

PN AEA - 005
REPUBLIC OF THE PHILIPPINES

92952

**TECHNICAL ADVISORY SERVICES
for
PHILIPPINE ASSISTANCE PROGRAM SUPPORT
PROJECT NO. 492-0452**

Prepared for:

**OFFICE OF CAPITAL PROJECTS
UNITED STATES AGENCY FOR INTERNATIONAL DEVELOPMENT
MANILA, PHILIPPINES**

Prepared by:

LOUIS BERGER INTERNATIONAL, INC.
TM-8910, Mile Long Center, Amorsolo St.
Makati, Metro Manila, Philippines

in association with

**LOCKWOOD GREENE
INTERNATIONAL, INC.**

**GLOBETROTTERS
ENGINEERING CORP.**

TRANS-ASIA (PHILS.) INC.

**CONSULTANT MANAGEMENT
SERVICES, INC.**

ERNST & YOUNG

**under Contract No. 492-0452-C-00-0099-00
with USAID/MANILA**

A

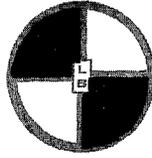
ENVIRONMENTAL ASSESSMENT

SCOPING SESSIONS REPORT

**FEASIBILITY STUDY AND MASTER PLANNING
CAGAYAN DE ORO - ILIGAN
AIRPORT PROJECT**

LOUIS BERGER INTERNATIONAL, INC.

TM-8910, Mile Long Center
Amorsolo St., Legaspi Village
Makati, Metro Manila, PHILIPPINES



Architects • Engineers • Economists • Planners

Telephone: 63 (2) 88-06-80
88-06-90
817-0405
Teletax: 63 (2) 819-3965

Ref. No.: SBD/152C/91-1518/epc

August 5, 1991

Mr. Alex Sundermann, P.E.
Project Officer
USAID/Manila
18F, R. Magsaysay Center
1680 Roxas Boulevard
Manila

Subject: **SCOPING SESSION REPORT**

Project: **DELIVERY ORDER NO. LBII 03
CAGAYAN DE ORO - ILIGAN CORRIDOR AIRPORT STUDY
PHILIPPINE ASSISTANCE PROGRAM SUPPORT
CONTRACT NO. 492-0452-C-00-0099-00**

Dear Mr. Sundermann:

As required by Section 216.3,22 United States Code of Federal Regulations and pursuant to Section IV D 2 (b) and IV D 4 (d) of our Delivery Order Contract, we have conducted Environmental Scoping Sessions in conjunction with the Cagayan de Oro - Iligan Corridor Airport Study.

We are pleased to submit herewith (5) copies of the Scoping Session Report for your records.

Concurrently, copies are being distributed as per the attached distribution list. Additional copies will be available should your require them.

LOUIS BERGER INTERNATIONAL, INC.

Mr. Alex Sundermann, P.E.
Ref. No.: SBD/152C/91-1518/epc
August 5, 1991
Page 2

Should you have any questions or require further information, please feel free to contact this office.

Very truly yours,
LOUIS BERGER INTERNATIONAL, INC.



WILLIAM J. PARENTE
PAPS Project Manager



PAUL SORENSEN
Environmental Studies Coordinator

cc: Pat Quinn, Group Vice President, Louis Berger-Wash., D.C.
Ron Kornell, Reg. Vice President, Louis Berger-Bangkok
Joseph Weiss, Home Office Coord., Louis Berger-East Orange
All Subcontractors

Encs. 5 copies - Scoping Session Report
Distribution List No. 022



LOUIS BERGER INTERNATIONAL, INC.
PAPS PROJECT
REPORT DISTRIBUTION CHECKLIST NO. 022

REPORT TITLE: Scoping Report, Environmental Assessment for Cagayan de Oro-Iligan Airport

PROJECT NO.: GG152C

ITEM NO.	ADDRESSED TO	NO. OF COPIES	RECEIVED BY (SIGNATURE BESIDE PRINTED NAME)	DATE
1.	Alex Sundermann, OCP/USAID, Manila	5		
2.	Michael I. Kingery, MDP/USAID, Manila	1		
3.	Pons Naanep, PAPS, Project Manager, USAID, Manila	5		
4.	James Tarrant, USAID, Washington D.C.	2		
5.	Undersecr. Rogelio L. Singson, CODA	3		
6.	Pat Johnson, CCSC-CODA	2		
7.	Teresita Valdes, Assistant Sec., DOTC	3		
8.	Gen. Oscar Alejandro, Chief, ATO	3		
9.	Mamole Pangandam, DTI, Iligam	2		
10.	Ninfa Albania, DTI, Cagayan de Oro	2		
11.	Dr. Irma C. Corales, NEDA, Pasig	2		
12.	Augusto Santos, NEDA Region X	2		
13.	Ernesto M. Balangue, NEDA Region X	2		
14.	Gutierrez Mangansakan, Director, NEDA Region XII	2		
15.	Undersecr. Delfin Ganapin, DENR/EMB, Quezon City	3		
16.	J.P. Haithcox, GEC, Chicago, USA	1		
17.	Robert Martin, LOCKWOOD, Atlanta USA	1		
18.	Barbara Kelly, ERNST & YOUNG, Wa., D.C.	1		
19.	Ernesto de Castro, TAP, Makati	2		
20.	Harry Taylor, GHT, Mandaluyong	1		
21.	Joe Weiss, LBII-East Orange	1		
22.	Pat M. Quinn, LBII-Washington	1		
23.	Ronald F. Kornell, LBII Bangkok	1		
24.	David Wallace, LBII Makati	1		
25.	Steve Doerr, Team Leader, & member	10		
26.	PAPS PM	1		
27.	PAPS Deputy PM	1		
28.	LBII-PAPS Office	6		
	TOTAL	65		

E

TABLE OF CONTENTS

- 1.0 INTRODUCTION
 - 2.0 PROJECT DESCRIPTION
 - 3.0 PRELIMINARY FINDINGS
 - 4.0 RESULTS OF SCOPING SESSIONS
 - 5.0 MAJOR ISSUES IDENTIFIED TO DATE
 - 6.0 PROPOSED WORK PLAN
-
- APPENDIX A ATTENDANCE LISTS FOR SCOPING SESSIONS
& LIST OF ACRONYMS AND ABBREVIATIONS
 - APPENDIX B INVITATION LIST TO SCOPING SESSIONS
 - APPENDIX C MINUTES OF SCOPING SESSIONS
 - APPENDIX D SUBMISSIONS PRIOR TO AND SUBSEQUENT TO
SCOPING SESSIONS
 - APPENDIX E DRAFT OUTLINE FOR EA/EIS

1.0 INTRODUCTION

Three Environmental Scoping Sessions were held regarding the Environmental Assessment of the Feasibility Study and Master Planning, Cagayan de Oro - Iligan Airport Project as follows:

NATIONAL SCOPING SESSION

July 15, 1991

1:30 PM

Asian Institute for Tourism Hotel

Quezon City

REGION XII SCOPING SESSION

July 17, 1991

2:00 PM

Cafe Hermoso

Iligan City

REGION X SCOPING SESSION

July 18, 1991

2:00 PM

VIP Hotel

Cagayan de Oro

The reason for holding scoping sessions at three locations was to allow maximum representation at the meetings from both a national and local perspective. The two meetings in the provinces of Misamis Oriental (Cagayan de Oro) and Lanao del Norte (Iligan City), geographically about 90 kms apart, were held for the convenience of the local attendees.

The purpose of the meetings as outlined to the participants was for:

- starting the process of communication early in project planning,
- involving parties that may be potentially affected by the project,
- identifying local concerns,
- focusing on those issues that require in depth study, and
- identifying issues of a lesser significance.

A list of those who attended the various scoping sessions is provided in Appendix A and the list of those invited appears in Appendix B.

We wish to acknowledge with thanks the willing assistance of the Department of Trade and Industry (DTI) staff and Regional Directors, Ms. Mamole Pangandaman (Region XII, Iligan City) and Ms. Ninfa Albania (Region X, Cagayan de Oro) in helping with local meeting arrangements.

2.0 PROJECT DESCRIPTION

2.1 PURPOSE

The Feasibility and Environmental Studies on the Cagayan de Oro - Iligan Airport Project are currently being undertaken to select a technically feasible, economically justified, socially and environmentally sound, cost effective plan for improving airport facilities that will serve the needs of the population and industry in the defined service area up to the year 2011.

2.2 INITIALLY PROPOSED IMPROVEMENT ALTERNATIVES

At the time material was prepared for presentation to the public at the scoping sessions, there were four alternatives under consideration by the Feasibility Study team. These were presented with additional description and details at the scoping sessions as follows:

- Alternative 1 - Improve facilities at the two existing airports to support continuation of present airline service patterns.
- Alternative 2 - Construct a new airport at Linamon able to support daytime narrow-body jet operations, while making minor improvements at Lumbia to support continuation of present service patterns.
- Alternative 3 - Implement a new airport at Laguindingan in the short term future.
- Alternative 4 - Implement a new airport at Laguindingan in the future, as required to accommodate efficient commercial air traffic movements.

2.3 ADDITIONAL ALTERNATIVES

In addition to the four sites involved in the alternatives listed above, a fifth site at Iponan, located west of Cagayan de Oro, was initially considered by the Feasibility Study team. Details of this fifth site were also presented to the public during the scoping sessions as well as an overview of all candidate sites considered during the preliminary Feasibility Study.

2.4 REVISED AIRPORT ALTERNATIVES

The initial screening process of the Preliminary Feasibility Study identified unavoidable technical problems for most of the proposed candidate sites and project alternatives. These technical problems were generally related to physical flight obstructions created by local topographic

features, which are described in detail in the Preliminary Feasibility Report, and summarized in Table 1. Based on strictly technical and related construction cost considerations, the Preliminary Feasibility Report recommends the alternative of proceeding with programmed capital improvements at the existing Lumbia and Balo-i Airports (Figure 1) or a choice of timeframes to construct a new airport at Laguindingan (Figure 2):

Alternative 1 - Improve Facilities at the Two Existing Airports to Support Continuation of Present Airline Service Patterns

Implement improvements required to support continued daytime narrow body jet operations at Lumbia and daytime turboprop operations at Balo-i. Most of the required capital improvements are included in the Department of Transportation and Communication (DOTC) Airport Development Plans.

Alternative 2 - Implement a New Airport at Laguindingan in the Short-term Future

Construction of the new airport would be implemented as soon as possible, avoiding the need to upgrade facilities at the two existing airports. As soon as the new airport is completed all commercial operations would be concentrated there, with no further commercial operations at the two existing airports.

Alternative 3 - Implement a New Airport at Laguindingan in the Future, as Required to Accommodate Efficient Commercial Air Traffic Movements

Construction of the new airport would be timed to coincide with the requirement for improved levels of commercial air service in the Corridor, including night time service capability and wide body aircraft operations. During the interim period programmed capital improvement would be implemented at the Lumbia and Balo-i Airport in accordance with the DOTC's existing plan.

3.0 PRELIMINARY FINDINGS

Based on the reconnaissance of the identified candidate sites, initial contacts and literature surveys, preliminary findings on the existing environmental conditions were obtained and presented during the scoping sessions.

3.1 LUMBIA

The Lumbia Airport in Cagayan de Oro is located about 11 km SSW of the city at an elevation of 182 m above sea level. It covers about 150 ha with a runway 2200 m long capable of accommodating aircraft as large as a B-737 which the Philippine Airlines presently uses in service to and from Manila, in addition to other destinations.

The airport is constructed more or less entirely on made land as a consequence of earth moving which has leveled the convex topography while filling the low areas. None of the original landscape remains intact. It is surrounded on all sides by agricultural land including several banana plantations and fields of corn within the airport fence.

3.2 IPONAN

A potential location for a new airport was identified near Iponan, located about six km west of Cagayan de Oro in the flat valley adjacent to the Iponan River. This site consists mainly of level rice fields and paddies surrounded on slightly higher terrain by numerous residences. The area is thickly-settled and appears generally prosperous judging from the good quality of the houses and the well-kept school. Such prosperity is in no small measure attributed to the apparently productive soil of the area.

The entire region of the Iponan River valley has been developed for agriculture. There remain no tracts of undisturbed habitat and it is judged highly unlikely that any rare or potentially-endangered species are likely to be found.

3.3 BALO-I

The existing airport for Iligan City is located about 17 km SE of the city, in Balo-i and is presently served only by medium size turbo-prop aircraft to and from Cotabato. Its elevation is 396 m above sea level. The N-S-oriented runway is 1400 m long with a total land area of approximately 26.8 ha.

The airport has been constructed on a plateau which has been leveled to provide for the runway such that most of the surface terrain adjacent to the runway is made land. Some original soils remain farther away from the leveled land and these patches of the landscape are cultivated.

Table 1
SUMMARIZED SCREENING PROCESS
CAGAYAN DE ORO – ILIGAN CORRIDOR AIRPORT SITING

IDENTIFIED POTENTIAL AIRPORT SITES	FEASIBLE SITES IDENTIFIED THROUGH FIRST STAGE SCREENING	FINAL CANDIDATE SITES IDENTIFIED THROUGH SECOND STAGE SCREENING	PROJECT SITE FOR EA/EIS STUDY
Alubijid	Balo-i	Balo-i	Laguindingan
Balo-i	Iponan	Laguindingan	
Iponan	Laguindingan	Lumbia	
Laguindingan	Linamon		
Linamon	Lumbia		
Lumbia			
Manticao			
Naawan			

First Stage Screening – comparison of technical factors for an airport sufficient to meet the long-term commercial aviation needs of the Cagayan de Oro-Iligan Corridor.

Second Stage Screening – comparison of estimated development and operations costs and relative benefits between paired clusters of existing and potential airport sites.

MR816T3

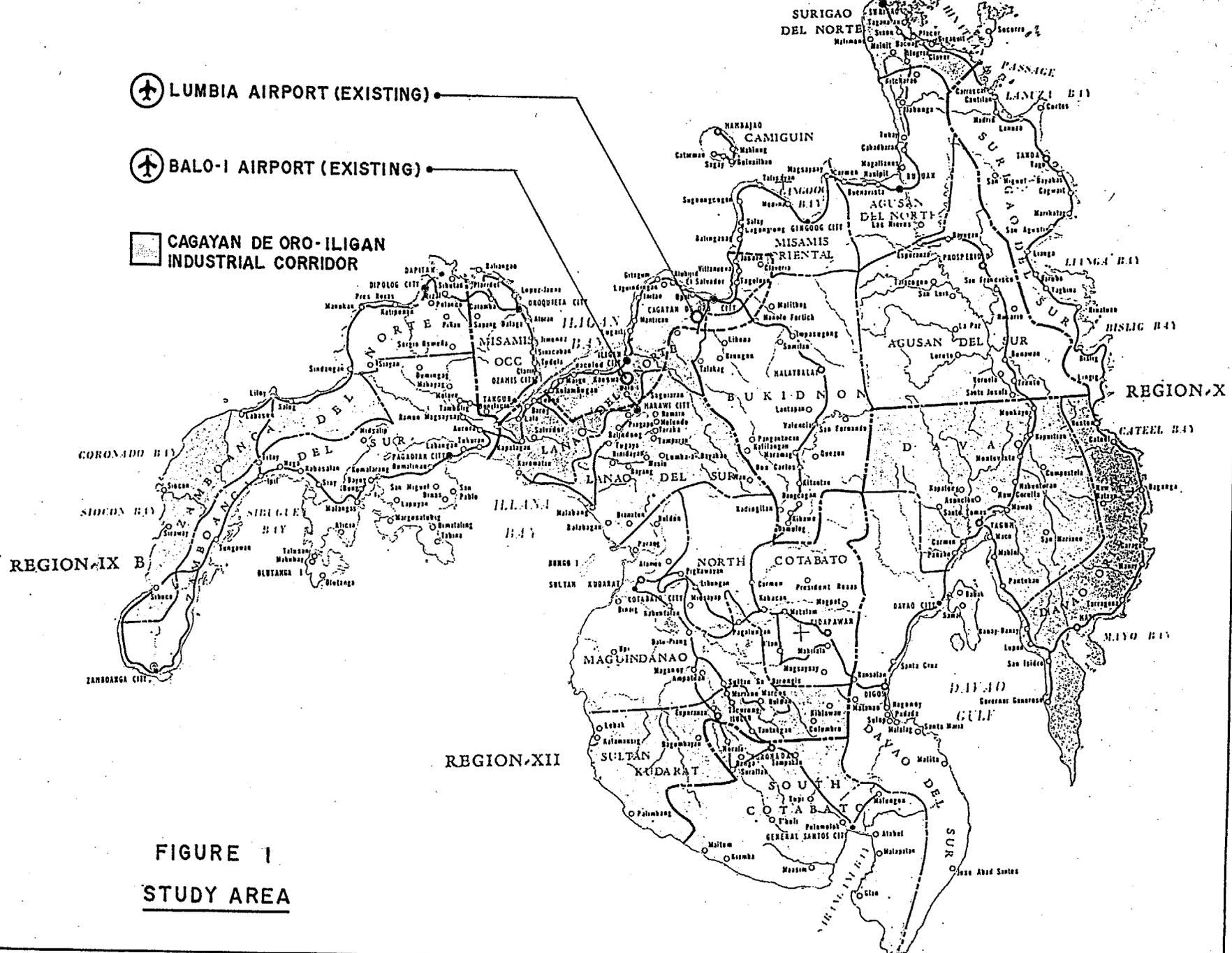


FIGURE 1
STUDY AREA

3.4 LINAMON

Several years ago a new airport for Iligan was planned for a site about 15 km E of the city at Linamon. Construction of the runway was begun but never completed. The site is located in hilly terrain which is cultivated. Intense cropping of slopes has led to severe erosion problems which could be overcome with proper farming practices. The extensive land use for agriculture and the recent disruption of the landscape for airport construction preclude the likelihood of there being rare or potentially-endangered species present.

3.5 LAGUINDINGAN

The site is located about 35 km NW of Cagayan de Oro and about 63 km NE of Iligan. The location of the proposed runway lies approximately 3.6 km from the paved National Highway 1 via a gravel and dirt road which leads to the barangay of Moog.

Moog, which translated into English means "fort", is so named for the previous existence of a stone fort or watchtower, dating to the Spanish colonial era, at Sulauan Point. All that remains of the original fort structure are low rock works near the tip of Sulauan Point.

The Laguindingan site is composed entirely of weathered coralline rubble karst, and basement limestone. As such it has very little water-retention capacity. Aeolian sediments which have accumulated in the cracks and depressions of the exposed coralline bedrock constitute the principal material used as soil by the farmers who have settled the area. In this meager soil they are able to grow some corn and melons, but the principal crop is tobacco which, according to local sources, is their primary cash crop. Coconut trees are present but very dispersed.

With the noted exception of several ravines, most of the natural vegetation has been cleared for agriculture leaving much of the terrain barren. An extensive shallow reef formation fringes most of Sulauan Point.

4.0 RESULTS OF THE SCOPING SESSIONS

4.1 QUEZON CITY (METRO MANILA)

Questions were raised about the loss of agricultural land and whether proper compensation would be made to those presently farming in the area of the existing as well as the proposed new airports. Concern was expressed for the consideration of cultural communities in the vicinity of the alternative sites. The issue of archeological investigations was raised. It was pointed out that any new roads constructed would require the same sort of assessment as for the airport site itself. Questions on funding centered on who would pay if adverse impacts required mitigation. Most of the informal discussions among various groups of participants and LBII personnel dealt with technical aspects of the airport feasibility studies.

4.2 ILAGAN CITY (LANAO DEL NORTE, REGION XII)

Most comments and questions from the meeting participants focused on their desire to have an improved airport in their immediate vicinity. Almost without exception, the government representatives present at the meeting expressed the desire to continue the development of the partially constructed airport at Linamon. One person made an effort to address environmental concerns by pointing out that the initial environmental reconnaissance had not identified any issues other than those few outlined in the Background Paper. Some concern was raised about the safety and noise factors.

4.3 CAGAYAN DE ORO (MISAMIS ORIENTAL, REGION X)

As with the Iligan City scoping session, the participants in Cagayan de Oro remarked extensively on the question of whether a new airport will be constructed or the existing one improved. Several favored improving Lumbia Airport. They pointed out that people from the interior of Mindanao, specifically those from Bukidnon Province, would have farther to drive if a new facility was located in Laguindingan.

4.4 SUBMISSIONS SUBSEQUENT TO THE SCOPING SESSIONS

One written submission has been received subsequent to the scoping sessions. It has been added to Appendix D. It included the significant point that the EA/EIS for an airport project, especially if a new site is selected, must address in detail certain technical aspects of particular significance in relation to airport siting. These include air quality and noise modeling, land use planning, hazardous material handling, and secondary transportation impact modeling.

5.0 MAJOR ISSUES IDENTIFIED TO DATE

Based on the initial site surveys, the three scoping sessions and subsequent submission and discussions, some of the specific environmental issues identified to date, include:

◆ Potential Historic Site

The alternative proposing the construction of a new airport near Laguindingan has introduced the question as to the historic significance of the area. A local informant has indicated there was once a "fort" on or near Sulauan Point. Indeed, the name of the local barangay, Moog, in the local dialect means "fort".

◆ Socio-Economic Issues

The Laguindingan site is settled by subsistence farmers and fishermen. Their relocation, compensation, and perhaps some technical assistance will become necessary if construction takes place.

◆ Coastal Fisheries

Associated with the extensive fringing reef formations which surround the Suluan Point is reportedly a significant subsistence fisheries. The impact on these resources will need to be examined.

◆ Hazardous Materials

The petroleum products used in airport/aircraft operations pose a potential threat to groundwater resources in case of accident or spillage. Proper handling, storage, and disposal of waste will need to be addressed, as well as provision of contingency plans.

◆ Noise and Air Quality

Noise from aircraft landings and take-offs may be disruptive to local residents, avifauna and wildlife, as well as the normal operation of the elementary school at Moog. Similarly, air quality may be degraded as a function of airport operation and vehicular influx.

◆ Present Airport Personnel and Satellite Businesses

Relocation or compensation of displaced workers from the existing airports to the new airport may be needed. Some retraining could become necessary, especially if the types of aircraft used at the new site change from those presently operated. Relocation or compensation of displaced businesses that have become dependent upon the operation of the existing airport will need to be examined.

◆ Cumulative Impacts

Locating an airport facility in a presently undeveloped area may induce cumulative impacts related to accelerated development of the site and the Cagayan de Oro - Iligan Corridor in general.

6.0 PROPOSED WORK PLAN

The Terms of Reference for the Environmental Assessment of the proposed Cagayan de Oro - Iligan Corridor Airport Improvement Project includes a condition that the Consultant determine the requirements of the Government of the Philippines for issuance of an Environmental Compliance Certificate (ECC) and obtain the same on behalf of the project.

Meetings have been held between the Consultant and the staff of the Environmental Management Bureau (EMB) of the Department of Environment and Natural Resources (DENR). At these meetings, it was determined that under DENR-EMB regulations, an Environmental Impact Statement (EIS) will be required. The EMB staff recommended that the application for the ECC should be filed at the same time the draft EA/EIS is submitted.

The study plan for the project has been designed based on the USAID Terms of Reference and

the Government of the Philippines Outline for Environmental Impact Statements. The EIS document incorporates similar requirements to those of the EA of USAID but with some augmentation. The result is a plan that will conform to the requirements of both agencies and will result in the production of a document meeting the requirements of USAID's Environmental Assessment and the GOP's EIS.

A draft outline of the proposed EA/EIS is provided in Appendix E.

6.1 LIMITATIONS ON THE SCOPE OF THE ENVIRONMENTAL ASSESSMENT

The air transport planning division of DOTC has approved and programmed a schedule of improvements for the existing Lumbia and Balo-i Airports. In some cases the contracts for those improvements scheduled for 1991 implementation have already been let. They include both capital improvements (e.g., remodeling and expanding the Terminal Building at Lumbia) and routine maintenance (sealing cracks in the runway). The improvements will take place on airport-dedicated land within the boundaries of the existing airport properties at Lumbia and Balo-i. None of the improvements include expansion of the runway length or activities which would significantly impact adjacent lands.

Both Lumbia and Balo-i Airports, including the runways, interior roads, and buildings, were constructed on "made land" by leveling the hilly topography, cutting the hilltops and filling the shallow ravines and valleys. Very little of the original landscape remains unaltered. The vegetation which has succeeded on the exposed and disturbed sites is made up of pioneer and/or planted native and naturalized species. A limited amount of disruption of the existing vegetation cover is likely to result from the improvement projects.

In consideration of these facts, that 1) the DOTC is in the process of implementing programmed capital improvements, 2) the improvements take place within existing operational airport facilities 3) the airports are on disturbed, made land, and 4) the programmed improvements will not significantly change existing technical constraints limiting airport capacity with respect to size of aircraft, it is concluded that there will be no significant environmental impact associated with these programmed improvements and this tentative alternative. For this reason, no further environmental assessment at either Lumbia or Balo-i Airport is planned.

6.2 SCOPE OF ENVIRONMENTAL ASSESSMENT

The Preliminary Report of the Feasibility Study and Master Planning, Cagayan de Oro - Iligan Airport Project has identified only a single site in the corridor which meets the technical requirements for the construction of an airport which will significantly advance the facilities serving the region (Figure 2). The site is near the community of Laguindingan (Table 2). All further work on the preparation of the EA/EIS will focus on this site.

6.3 DATA COLLECTION

6.3.1 Air Quality and Climate

The characterization of the project site climate will be based on existing meteorological data gathered from PAGASA Synoptic Weather Station at the Cagayan de Oro airport. The data set will include prevailing surface winds, temperature, humidity, rainfall, storm frequency and cloudiness.

In addition, a meso-scale surface wind model will be generated for the project site to estimate the effect of site topography on local wind patterns at different seasons of the year. Model results will characterize local wind circulations such as land and sea breezes, slope winds, and valley breezes.

Existing noise levels at the project site and along proposed access roads will be established through actual measurements using a MSA Sound Level Meter.

The noise impact of projected airport operations will be assessed through the application of the Integrated Noise Model (INM) developed by the US Federal Aviation Administration (FAA). This model predicts the equivalent sound pressure levels at various points around the runway, subject to the frequency of take off and landings of various types of aircraft. The equivalent noise levels along the proposed access road arising from the projected increase in vehicular traffic will be evaluated based on anticipated volumes and vehicular types.

Existing information will be used to describe baseline conditions for total suspended particulates. Based on generated wind models, projected corridor and site-specific development and traffic, air quality area source modeling will be performed to start predict total suspended particulate levels for the time frame of the study.

6.3.2 Water Quality and Hydrology

Existing information for the coastal waters of the corridor, including Iligan Bay and particularly Macalajar Bay, will be used to describe the marine hydrological baseline conditions in the project area. The present water quality of Macalajar Bay will be re-sampled as a component of the concurrent Cagayan de Oro-Iligan Corridor Industrial Master Plan Study, and these results will be incorporated into the environmental assessment of the airport project to update baseline data.

Quality tests of groundwater will be undertaken, in collaboration with faculty members of Xavier University, to provide baseline conditions of local wells and springs in the vicinity of the project site. The parameters to be analyzed will conform to the requirements and standards of EMB-DENR. Testing for pesticide residues in local groundwater is proposed due to the agricultural nature of the site and observed local practices of applied pesticide use.

6.3.3 Oceanography

A depth-integrated barotropic model will be used to describe the wind driven currents within

Macalajar Bay and coastal waters adjacent to Sulauan Point and the project area.

A description of tidal currents will be derived from existing data for the port of Cagayan de Oro, local interviews, and field observations.

6.3.4 Topography, Soils, and Geology

The project area will be described using existing information, recent maps and studies. Ground truthing and local observations will be made during site surveys.

Additional information will be gained from Feasibility Study team engineers, including results of soil borings to be performed throughout the site. //

6.3.5 Terrestrial Biology and Land Use e

In collaboration with faculty members of Xavier University, field surveys will inventory the flora and fauna, as well as distribution of habitats within the project site and along the proposed access roads. This inventory will compliment existing information, land use, and land cover maps to document the terrestrial biology and land use of the area.

6.3.6 Marine Environment

Emphasis will be placed on the coastal fisheries and marine habitats adjoining the project area and Sulauan Point. Field surveys will be conducted to record the distribution and condition of existing marine habitats, including mangrove, coral, seagrass, and tidal flat communities.

In association with the socio-economic surveys, traditional uses of the marine environment, including subsistence fishing, aquacultural developments, and recreational activities will be described.

6.3.7 Socio-economic Conditions

Socio-economic information will be gathered from available secondary sources and through key informant interviews, focus group discussions, and a small sample survey. Additionally, profiles of selected communities will be made through field observations and rapid community appraisals. //

Among the relevant domains for which information will be gathered are: population and settlement; housing and community facilities; health, education and social services; women in development; socio-cultural problems; and community perceptions; socio-political organization; income and employment.

Interviews will be conducted among various groups and sectors that will be affected by the project. Semi-structural interviews will be conducted among key informants, e.g., government officials, and formal and informal community leaders, and airport personnel. More structured interviews will be made among a sample of household heads in the project area, particularly in the community where a new airport is being considered. The sample size will be based on acceptable standards for reliability and sampling error.

6.3.8 Cultural Environment

The presence of cultural communities residing within the project area will be determined during the socio-economic field surveys. To date, no cultural communities have been identified within the defined project area.

The historic remains of a Spanish-era watchtower on Sulauan Point establishes a potential for archaeological resources in the area. A field survey and literature search regarding these remains will be conducted, in addition to surveys of the larger area subject to proposed project disturbance.

Based on the results of the initial field survey, consultation will be held with representatives of the National Museum to review findings and identify possible secondary initiatives.

6.4 ASSESSMENT OF IMPACTS AND MITIGATION MEASURES

The identification of specific impacts and appropriate mitigation measures as a result of airport construction, operation, and maintenance at the Laguindingan site will be dependent upon the findings and preliminary determinations of the Feasibility and Environmental Assessment Studies.

6.5 PREPARATION OF THE DRAFT EA/EIS

A Draft EA/EIS will be prepared for submission to USAID and DENR-EMB for comments and review. An application for the ECC will accompany the Draft EA/EIS which is submitted to DENR-EMB.

6.6 SCHEDULE

The Preliminary Feasibility Study was submitted on July 11, 1991 and is undergoing review at the present time. Other deliverables are expected to be completed in a timely manner (Table 2) according to the following schedule:

August 5, 1991	Submission of Scoping Report
September 10, 1991	Submission of Draft EA/EIS to USAID and DENR- EMB
October 4, 1991	Receipt of Review Comments
October 10, 1991	Presentation of Findings
October 15, 1991	Submission of Final EA/EIS

Table 2
SCHEDULE OF ACTIVITIES
ENVIRONMENTAL ASSESSMENT

	JUNE					JULY				AUGUST					SEPTEMBER				OCTOBER				NOVEMBER						
	1	8	15	22	29	6	13	20	27	3	10	17	24	31	7	14	21	28	5	12	19	26	2	9	16	23	30		
1. Initial Reconnaissance, Literature Survey																													
2. Preparation for Scoping Sessions																													
3. Scoping Session																													
4. Preparation of Scoping Report																													
5. Data Collection, Field Surveys																													
6. Assessment of Impacts & Identification of Mitigation Measures																													
7. Preparation of Draft EA/EIS																													
8. Receipt of Review Comments																													
9. Presentation of Findings																													
10. Preparation of Final EA/EIS																													

15

APPENDIX A

**ATTENDANCE LISTS FOR SCOPING SESSIONS
& LIST OF ACRONYMS AND ABBREVIATIONS**

SCOPING SESSION
ATTENDEES
 Quezon City
 July 15, 1991

NAME	ORGANIZATION	ADDRESS	PHONE NO.
1. Paul Sörensen	LBII	Makati	812-1646
2. Eugene G. Sevilla	LBII	Makati	812-1646
3. Steve Doerr	LBII	Makati	812-1646
4. Mark E. Raabe	LBII	Makati	812-1646
5. Michael Ross	LBII	Makati	812-1646
6. Bobby Salazar	LBII	Makati	812-1646
7. Manuel V. De Leon	ATO	Pasay City	831-1021
8. Datu Poncio Quinna	TRICAP	Ninoy C. Aquino Park, Q.C.	97-26-19
9. Desiderio Coronel	TRICAP	Ninoy C. Aquino Park, Q.C.	97-26-19
10. Raphael S. Lavidés	DOTC/ATPD	Philcomsen Bldg, Ortigas Ave., Pasig	631-8666 loc. 211
11. Filipina L. Larracas	DOTC/ATPD	Philcomsen Bldg, Ortigas Ave., Pasig	631-8666 loc. 211
12. Felicísimo C. Pangilinan, Jr.	DOTC/ATPD	Philcomsen Bldg, Ortigas Ave., Pasig	631-8666 loc. 211
13. Linda Quiocson	EMB	Quezon City	97-46-98
14. Donna Reyes	Miriam-PEACE	Katipunan Road, Diliman, Q.C.	99-73-30
15. Eusebio Z. Dizon	National Museum	Old Congress Bldg., Manila	47-77-97
16. Angel P. Bautista	National Museum	Old Congress Bldg., Manila	47-77-97
17. Antonio Malones	National Museum	Old Congress Bldg., Manila	47-77-97
18. Greg Carmichael	CCSC/CODA	Central Bank Bldg., Manila	58-54-94
19. Carman Davila	CCSC/CODA	Central Bank Bldg., Manila	58-54-94
20. Jocelyn Daway	USAID	RMC Bldg., Manila	59-75-76
21. M. P. Haresco	PHIVIDEC Industrial Authority	Makati	815-30-27
22. Elizabeth Sibuto	PHIVIDEC Industrial Authority	Makati	815-30-27

**SCOPING SESSION
ATTENDEES
Iligan City
July 17, 1991**

NAME	ORGANIZATION	ADDRESS	PHONE NO.
1. Paul Sörensen	LBII	Makati	812-1646
3. Steve Doerr	LBII	Makati	812-1646
4. Mark E. Raabe	LBII	Makati	812-1646
5. Michael Ross	LBII	Makati	812-1646
6. Archie Monterola	Manila Bulletin	Iligan City	
7. Camilo P. Cabili	Mayor	Iligan City	
8. Peorenilo Amesola	Mayor	Municipality of Linamon	20-806
9. Perlita P. Libardos	Mayor	Municipality of Maigo	
10. Warlino M. Relova	Mayor	Municipality of Bacolod	
11. Myrone B. Rico	Mayor	Municipality of Kauswagan	
12. Ursecio R. Ridao	Mayor	Municipality of Kolambugan	
13. Jan Maramin	Lanao Press/Radio-TV	Iligan City	
14. Mamole A. Pangandaman	DTI	Iligan City	21-116
15. Jaime B. Paalisbo	DTI	Iligan City	2-11-16
16. Annable E. Mohamad	DTI	Iligan City	21-46
17. Camar A. Umpa	MSU-IIT	Iligan City	20-996
18. Vicente Benolerao	MSU-IIT	Iligan City	20-998
19. Alongan A. Mangorsi	MSU-IIT	Iligan City	21-358
20. Lino de la Cruz	GMA-12 Phil. Star	Iligan City	
21. Pons S. Naanep	USAID	RMC Bldg., Manila	
22. Melchor Ancla	USAID	RMC Bldg., Manila	
23. Rommel G. Rebolledo	PIA-Iligan	Iligan City	21-093
24. Jonalyn L. Porras	DENR	Iligan City	20-856
25. Edenita R. Macas	MPDC-Linamon	Municipality of Linamon	
26. Gabino B. Belisario	PEC	Municipality of Linamon	
27. Rogelio Javier	PAL-Iligan	Iligan City	
28. Merlinda H. Hussein	NEDA XII	Cotabato City	29-12
28. J. Noel A. Arquiza	Office of Cong. Badelles	Iligan City	20-669
29. Mariano Badelles, Sr.	Congressman	Quezon City	21-014/922-9156

SCOPING SESSION
 ATTENDEES
 Iligan City
 July 17, 1991

NAME	ORGANIZATION	ADDRESS	PHONE NO.
30. Eutiquio C. Cagapan	LGM Group	Iligan City	25-529
31. P.B. Mejia	LGM Group	Iligan City	20-529
32. S. Q. Trinidad	PEC	Iligan City	21-373
33. U.F. Celdran	PEC	Iligan City	
34. Matthew R. Uy	NAPOCOR		21-981
35. Aldrico T. Mantus	PCU Gov., Reg. X	Cagayan de Oro	35-30/22-91
36. Jimmy Semaña	Councilman	Iligan City	20-533

SCOPING SESSION
ATTENDEES
Cagayan de Oro
July 18, 1991

NAME	ORGANIZATION	ADDRESS	PHONE NO.
1. Jess Evidente	LBII	Makati	88-06-80
2. Paul Sörensen	LBII	Makati	812-1646
3. Steve Doerr	LBII	Makati	812-1646
4. Mark E. Raabe	LBII	Makati	812-1646
5. Michael Ross	LBII	Makati	812-1646
6. Robert Jara	LBII	Makati	812-1646
7. Ramir M. Balquin	NEDA-X	Cagayan de Oro	61-61/39-92
8. Alan L. Olavides	NEDA-X	Cagayan de Oro	
9. Ro-Ann A. Bacal	NEDA-X	Cagayan de Oro	61-61
10. Roy G. Gamosa	ATO	Manila	
11. Artemio Y. Garcia	ATO		
12. Emanuel H. Costelo	ATO		
13. Rodulfo Avila	ATO	Cagayan de Oro	
14. Rogelio Acub	NEA-IV		
15. Carmelita Marban	DENR	Cagayan de Oro	
16. Jose P. Gatus	DENR-X	Cagayan de Oro	62-43
17. Elson Elizaga	DTI-X	Cagayan de Oro	36-04/38-91
18. Lorna S. Marcoso	DTI-X	Cagayan de Oro	38-91
19. Ninfa U.A. Albania	DTI-X	Cagayan de Oro	36-04
20. Elvira A. Cajigas	DTI-X	Cagayan de Oro	36-04
21. Adele L. Bajao	DTI-X	Cagayan de Oro	36-04/42-63
22. Liza V.M. Alcantar	DTI-X	Cagayan de Oro	36-04/42-63
23. Eliza A. Pbillore	DTI	Misamis Oriental	39-43
24. Alfonso P. Alamban	DTI	Misamis Oriental	33-67
25. Prudencio T. Plaza, Jr.	CATIMCO	Cagayan de Oro	62-92
26. Lina G. Kwong	XU	Cagayan de Oro	
27. Dulce R. Dawang	XU	Cagayan de Oro	
28. Edd L. Tadulan	XU-Engineering	Cagayan de Oro	37-42
29. Joy A. Mabaylan	XU-Engineering	Cagayan de Oro	37-42
30. Evangeline B. Agan	HLURB-X	Cagayan de Oro	47-31
31. Pedro G. Clarin	Councilman	Municipality of Laguindingan	
32. Nancy Madjos	Councilwoman	Municipality of Laguindingan	35-64

**SCOPING SESSION
ATTENDEES
Cagayan de Oro
July 18, 1991**

NAME	ORGANIZATION	ADDRESS	PHONE NO.
33. Orville J. Abellanosa	Mayor	Municipality of Laguindingan	
34. Oliver S. Actub	Mayor	Municipality of Opol	
35. Alfredo Tan	Mayor	Municipality of El Salvador	23-63
36. Hernando A. Caburatan	Mayor	Municipality Initao	
37. Dennis L. Roa	Vice Mayor	Municipality of Naawan	
38. Emmanuel O. Abejuela	LGU	Cagayan de Oro	36-22
39. Arnel Leo Ab. Tilos	LGU	Municipality of Laguindingan	
40. Nicky V. Peralta	NGO	Cagayan de Oro	61-61
41. Francisco Camacho, Jr.	PDS	Misamis Oriental	35-16
42. Rey Tolinero	PDS	Misamis Oriental, PDO-II	35-16
43. Josephine G. Sanchez	SBS-CS	Cagayan de Oro	65-77
44. Lourdes Rendon	SBS-CS	Cagayan de Oro	65-77
45. Melchor Arda	USAID	RMC Bldg., Manila	59-75-76
46. Pons Naanep	USAID	RMC Bldg., Manila	521-7116
47. Leopoldo M. Cadete	DPWH-X	Balas, Cagayan de Oro	44-82
48. Hyessa V. Soroño	MINPARRD	Cagayan de Oro	48-81
49. R. C. Balandra	POPCOM	Cagayan de Oro	30-85
50. Norman E. Nabatar	ORO CHAMBER	Cagayan de Oro	64-92
51. Guido Alfredo A. Delgado	ORO CHAMBER	Cagayan de Oro	64-92
52. Perfecto Arribas	PHIVIDEC Industrial Authority	Tagoloan, Misamis Oriental	194
53. Juanito Dator	PHIVIDEC Industrial Authority	Tagoloan, Misamis Oriental	194
54. Remedios Labgo	Group Foundation	Cagayan de Oro	32-56
55. Oscar H. Cinco	RCDP		49-86
56. Jorie J. Bingona	CEO	Cagayan de Oro	36-26
57. Rolan Acompañado	MASI-SRECI	Cagayan de Oro	65-16
58. Herbie Gomez	Mla. Chronicle/Goldstar		
59. Joey Macalaban	Goldstar		
60. Richel Umel	Daky Post	Cagayan de Oro	
61. Cesar Taberivero	In Term Media Prod.	Ozamis City	

LIST OF ACRONYMS & ABBREVIATIONS

ATO	AIR TRANSPORTATION OFFICE
CATIMCO	CAGAYAN TIMBER COMPANY
CCSC/CODA	CONSTRUCTION CONTROL SERVICE CORPORATION/COMMITTEE ON OFFICIAL DEVELOPMENT ASSISTANCE
CEO	CITY ENGINEER'S OFFICE
CPDO	CITY PLANNING AND DEVELOPMENT OFFICE
DA	DEPARTMENT OF AGRICULTURE
DAR	DEPARTMENT OF AGRARIAN REFORM
DENR	DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES
DMPI	DEL MONTE PHILIPPINES, INCORPORATED
DOTC/ARPD	DEPARTMENT OF TRANSPORTATION AND COMMUNICATIONS/ AIR TRANSPORT PLANNING DIVISION
DPWH	DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS
DTI	DEPARTMENT OF TRADE AND INDUSTRY
EMB	ENVIRONMENTAL MANAGEMENT BUREAU
HLURB	HOUSING AND LAND USE REGULATORY BOARD
LBII	LOUIS BERGER INTERNATIONAL, INC.
LGU	LOCAL GOVERNMENT UNIT
MASS-SPECC	MINDANAO ALLIANCE OF SELF-HELP SOCIETIES – SOUTHERN PHILIPPINES EDUCATIONAL COOPERATIVE CENTER
MINPARRD	MINDANAO TECHNICAL ASSISTANCE PROGRAM FOR AGRARIAN REFORM & RURAL DEVELOPMENT
MIRIAM-PEACE	PUBLIC EDUCATION AND AWARENESS CAMPAIGN FOR THE ENVIRONMENT, MIRIAM COLLEGE
MPDC	MUNICIPAL PLANNING AND DEVELOPMENT COUNCIL
MSU-HIT	MINDANAO STATE UNIVERSITY, INSTITUTE OF INDUSTRIAL TECHNOLOGY
NAPOCOR	NATIONAL POWER CORPORATION
NEA-IV	NATIONAL ELECTRIFICATION ADMINISTRATION, REGION IV
NEDA	NATIONAL ECONOMIC AND DEVELOPMENT AUTHORITY, REGION XII
NGO	NON-GOVERNMENT ORGANIZATION
ORO CHAMBER	CHAMBER OF COMMERCE, CAGAYAN DE ORO
PAL	PHILIPPINE AIRLINES
PCU	PROVINCIAL COORDINATING UNIT
PCII	PHILIPPINE CHAMBER OF COMMERCE AND INDUSTRY
PDS	PROVINCIAL DEVELOPMENT STAFF
PEC	PEOPLE'S ECONOMIC COUNCIL
PHIVIDEDEC	PHILIPPINE VETERANS INVESTMENTS AND DEVELOPMENT CORPORATION
PIA	PHILIPPINE INFORMATION AGENCY
PIE-MO	PHILIPPINE INDUSTRIAL ESTATE – MISAMIS ORIENTAL
POPCOM	COMMISSION ON POPULATION
PSC	PUBLIC SERVICE COMMISSION
Q.C.	QUEZON CITY
RCDP	REGIONAL CITIES DEVELOPMENT PROGRAM
RDC	REGIONAL DEVELOPMENT COUNCIL
SBS-CS	SBS CONSULTANCY SERVICES
TRICAP	TRIBAL COMMUNITIES OF THE PHILIPPINES
USAID	UNITED STATES AGENCY FOR INTERNATIONAL DEVELOPMENT
XU	XAVIER UNIVERSITY

APPENDIX B
INVITATION LIST TO SCOPING SESSIONS

**MAILING LIST
ENVIRONMENTAL SCOPING SESSION
FEASIBILITY STUDY AND MASTER PLANNING FOR
CAGAYAN DE ORO - ILIGAN AIRPORT**

✓ Dr. Chua Thia-Eng
Director, Coastal Area Management Program
ICLARM
Bloomingdale Bldg., 205 Salcedo St.
1299 Makati, Metro Manila

Professor Edgardo D. Gomez
Director & Professor of Marine Biology
Marine Science Institute
University of the Philippines
Diliman, Quezon City, 1101

✓ Atty. Marvic Leonen
Legal Rights and Natural Resources Center, Inc.
Rm. 106, Philippine Social Science Center Bldg.
Don Mariano Marcos Avenue
Quezon City, 1101

✓ Antonio Claparols
Ecological Society of the Philippines (ESP)
21 EDSA, Guadalupe
Makati, Metro Manila, 1299

Dr. Domingo A. Madulid
Chief Curator, Botany Division
National Museum
Executive House Bldg.
Manila

✓ Atty. Antonio C. Oposa, Jr.
Philippine Ecological Network (PEN)
c/o 1518 Leon Guinto St.
Malate, Manila

✓ Atty. Domingo C. Abadilla
Society for a Better Environment (SBEI)
99 Times St.
Quezon City

South East Asian Regional Institute
for Community Development (SEARICE)
2339 Espiritu St.
Malate, Manila

Chip Fay, Executive Director
Environmental Policy Institute
Room 100-D
Philippine Social Science Center
Commonwealth Ave.
Quezon City, M.M.

Chris Paez
PHILDHARRA
20 J. Escaler
Loyola Heights
Quezon City, 1108

Com. Nathaniel Von Einsiedel
Philippine Institute of Environmental
Planners (PIEP)
c/o SURP, UP Diliman
Quezon City

✓ Dr. Amor Torres
Participatory Res., Org. of Com. & Edu.
towards Struggle for Self-Reliance
(PROCESS)
54 Estrella St.
Makati, Metro Manila

Green Forum
3rd Flr. Liberty Building
Pasay Road
Makati, Metro Manila

Mr. Baltazar Endriga
Bishop-Businessmen's Conference
Ecology (BBC)
Rm. 2 Caritas Bldg.
Jesus St., Pandacan
Manila

Mr. Hernando Pacheco
Nat'l Action for the Transformation
& Rehabilitation of the Environment
(NATURE)
5 Flamingo St.
Greenmeadows, Quezon City

✓ Mr. Maximo Kalaw
Haribon Foundation
Suite 306 Sunrise Condominium
226 Ortigas Ave., Greenhills
San Juan, Metro Manila

Dr. Bindu Lohani
Office of the Environment
Asian Development Bank
Roxas Blvd., Manila

Mr. Ernesto Garilao
Executive Director
Philippine Business for Social Progress (PBSP)
Philippine Social Development Center
Magallanes corner Real Streets
Intramuros, Manila, 102

Ramon J. Miclat, Fisheries Biologist
Bureau of Fisheries & Aquatic Resources
2nd Floor, Arcadia Bldg.
Quezon Ave., Quezon City

✓ Tribal Communities of the Philippines (TRICAP)
Ninoy Aquino Nature Center
Quezon Ave., Quezon City

Mr. Michael Kingery
Mindanao Development Project
USAID
Ramon Magsaysay Bldg.
Roxas Boulevard
Manila

Mr. John Starnes
Office of Capital Projects, USAID
Ramon Magsaysay Bldg.
Roxas Boulevard
Manila

Fr. Francisco Y. Panol
Conservation and Resource Management
Foundation (CRMF)
11th Floor, Country Space Condominium
Gil Puyat Ave., Makati

Environmental Policy Institute
90-D Matahimik St.
Teacher's Village
Quezon City

Fr. Busch
Environmental Officer
Columban Fathers
1857 Singalong (corner Remedios and Singalong)
Manila

Dr. Delfin Ganapin
Assistant Secretary
Dept. of Environment and Natural Resources
Visayas Avenue
Quezon City

Ms. Ella Deocadiz
OIC, EMB
Dept. of Environment and Natural Resources
6th Floor Philippine Heart Center
East Avenue, Diliman
Quezon City

Mr. Romeo Taray
EMB, EIA Division
Dept. of Environment and Natural Resources
6th Floor Philippine Heart Center
East Avenue, Diliman
Quezon City

Mr. Pons Naanep
Office of Capital Projects
USAID
Ramon Magsaysay Bldg.
Roxas Blvd., Manila

Dr. Ernesto L. Dizon
National Museum
Archaeology Division
Executive House Bldg.
P. Burgos St., Manila

Gen. Oscar Alejandro
Chief, Air Transportation
Office (ATO), DOTC
Airport Road
Pasay City

Raphael S. Lavidés
Chief, Air Transport Office, DOTC
Planning Division
Philcomcen Bldg.
Ortigas Ave.
Pasig, M.M.

Felicisimo C. Pangilinan, Jr.
Transport Planner
Air Transport Planning Division, DOTC
Philcomcen Bldg.
Ortigas Ave.
Pasig, M.M.

Ms. Teresita Valdez
Asst. Secretary for Planning, ATO/DOTC
Philcomcen Bldg.
Ortigas Ave.
Pasig, M.M.

Veronica A. Dato
Advertising/Promotions Officer
PHIVIDEC Industrial Authority
4th Flr., DAO I Bldg., Salcedo St.
Legaspi Village, Makati,
Metro Manila

Gregory Carmichael
Construction Control Services Corporation (CCSC)
c/o CODA (Committee on Official Development Assistance)
14th Floor, Central Bank Building
Manila

Corman Davila
CCSC/CODA
14th Floor, Central Bank Building
Manila

Mr. Wilbur Dee
Program Director
Integrated Protected Area System
NAPWNC, Ninoy Aquino Parks and Wildlife Nature Center)
Quezon City

✓ Mr. Arne Jensen
Program Director, ICBP
c/o Haribon Foundation
Richbelt Tower
17 Annapolis St., Greenhills
San Juan, M.M.

Carolina Winebrenner
World Environmentalists for Clean
Air Network (WECAN)
c/o B-72 Olympia Towers
7912 Makati Avenue
Makati, M.M.

Dean Angelina P. Galang
Public Education and Awareness
Campaign for the Environment (PEACE)
EP. Department, Miriam College
Loyola Heights, Quezon City

Dr. Helen Mendoza
Concerned Women of the Philippines
Committee on Environmental Concern (CWP)
19 Apo Street
Quezon City

✓ Sharon Ma. S. Espoa
Green Forum - Phils.
3rd Floor, Liberty Bldg.
835 Pasay Road, Makati

Nelson Lopez
Coastal Resources Management Leader
Fishery Sector Program, PMO/Dept. of Agriculture
4th Floor, Arcadia Building
Quezon Ave., Quezon City

✓ Fr. Ben Nebres, S.J.
Xavier Science Foundation, Inc. (XSF)
Xavier House
2707 Pedro Gil St.
Sta. Ana, Manila 1009

Ninfa U. Along - Albania
Regional Director
Department of Trade and Industry
Region X
Luna - Corrales
Cagayan de Oro City

Mindanao Alliance of Self-
Help Societies (MASS)
67 Tiano Bros., Pacan St.
Cagayan de Oro City

Sr. Romualda Jatico, SSA
Chairperson
Mindanao Grass Roots Development Institute, Inc.
(MINDANAO GRADE-IN)
Dongallo Hilltop
Camaman-an
Cagayan de Oro City, 9000

Fr. Francis Madigan
Xavier University
Cagayan de Oro City

✓ Fr. Emeterio Barcelon, S.J.
Project Director
Mindanao Lumad and Muslim Development Center
(MILAMDEC)
Xavier University
Cagayan de Oro City, 9000

Ms. Dulce Dawang
Chairperson, Biology Department
Xavier University
Cagayan de Oro City

Mr. Raoul Geolleque
Regional Technical Director
Environmental Management Division
DENR, Cagayan de Oro City

Mrs. Carmelita Marval
Chief, Protected Areas and Wildlife Division
DENR, Cagayan de Oro City

Perla M. Magsalay
National Coordinator
Asian Wetlands Bureau Philippines Foundation
4th Floor, Albulario Bldg.
Gen. Maxilom Avenue
Cebu City 6000

Ms. Mamole Pangandaman
Regional Director, DTI
Iligan City

Engr. Jaime B. Pa-alisbo
Chief Trade Industry Development Specialist
Department of Trade and Industry
2nd Floor DBP Bldg.
Pala-o, Iligan City

Horace B. Abear
Branch Manager
Philippine Airlines, Inc.
Iligan City

Prof. Lolita Ungui/Prof. Josefa Villanueva
Environment Specialists
College of Science and Mathematics
Mindanao State University
Institute of Industrial Technology
Iligan City

Mr. Ali M. Bari
OIC, PENRO, DENR
Lanao del Norte

Domingo Estrada
Barangay Captain
Barrio of Moog

Vicky Andrada Dato
AD/Promo Office
PHIVIDEC Industrial Authority
Tagoloan, Misamis Oriental

Kenneth A. Prussner
Office of Natural Resources, Agriculture and
Decentralization (ONRAD)
USAID
Ramon Magsaysay Bldg.
Roxas Boulevard, Manila

Emmanuel Voulgaropoulos
Office of Population, Health and Nutrition (OPHN)
USAID
Ramon Magsaysay Bldg.
Roxas Boulevard, Manila

Howard 'Pat' Johnson
Construction Control Services Corporation (CCSC)
c/o CODA (Committee on Official Development Assistance)
14th Floor, Central Bank Bldg., Manila

The persons on the list below from Region XII and vicinity were identified by the Staff of the Region XII DTI to receive an invitation to the Scoping Session held on 17 July 1991 in Iligan City.

Mr. Ibrahim K. Guiamadel, Regional Director, DTI-XII
Gutierrez Mangansakan, Regional Director, NEDA-XII
Mr. Ludovico Badoy, Chairman RDC-XII
Mr. Macorro Macumbal, Regional Director, DENR-XII
Mr. Bienvenido Almirante, Regional Director, DA-XII
Atty. Francisco L. Abalos, Provincial Governor, Lanao del Norte
Hon. Camilo P. Cabili, City Mayor, Iligan City
Hon. Pedrinilo E. Amesola, Municipal Mayor, Linamon, Lanao del Norte
Hon. Myron B. Rico, Municipal Mayor, Kauswagan, Lanao del Norte
Hon. Warlino b. Relova, Municipal Mayor, Bacolod, Lanao del Norte
Hon. Perlita Libardos, Municipal Mayor, Maigo, Lanao del Norte
Hon. Ursecio Ridao, Municipal Mayor, Kolambugan, Lanao del Norte
Hon. Mariano Ll. Badelles, Congressman, District I, Lanao del Norte
Mr. Manuel F. Celdran, Chairman, People's Economic council, Iligan City
Mr. Juan A. Quintos, Jr., President, Iligan Bay Chamber of Industries
Dr. Camar A. Umpa, Chancellor, MSU-Iligan Institute of Technology
Mr. Gavino B. Belisario, Chairman, People's Economic council, Linamon, Lanao del Norte
Engr. Reynaldo G. Lomardo, President, Chamber of Commerce and Industry Foundation of Iligan, Inc.
Engr. Gregorio Tan, Chairman, People's Economic Council, Kauswagan
Mr. Virgilio T. Kwan, Chairman, People's Economic Council, Maigo
Mr. Salvador Pacho, Chairman, People's Economic Council, Kolambugan
Mr. Ali M. Bari, PENRO, Dept. of Env. and Nat. Resources, Iligan City
Engr. Edwing Dela Cruz, Port Manager, Phil. Ports Authority, Iligan City
Mr. Ali Dimapinto, Manager, Air Transportation Office, Balo-i
Mr. Horace Abear, Manager, Philippine Airlines, Iligan City
Mr. Henry c. Dy, Vice Chairman, People's Economic Council, Iligan City
Mr. Sotero Q. Trinidad, Vice-Chairman, People's Economic Council, Iligan City
Mr. Stephen D. Sy, President, Lanao Filipino Chamber of Industries, Iligan City
Engr. Policarpo C. Benitez, Jr., Senior Vice President, National Steel Corp., Iligan City
Dir. Alongan Mangorsi, MSU-IIT/CESDEV, Iligan City
Datu Minah Dianalan, Bureau fo Customs, Iligan City
Mr. Srafin Plaza, PAO, PAO, Dept. Agriculture, Tubod, Lanao del Norte
Mr. Mittaman T. Arumpac, PARO, Dept. of Agrarian Reform, Iligan city
Engr. Sinaolan T. Macarambon, Distric Engineer, DPWH-LN, Iligan City
Dr. Aleho A. Yañez, Chairman, Sangguniang Panglungsod, Iligan City
Kag. Franklin M. Quijano, Sangguniang Panglungsod, Iligan City
Kag. Jaime P. Semaña, Sanguniang Panglungsod
Ms. Natividad Maki, DSWD, Iligan city
Engr. Bienvenido Badelles, Vice Chairman, People's Economic Council, Iligan City.

The persons on the list below from Region X and vicinity were identified by the Staff of the Region X DTI to receive an invitation to the Scoping Session held on 18 July 1991 in Cagayan de Oro.

Mr. Jose Gapas, DENR-X
Mr. Jos Gatus, DENR
Mr. Amante Siapno, DA-X
Mr. Ernesto Balangue, NEDA-X
Mr. Abdussabor Sawadjaan, DOTC-X
Mr. Artemio Garcia, ATO
Mr. Evangeline Agan, HLURB
Mr. Anastacio Limbo, DAR-X
Mr. Julio Luspo, DPWH-X
Mr. Jesus Apepe, PIA-X
Mr. Romeo Balandra, President
Organization of Regional Directors, Region X
Gov. Vicente Emano
Mr. Jun Camacho, PDS
Mr. Maning Abejuela, CPDO
Gov. Ernesto Tabios, Bukidnon
Gov. Antonio Gallardo, RDC-X
Mr. Guido Alfredo Delgado, RDC-X
& President of ORO Chamber
Mr. Braulio Mañus, Chamber of Industries
Mr. Samuel B. Sabenicio, SBS Consultancy Services
Mr. Alarico Lim, Phil. Export Foundation
Mr. Epimaco Galero, People's Economic Council (PEC)
Regional Chairman
Mr. Dionisio Zafra, JR. PEC
Prov'l. Chairman
Dr. Amanda Te
Dr. Mike Costelo
Mr. Aldrico Mañus, Philippine Chamber of Commerce and Industry (PCCI)
Mr. Roberto Togle-Resins Inc.
Mr. Gabriel Evangelista, Public Service Commission (PSC)
Mr. Adrian Pabayo, Del Monte Philippines, Incorporated (DMPI)
Brig. Gen. Juanito Dator, PIE-MO
Brig. Gen. Perfecto Arribas, PIE-MO
Mr. Sixto Morales, PAL
Mr. Milbert Macarambon, Labor Sector
Monsignor Rey Monsanto

APPENDIX C
MINUTES OF SCOPING SESSIONS

NATIONAL ENVIRONMENTAL SCOPING SESSION
Feasibility Study and Master Planning, Cagayan de Oro - Iligan Airport Project
AIT Hotel, Quezon City
July 15, 1991

The current status of the Feasibility Study and Master Planning, Cagayan de Oro - Iligan Airport Project was presented. This included a description of the proposed alternatives which had been identified to date as well as a summary of the known environmental impacts. Slides were shown which depicted the environmental settings of each site. The meeting was then opened for questions and comments from the attendees. Some of the following minutes have been paraphrased.

Ms. Donna Reyes, Miriam College-PEACE

- My concern is with the agricultural land. There are agricultural lands on and around the airports. Do you intend to buy the agricultural land?

LBII response

- The planned improvement projects at Lumbia include a hollow block concrete fence which will mean that the fields inside the fence cannot be cultivated. No additional properties are to be purchased since the capital improvements are all on existing airport property.
- The new site [at Laguindingan] would have to be acquired. This is also true of the site at Iponan. At Linamon, the land has already been purchased.

status of these?

Ms. Donna Reyes

- There are people living at these sites. It is necessary to carry on discussions with them about the land acquisition otherwise there are misunderstandings and problems which develop. Contact with them should be part of the study.

LBII response

- In the socio-economic aspects of the EA there will be perception surveys conducted by a sociologist. Questions of land acquisition for the project can be brought up as part of this survey.

36

Eusebio Z. Dizon, National Museum

- Will there be an archeological investigation of your sites? And, if so, when?

LBII response

- Yes, there will be an archeological investigation. Mel Aquilar, who is also helping out on the Aurora Roads Project [of USAID, PAPS], will conduct the survey for the airport project.

Eusebio Z. Dizon

- On a previous occasion we agreed to carry out an archeological survey for LBII but later learned they did not need one even though a contract had been drawn up. We do not know what happened to the archeological assessment on that project. We do not feel it is worth attending these meetings when nothing comes of them.

LBII response

- [PDS] I cannot answer to that as I am not familiar with the details, but I can assure you that archeological investigations are part of our study. The Makar Wharf Draft EA is out and it does address archeological issues.
- [MR] The archeological site at Makar Wharf has long since been covered with concrete and it was concluded that a literature survey would be adequate for the EA.

E. Z. Dizon

- Just six kilometers away [from Makar Wharf] are good archeological sites from the new stone age.

LBII response

- [MR] We referenced that these areas needed more study.

??

31

E. Z. Dizon

- I would like to discuss this with you later.

Datu Poncio Quina, TRICAP

- It is very important to know if there are tribal Filipinos or sensitive cultural communities in the areas affected by the airport improvements. I will send a copy of my remarks to LBII.

LBII response

- Be assured that the issues of tribal Filipinos and/or unique cultural communities found to be affected by the project will be addressed in the EA. Written submissions will be included in the report of this meeting.

Linda Quiocson, DENR-EMB

- I think the remarks of the National Museum representative are useful. Someone from the museum should have the opportunity to evaluate the EA on the archeological issue.

Representative of PHIVIDEC

- Have you carried out studies which show where the people come from who will use this airport?

LBII response

- The service area is larger than shown on the map [taped to the wall]. We have done studies on where the aircraft passengers come from.

Greg Carmichael, CCSC

- Are you going to take any aerial photos? Particularly of the airport sites? And, have you worked up "wind-roses" for the area?

LBI response

- Ongoing companion projects such as the Industrial Master Plan for the Corridor will be using aerial photos and there will be a sharing of information and data. Wind roses have been prepared as part of the technical studies. Wind direction and wind speeds analyses indicate that 90% of the study area is suitable for an airstrip in almost any orientation.

Representative of PHIVIDEC

- Are any new roads to be constructed to serve the airport? Are impacts of these roads covered in the EIA?

LBI response

- A new access road would be required for the Linamon site. The Iponan site would require upgrading of the existing road. A new road to replace the existing dirt road will be required at the Laguindingan site. Any such transportation improvements will be covered in the assessment.

Linda Quiocson

- The project will require an Environmental Compliance Certificate before any construction can begin. The ECC is granted only after the EMB has had a chance to review the assessment documents and their concerns addressed.
- (There followed a discussion between Steve Doerr and the two representatives of PHIVIDEC on several questions concerning technical aspects of airport development including analyses of auto traffic patterns, service areas, effects on industry, noise, air pollution, and so forth.)

Unidentified participant

- If some adverse impacts are identified will there be funding to deal with their mitigation?

LBII response

- Mitigation measures will be addressed in the EA, but we cannot determine who will bear the costs of implementing them. The decision-making authorities must determine whether they are affordable. Such determinations may decide whether an airport is to be built, improved, enlarged, and so forth.

Representative of PHIVIDEC

- Can you identify who will package the financing of any of the mitigation measures?

LBII response

- Determinations of financing agencies is beyond the scopes of the EA; however, the question is one which will be looked into.

SCOPING SESSION MINUTES
17 July 1991
Cafe Hermoso
Iligan City, Lanao del Norte

The meeting opened with the same format as used at the national meeting before turning to questions and comments from the floor. Some of the minutes below are paraphrased.

Congressman Mariano Badelles, Sr.

- You have not indicated that you are studying the improvement of airport facilities in areas other than in Cagayan de Oro and Iligan City. What about the areas from Iligan to Lanao del Sur, Lake Lanao to Pagadian?

LBII response

- Those areas are not included in the study as outlined in our Terms of Reference.

Mayor Camilo P. Cabili

- We should be improving airport facilities in areas which presently are not served, not advancing the already developed areas of Cagayan de Oro and Iligan.

LBII response

- We are constrained by our Terms of Reference which specify the study area; also we have identified where the majority of the people who use the service come from.

Sotero Q. Trinidad, PEC

- By developing Lumbia, there is no improvement in service for Lanao Sur, Pagadian, and Iligan. We believe that Lumbia serves only the inner part of Misamis Oriental Province and Cagayan de Oro City. You are improving facilities of an existing airport while we in Lanao are neglected. We propose you put up an airport here, now, at Linamon. We in Lanao del Norte and Lanao del Sur are deprived. We are too far away from Cagayan de Oro, from Lumbia Airport.

LBII response

- Thank you for your comments.

Congressman Badelles

The study is concentrated in an area already developed. I wish to point out that it seems to me you are making the rich richer and the poor poorer. The people in Lanao Sur would say they are third class citizens. Why don't you give us the same opportunities for development as has been given Cagayan de Oro City and the other side [of Mindanao]? Let us be honest about it.

LBII response

- Your remarks are recorded and will become part of the record. Thank You!

Alongan A. Mangorsi, MSU-IIT

- Linamon is quite big. Looking backward [toward the inner part of the province] from Iligan toward the Coconut groves the property has been acquired up to the road to Matungao. I think the Governor agreed that we realign that road. We will be spending too much money to build it up. We propose that Linamon Airport must be included in the study.

LBII response

- At the present time it is considered one of the alternatives.

Congressman Badelles

- Yes, in the last congress it [Linamon Airport] was included. The Linamon Airport has been approved. The Department of Public Works and Transportation [sic] are trying to reconcile the cost. We hope you include this in your program for [airport] development because it is really difficult for us here, especially the people in the inner part of Lanao del Sur, to go to Lumbia Airport.

42

LBII response

- Thank you for your comments. But we would like to tell you here that it is not our decision where to build an airport. I reiterate the point that we are here to conduct a survey on the scope of environmental issues.

Mayor Cabili

- I believe when it comes to the economic factor, it [the airport at Linamon] would have a great impact from Pagadian, Iligan, Lake Lanao, and Cotabato. It will help the people in these areas. As we have said, we are neglected. You are putting all the developments in a place which is well-developed. We don't have even a road. So, putting a better airport in Cagayan de Oro [sic] without considering giving us one here, that is too much. We don't want a Kennedy Airport. We only want a landing field.
- In regards to your presentation of alternatives, I agree with the Congressman. We in Iligan feel that we need to improve the airport at Linamon first because land has been acquired and the construction has been started and is half-way completed. There can be no doubt that Linamon is a better site than the existing airport at Balo-i. And I think even our experts agreed that [improving] the existing airport at Balo-i is not possible based on three facts: 1) it is too crowded, 2) it is risky landing there, and 3) . . .[?]. But to clarify something, are you thinking of an international airport? Cagayan de Oro airport serves the Northern Mindanao Corridor and the other side. Are you thinking of that kind of airport?

LBII response

- We are trying to improve the airport facilities for the Corridor [from Jasaan to Kolambugan].

J. Noel A. Arquiza (office of Congressman Badelles)

- In reacting to Alternative 1. This is really not an alternative because lengthening the runway is practically impossible both at Balo-i and at Lumbia. We can see the hazard there. At Lumbia there is a range of mountains toward the hinterland. So, that leaves us with Alternatives 2, 3, and 4.

- First the Laguindingan Alternative [3 & 4]. It is better than further consideration of the two existing sites because during the approach and take-off, there is water, and from Iligan City it is much nearer. It is about 20 minutes from Iligan. But, if you are not going to build the airport at Laguindingan within the next five years, we feel that the transfer of the airport to Linamon [from Balo-i] should be done right away. Let us start it. There will be 6 - 15 years of delay in the construction of an airport at the new site which will serve both Cagayan de Oro and Iligan, so we feel we should continue the construction at Linamon. But, if you have the funds to build the airport [at Laguindingan], I won't object. But I would say we must keep that airport at Linamon. You were there and saw the place. There is no obstruction, no hazard in its approaches. It is clear both ways from one end to the other. It [the runway] can have a length of 2,800 meters compared with a maximum of 1,600 meters at Balo-i. The point is, we really need an airport, now, in Iligan! If there is some delay, my stand is really with the Congressman and the mayor of Lanao del Norte [(sic), probably meant Mayor of Iligan]. I have talked with consultants, Filipino consultants, who recommended it [construction of Linamon Airport] for the short term. We should move the airport from Balo-i to Linamon now, even if we have only 1,400 meters of runway.

LBII response

- Your remarks will become part of the minutes.

Unidentified speaker

- I understand the subject of the scoping session is for environmental assessment. If the airport will be at Laguindingan there will be jet planes. If the wind direction is east to west, when the plane approaches it would be over Cagayan de Oro; when it takes off it would be over Iligan. Would it not be too noisy for the populace of these two cities? Would it not endanger the people in these two cities?

LBII response

- On the issue of noise and safety, we have included them in our study. We are hoping the noise analysis will show that the dangerous levels will be confined to the airport premises. As to the safety of the people in Iligan, the flight pattern could easily be made to avoid that community.

44

J. Noel A. Arquiza (office of Congressman Badelles)

- Is there a possibility that your group could use local specialists who could help in the assessment? There are all these factors to consider. We, in this area, could advise you well, without bias, because we are the beneficiaries of the development. It might be advantageous to your group.

LBII response

- If you have particular persons in mind we will appreciate very much knowing of them.

Mayor Cabili

- I would like to sum up my comments on the advantage of Alternative 2, on the Linamon airport site which is strategic. I have listed the factors:
 - 1) In terms of the population which will benefit from the Linamon Airport, I think it is greater than compared to other areas.
 - 2) In terms of the proximity of population and commercial centers, there are five provinces and three or more cities benefitted. Also, it is not far from Cagayan de Oro.
 - 3) I think there was a study made of this [Item 2] and it is a matter of following it up.
 - 4) In terms of air navigation, we have shoreline [i.e., the site is near the shore]. It is relatively advantageous and it [the Linamon site] is tentatively far better than in the mountainous areas in the upper part of Lanao del Norte [as at Balo-i].

LBII response

- Thank you very much for your remarks.

45

Unidentified speaker

- I think I am in favor of the location at Laguindingan. However, I would agree with everybody here that for our immediate use and immediate needs we must have the airport at Linamon. It can serve the purpose for the next few years, until, probably, by then there will be a need to build an international airport. Laguindingan must have the technical advantage.

LBII response

- Thank you.

LBII

- I wish to reiterate that we are conducting this scoping session to bring forward environmental issues. The question is not whether to build a new airport or not. The question is, what are the environmental issues at the alternative sites. There has been no mention of them [beyond what was presented in the opening remarks]. I know it is difficult for us to get away from the idea that we want to say, "Put the airport here because we want it." But that is not what we are here to decide. That will be decided by the authorities who receive our report. We are trying to confine ourselves to environmental issues.

SCOPING SESSION MINUTES
VIP Hotel
Cagayan de Oro City
July 18, 1991

Following the opening presentation by the Environmental Coordinator as at the previous Scoping Sessions, the meeting was opened for questions and comments from the floor. Some of the responses below have been paraphrased.

Unidentified speaker

- I wish to comment that as soon as it is known that the airport is going here or there, there will be a whole army of squatters who will flock to the area. What are you going to do about that?

LBII response

- The issue of what to do about squatters is to be addressed in the EA. Your comments are useful because they alert us to a potential problem which we had not considered.

Ro-Ann A. Bacal, NEDA Region X

- I wonder if you are considering the seismological factor knowing that Mt. Hibok-hibok is in Camiguin Province and Mt. Makaturing is in Lanao del Sur. Also, There is a railway construction plan in Misamis Oriental. Have you taken that into consideration?

LBII response

- Yes, the seismological factors are part of the assessment procedures. The railway plan is being considered as part of the Industrial Master Plan for the corridor.

Romy Balandra, POPCOM Regional Director

- Have you inquired into the ownership of the land that will be involved [at Laguindingan]? Secondly, have you considered the additional transportation requirements of the road network which will be required?

41

LBII response

- The answer is yes to both questions. We are required to consider additional roads which will be needed as part of the EA procedures.

Orville J. Abellanosa, Mayor of Laguindingan

- Responding to the question of Dir. Balandra as to the prospective problems of land acquisition, the local government can have a persuasive effect on that. The property is owned by the Ayala Group of companies. I think there is no problem as regards that matter.

Unidentified speaker

- It is best not to consider ownership of the land as mentioned by Director Balandra. To do so may affect objective planning. Consider ownership secondarily, after the planning is completed.

Balandra

- Perhaps we should disregard land ownership for now, but in making plans politics often enter in and one may have friends who will say, 'Why don't you place these facilities in my area?'
- But in regards to the environmental assessment, especially Alternative 3 [the Laguindingan site], the way you have shown it the runway will be oriented east and west which, for a pilot, presents problems in landing and taking off into the sun. On the other hand, if the runway is oriented north and south it will be much better for navigation, but then the planes will either be coming in or leaving over the population of Laguindingan. U*

LBII response

- A north-south orientation is not possible at the Laguindingan site because there would be too much earth-moving required. The factors that must be considered in airport siting have been taken into account in the feasibility studies. The site at Laguindingan is suitable on these factors. It meets international standards.

48

Jose P. Gatus, Director of DENR, Region X

- You should contact the airport authorities while carrying out your studies. There have been previous studies of airport facilities in the area. For example, there are plans to expand Lumbia. We should hear from Dir. Garcia [Dir of the ATO in Cagayan de Oro].

Orville J. Abellanosa, Mayor of Laguindingan

- The land for the airport at Laguindingan is on Ayala Group property and the local government will make arrangements with the Ayala Group to acquire the land.

Unidentified questioner

- Is there really a need to build another airport rather than expand the one at Cagayan de Oro [at Lumbia]?

LBII response

- The question of need is considered in the Feasibility Study and Master Planning, Cagayan de Oro - Iligan Airport Project.
- [Hotel personnel entered the room with the merienda and during the time this was being prepared there were several informal comments and discussion made between meeting participants and LBII personnel.

APPENDIX D
SUBMISSIONS PRIOR TO AND SUBSEQUENT TO SCOPING SESSIONS

[The following is a portion of a memorandum dated 26 July 1991 from Mr. Gregory M. Carmichael, Environmental Engineer, CCSC, to Mr. Howard "Pat" Johnson, Chief of Party, CCSC. The memorandum was forwarded FYI to Mr. William Parente, LBII]

Comments on Scoping Session and Environmental Process

I was disappointed with the level of technical discussions and the presentation at the Scoping Session. It seemed to be rather shallow and many of the potential environmental impacts were not discussed in any detail. The Environmental Team Leader doesn't seem to have a complete grasp of what is required under NEPA or the Philippine environmental laws. I provided as much information as I could in the time I met with him. As I mentioned in my comments on the proposal the designated Environmental Specialist's background is concentrated in ecology, water quality and wildlife studies. The scope of environmental work for an airport requires extensive experience in air quality area source modeling, background and area noise modeling, air quality/land use planning, hazardous material impact and secondary transportation impact evaluation. Although the designated individual may be able to contribute significantly to a determination of the potential impact on wildlife I would consider evaluation of the air quality, noise, materials storage and secondary impacts on transportation and land use of primary importance in this study. This is especially true if a new site is selected. I do not find that the environmental assessment is moving in this direction.

Aviator Comments

The Laguindingan Site appears to be excellent from a pilot's perspective. Whether such a project is economically feasible remains to be determined.

APPENDIX E
DRAFT OUTLINE FOR EA/EIS

52

TABLE OF CONTENTS

COVER LETTER
EXECUTIVE SUMMARY

CHAPTER 1 - PROJECT DESCRIPTION

- 1.1 PROJECT SETTING
 - 1.1.1 Location
 - 1.1.2 Purpose
 - 1.1.3 Stage in Planning Process

- 1.2 EXISTING INFRASTRUCTURE AND FACILITIES
 - 1.2.1 Proposed Laguindingan Site
 - 1.2.2 Air Transport Infrastructure of the Cagayan de Oro-Iligan Corridor
 - 1.2.1.1 Lumbia Airport
 - 1.2.1.2 Balo-i Airport
 - 1.2.1.3 Linamon Site
 - 1.2.3 Road Infrastructure
 - 1.2.4 Other Facilities

- 1.3 RECOMMENDED PROPOSED IMPROVEMENTS
 - 1.3.1 Layout and Description
 - 1.3.2 Construction
 - 1.3.3 Operation and Maintenance
 - 1.3.4 Abandonment Plans

1.4 PROJECT ALTERNATIVES

1.4.1 No Action

1.4.1.1 DOTC Airport Development Plans

1.4.2 Alternative Sites for Improvement

1.4.2.1 Lumbia Airport

1.4.2.2 Balo-i Airport

1.4.2.3 Linamon Site

1.4.2.4 Other Sites

1.4.3 Alternative Facilities

1.4.4 Implementation Timeframe

CHAPTER 2 EXISTING ENVIRONMENT

2.1 INTRODUCTION

2.1.1 Methodology

2.1.2 Length of Project

2.1.3 Study Area

2.2 LAND USE AND PLANNING

2.2.1 Existing Land Use in the Laguindingan Site Area

2.2.2 Development Plans

2.2.2.1 Laguindingan Site Area

2.2.2.2 Cagayan de Oro-Iligan Corridor

2.3 SOCIO-ECONOMIC CONDITIONS

2.3.1 Cagayan de Oro-Iligan Corridor

2.3.1.1 Population

2.3.1.2 Housing, Utilities and Community Infrastructure

2.3.1.3 Education, Health and Social Sciences

2.3.1.4 Employment and Income

2.3.2 Laguindingan

- 2.3.2.1 Area and Settlement History
- 2.3.2.2 Population
- 2.3.2.3 Housing and Community Infrastructure
- 2.3.2.4 Education, Health and Social Services
- 2.3.2.5 Income and Livelihood
- 2.3.2.6 Social and Political Organization
- 2.3.2.7 Community Problems and Issues

2.3.3 Barangay Moog

- 2.3.3.1 Area and Settlement History
- 2.3.3.2 Population
- 2.3.3.3 Housing and Community Infrastructure
- 2.3.3.4 Education, Health and Social Services
- 2.3.3.5 Income and Livelihood
- 2.3.3.6 Social and Political Organization
- 2.3.3.7 Community Problems and Issues

2.3.4 Barangay Tubajon

- 2.3.4.1 Area and Settlement History
- 2.3.4.2 Population
- 2.3.4.3 Housing and Community Infrastructure
- 2.3.4.4 Education, Health and Social Services
- 2.3.4.5 Income and Livelihood
- 2.3.4.6 Social and Political Organization
- 2.3.4.7 Community Problems and Issues

2.3.5 Barangay Liberty

- 2.3.5.1 Area and Settlement History
- 2.3.5.2 Population
- 2.3.5.3 Housing and Community Infrastructure
- 2.3.5.4 Education, Health and Social Services
- 2.3.5.5 Income and Livelihood
- 2.3.5.6 Social and Political Organization
- 2.3.5.7 Community Problems and Issues

2.4 PHYSICAL ENVIRONMENT

2.4.1 Climate

2.4.2 Air Quality

2.4.2.1 Noise Levels

2.4.2.2 Total Suspended Particulates

2.4.3 Water Resources and Water Quality

2.4.3.1 Present Status of Water Resources

2.4.3.2 Present Status of Water Quality

2.4.4 Oceanography

2.4.4.1 Coastal Circulation Patterns

2.4.4.2 Sediment Transportation

2.4.5 Geology, Soils and Topography

2.4.5.1 Geology

2.4.5.2 Soils and Land Forms

2.4.5.3 Soil Erosion

2.4.5.4 Topography

2.4.5.5 Present Land Use

2.5 BIOLOGICAL ENVIRONMENT

2.5.1 Terrestrial

2.5.1.1 Vegetation

2.5.1.2 Wildlife and Wildlife Habitat

2.5.2 Marine

2.5.2.1 Coastal and Marine Habitat

2.5.2.2 Coastal Fisheries

2.5.3 Protected Areas, Critical Habitats and Endangered Species

2.6 CULTURAL ENVIRONMENT

2.6.1 Archaeological or Historical Sites

**CHAPTER 3 PREDICTED ENVIRONMENTAL CONDITIONS
WITHOUT PROJECT**

3.1 REGIONAL LAND USE AND PLANNING

- 3.1.1 Implementation of DOTC Airport Development Plans
- 3.1.2 Cagayan de Oro-Iligan Corridor Development

3.2 SOCIO-ECONOMIC CONDITIONS

- 3.2.1 Demography and Migration Patterns
- 3.2.2 Housing and Community Infrastructure
- 3.2.3 Transportation
- 3.2.4 Education, Health and Social Services
- 3.2.5 Income and Livelihood
- 3.2.6 Social and Political Life

3.3 PHYSICAL ENVIRONMENT

3.3.1 Air Quality

- 3.3.1.1 Noise Levels
- 3.3.1.2 Total Suspended Particulates

3.3.2 Water Resources and Water Quality

- 3.3.2.1 Water Supply and Demand Scenarios
- 3.3.3.2 Water Quality and Pollution

3.3.3 Geology and Soils

3.4 BIOLOGICAL ENVIRONMENT

- 3.4.1 Terrestrial
- 3.4.2 Marine

3.5 CULTURAL ENVIRONMENT

- 3.5.1 Archaeological or Historical Sites

CHAPTER 4 ASSESSMENT OF ENVIRONMENTAL IMPACTS

- 4.1 REGIONAL LAND USE AND PLANNING
 - 4.1.1 Near Future Implementation
 - 4.1.2 Future Implementation
 - 4.1.3 Potential Closure or Downgrading of Existing Airports
- 4.2 EFFECTS ON SOCIO-ECONOMIC CONDITIONS
 - 4.2.1 Demographic and Migration Impacts
 - 4.2.2 Housing and Community Infrastructure
 - 4.2.3 Transportation
 - 4.2.4 Education, Health and Social Services
 - 4.2.5 Income and Livelihood
 - 4.2.6 Social and Political Life
 - 4.2.7 Community Perceptions Towards Dislocation
 - 4.2.8 Upset and Risk Analysis
- 4.3 EFFECTS ON PHYSICAL ENVIRONMENT
 - 4.3.1 Air Quality
 - 4.3.1.1 Noise Impacts From Construction
 - 4.3.1.2 Noise Impacts From Operation
 - 4.3.1.3 Total Suspended Particulates During Construction
 - 4.3.1.4 Total Suspended Particulates During Operation
 - 4.3.1.5 Light and Glare Analysis
 - 4.3.2 Water Resources and Water Quality
 - 4.3.2.1 Constructional Impacts
 - 4.3.2.2 Operational Impacts
 - 4.3.3 Oceanography
 - 4.3.3.1 Coastal Sediment Load and Transport
 - 4.3.4 Geology and Soils
 - 4.3.4.1 Drainage Patterns and Flows

4.3.5 Hazardous Materials

- 4.3.5.1 Handling
- 4.3.5.2 Storage
- 4.3.5.3 Wastes
- 4.3.5.4 Upset and Safety

4.4 EFFECTS ON BIOLOGICAL ENVIRONMENT

4.4.1 Terrestrial

- 4.4.1.1 Vegetation
- 4.4.1.2 Wildlife and Wildlife Habitat

4.4.2 Marine

- 4.4.2.1 Coastal Marine Habitat
- 4.4.2.2 Coastal Fisheries

4.5 EFFECTS ON CULTURAL ENVIRONMENT

4.5.1 Archaeological or Historical Sites

4.6 AESTHETIC EFFECTS

- 4.6.1 Air Quality and Noise
- 4.6.2 Land Use
- 4.6.3 Touristic Value

4.7 POTENTIAL FOR CUMULATIVE EFFECTS WITH OTHER PROJECTS IN THE CORRIDOR

CHAPTER 5 MITIGATIVE MEASURES

5.1 MITIGATION OF SOCIO-ECONOMIC IMPACTS

- 5.1.1 Community Information Program and Consultive Meetings
- 5.1.2 Compensation, Job Training and Relocation
- 5.1.3 Site Selection and Development
- 5.1.4 Community Organizing and Development
- 5.1.5 Monitoring
- 5.1.6 Timetable

5.2 MITIGATION OF PHYSICAL ENVIRONMENT IMPACTS

5.2.1 Air Quality

- 5.2.1.1 Noise Impacts
- 5.2.1.2 Total Suspended Solids
- 5.2.1.3 Light and Glare

5.2.2 Water Resources and Water Quality

- 5.2.2.1 Constructional Impacts
- 5.2.2.2 Operational Impacts
- 5.2.2.3 Water Quality Monitoring

5.2.3 Oceanography

5.3 MITIGATION OF BIOLOGICAL ENVIRONMENT IMPACTS

5.3.1 Terrestrial

- 5.3.1.1 Vegetation
- 5.3.1.2 Wildlife and Wildlife Habitat

5.3.2 Marine

- 5.3.2.1 Coastal Marine Habitat
- 5.3.2.2 Coastal Fisheries

5.4 MITIGATION OF CULTURAL ENVIRONMENT IMPACTS

5.5 MITIGATION OF AESTHETIC IMPACTS

5.6 MITIGATION OF CUMULATIVE IMPACTS