated in the Guidelines document and therefore this advice should be used as a guide for its set up and as a major input for the preparation of this document.
The Netherlands Commission will be requested to review the final draft Guidelines document on basis of this ToR.

2. Scope of the Guidelines document

Land reclamation is defined as an activity aiming at the change of a permanent open water body (sea, lakes, rivers, estuaries, lagoons) or areas which are temporarily/seasonally flooded by water (tidal areas, flood plains, marshes, swamps) into permanent land. The following activities, with respect to land reclamation should be considered in this document:

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1 Department of Environment and Natural Resources (February 16th, 1998): Terms of Reference. Development of guidelines for environmentally and socially acceptable reclamation projects in coastal and lakeshore areas.

- reclamation of land by filling, dredging of filling material (sand, clay, rocks etc) from borrow areas, transport and temporary stocking of dredged and / or filling materials and drainage
  of reclaimed land areas, e.g: construction of land adjacent to the coast, construction of an island in open water, construction of abutments for a road or railway, beach replenishment;
- reclamation of land by drainage, e.g. dewatering of lakes and other water bodies or part of water bodies;
- reclamation of land by poldering, e.g. construction of dikes, dams, sluices and drainage systems.

In the document the following type of areas should be distinguished:
- Fresh water areas; all open water bodies containing fresh water, such as: natural/man made lakes, rivers, streams, wetlands.
- Salt or brackish water areas; all open water bodies containing salt or brackish water which are subject to the tide, such as: open sea, tidal flats (mangrove areas, lagoons), estuaries and wetlands.

This distinction is necessary because abiotic and biotic processes in these systems may react differently to impacts of the activity.

According to the Phillippines EIA system projects should be environmentally sound and socially acceptable. Social acceptability is defined as the result of a process that is mutually agreed upon by DENR, the stakeholders and the proponent to ensure that the concerns of stakeholders, including affected communities, are fully considered and / or resolved in the decision-making process for granting or denying the issuance. This means that the scope of an EIA study includes environmental as well as social aspects and in particular involvement of the stakeholders, in the EIA process. In the guidelines document these aspects and the relations between these two dimensions and how to shape and guarantee public participation should be included.

In the Guidelines document at least three sections should be distinguished in accordance with the demand for guidelines by the different user groups. Each of the three sections should be used independently from the other two sections.
- Introductionary section
- Section A: Guidelines on screening, scoping, timing and managing the EIA process.
- Section B: Guidelines for the execution of a strategic EIA study and reporting.
- Section C: Guidelines for the execution of a project EIA study and reporting.

Each section should be illustrated by good practices, figures, tables etc. to make the guidelines better accessible for the user.

3. Guidelines for the EIA Process - Section A

In the advice of the Commission guidelines are provided on screening, scoping, timing, tuning and public involvement. Screening is the process to determine whether a proposal , project or plan requires an EIA and if so at what level. Scoping is the process in which it is determined which information should be gathered and analysed in the EIA study. Guidelines on timing and tuning of the EIA study with other studies should be elaborated with respect to the impact of EIA in relation to decision-making and the opportunites to develop alternatives.
The guidelines on the EIA process should be incorporated in the section on the EIA process.

In the guidelines document a distinction should be made between guidelines for EIA at two different planning levels:

- Guidelines for EIA at strategic level. At this level decisions have to be taken regarding location and seize of land reclamation projects as well possible mitigation measures and alternative options.
- Guidelines for EIA at project level. At this level decisions have to be taken regarding design and construction of land reclamation projects.

Guidelines for these two types of EIA should be elaborated seperately in the guidelines document.

4. Methodology for execution of the EIA study - Section B and C

The methodology for the execution of an EIA study for land reclamation projects should be elaborated in a step by step approach in the Guidelines document for the two different types of EIA. The set of guidelines for this two types must described independently from each other. The advice of the Commission should be used as a starting point. This means that guidelines on the following issues should be elaborated: problem analysis, stakeholder analysis, development of alternatives, legislation, and environmental as well as social impacts.

An approach to the production of an overview of potential alternatives and good practices available should be elaborated for the activities under consideration.

Impact determination is a subject which needs specific attention and in particular a list of potential impacts of the activities considered should be elaborated. Here, use can be made of the outline presented in appendix E of the advice of the Commission. Use should also be made of the function evaluation method, see appendix G of the advice of the Commission. Criteria for development of alternatives and mitigating measures should be provided. It is advised that for this chapter the results of the recently finalized, DGIS financed, DR EIA (Document Retreival and Scooping System for EIA) project are consulted and to consider their use as possible inputs for the various elements of the guidelines.

An overview of mitigating measures and good practices should be elaborated.

5. Reporting and report presentation

For the contents of the guidelines document use should be made of the following set up:

Introductionary Section
1. General introduction
2. Scope and aim of the guidelines
2.1 Defining land reclamation
2.2 General aim of the guidelines document

Section A
Planning and managing the EIA process
1 Screening, type and level of EIA required
2 Scoping
3 Timing of EIA
4 Tuning of EA and other (planning)studies
5 Agency and public involvement and the role of non governmental organisations

Section B 1 and C 2
Components and structure of the EIA study or scope of the EIA study

1 Introduction
2 Project objectives and problems
3 Legal and administrative framework
3.1 Legislative and regulatory considerations and policies
3.2 Institutional capacity
4 Description of the proposed project

Section B 2
1. Development (and selection) of site alternatives
2 Method for impact determination
2.1 Step 1: Determination of the study area
2.2 Step 2: Description of the present natural and socio-economic environment including stakeholder analysis
2.3 Step 3: Description of the autonomous development of the natural and socio-economic environment
2.4 Step 4: Description of potential impacts
2.5 Step 5: Description of mitigating measures
2.6 Step 6: Selection and valuing of final variables
2.7 Step 7: Comparison impacts for the alternatives
3 Lack of information and knowledge

Section C 2
1 Development of alternatives at project level
2 Method for impact determination
2.1 Step 1: Determination of the study area
2.2 Step 2: Description of the present natural and socio-economic environment
2.3 Step 3: Description of the autonomous development of the natural and socio-economic environment including stakeholder analysis
2.4 Step 4: Description of potential impacts
2.5 Step 5: Description of mitigating measures
2.6 Step 6: Selection and valuing of final variables
2.7 Step 7: Comparison impacts for the alternatives
3 Lack of information and knowledge

Special attention must paid to introduction and presentation of the guidelines within the Philippines EIA environment. It is proposed to discuss the results of the draft final report of the guidelines in a workshop to be held in cooperation with DENR in the Phillipines at the end of the assignment. For training purposes a slide series introducing the guidelines, use of the guidelines and instructions on best practices and cases should be be produced as part of this assignment.
Coordination with DENR is seen as essential for successful completion of this assignment and time should be allocated for participation of DENR counterparts. Especially their contribution to production of material for screening, legal aspects of EIA and procedures for site selection and stakeholders involvement is considered as crucial. DENR will also be instrumental for provision of instructive materials on best practices and local circumstances as needed.

6. Costs and planning

Following is the estimate of effort and costs involved to finalize the guidelines report and supportive material. Two visits to Manila are foreseen for reasons of coordination and training. A considerable input of DENR staff (supply of material and organisation of the workshops and training) has also been allocated for this purpose.

Rates in Nlg.

Activity	**unit**	**units**	**unit price**	**subtotal**	**total**
International Expertise					
home office					
main text revision	person days	12	1742	20904	
appd. C	person days	2	1742	3484	
appd. D	person days	3	1742	5226	
appd. E	person days	24	1742	41808	
appd. F	person days	6	1742	10452	
appd. G	person days	2	1742	3484	
appd. H (selected case studies)	person days	10	1742	17420	
slide series	person days	10	1742	17420	
overall report final editing	person days	4	1742	6968	
secretarial support	person days	6	824	4944	
					132110
abroad					
coordination and training	person days	10	1345	13450	
workshop	person days	10	1345	13450	
					26900
DENR Expertise					
DENR staff support	person days	100	250	25000	
					25000
Reimbursables					
return tickets AMS/MNA	tickets	4	3200	12800	
DSA	days	20	345	6900	
Seminar costs Manila	lumpsum	1	4500	4500	
Supplies and reproduction	lumpsum	1	4000	4000	
Communication and Mail	lumpsum	1	1500	1500	
					29700
total costs					**213710**

The total time necessary to finalize the work is estimated at approximately three months allowing ample time for communication between DENR and the international production team. Following is an approximation of time inputs and milestones:

Finalization of the Guidelines for Land Planning of Activities

Activities	month 1	month 2	month 3
main text revision	x x x x x x x x x x		
appendices (especially E)	x x x x x x x x x x		
slide series (draft)		x x x x	
draft report		x	
workshop		x	
final editing		x x x	
final delivery and training		x	

It is supposed that at least two international experts (technical background, institutional background) will be working on the assignment on a continuous basis and that two international experts will participate during the introductory workshop in the Phillipines. Separate specialised advise (socio-economic mainly) will be hired on and ad-hoc basis. Final introduction and training may be implemented by one person only.