

**REPORT**  
**TECHNICAL MISSION PROGRAM TO PAPUA NEW GUINEA**  
**PROJECT CFC/ITTO 62: PD 40/00 REV. 4 (I)**  
**“UTILIZATION OF SMALL DIAMETER LOGS FROM**  
**SUSTAINABLE SOURCE FOR BIO-COMPOSITES PRODUCTS”**



**By**  
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**BOGOR, INDONESIA**  
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## I. INTRODUCTION

Papua New Guinea Forest Research Institute (PNG-FRI) as Collaborative Agency has been engaged in the project entitled CFC/ITTO/62 - PD 40/00 Rev.4 (I) "Utilization of Small Diameter Logs from Sustainable Source for Bio-Composite Products" started in 2008 to 2011. The involvement of PNG-FRI is particularly in the activities of (1.1) Asses market need and (2.1.1) Identify suitable wood species and evaluate physical and mechanical properties.

After two years delayed and continues discussion, finally the PNG-FRI has not submitted the requested technical reports, and the Project Executive Agency (Bogor Agricultural University Indonesia) requested to ITTO/CFC for applying Contingency Budget to visit PNG and complete the technical reports. The application of No Objection Letter (NOL) was submitted via ITTO On-Line Monitoring System on 18 August 2011, and ITTO has approved NOL via Ref. No. F.11-0141 dated 19 August 2011 signed by Mr. Emmanuel Ze Meka as ITTO Executive Director.

The mission to Papua New Guinea main purpose is to complete the requested technical reports in collaboration with PNG-FRI (Collaborative Agency). The following pending technical reports for the PNG component are as follows:

- a. Asses market needs (Activity 1.1.1)
- b. Determine where the potential for future market growth for bio-composite products exists; and
- c. Identify suitable wood species and evaluate its physical and mechanical properties (Activity 2.1.1).

The mission was organized by Prof Dr Yusuf Sudo Hadi (Project Coordinator) and Prof Dr Muh Yusram Massijaya (Bio-composites Expert) from Project Executive Agency Bogor Agricultural University Indonesia, Mr Frank Agaru as ITTO contact person from PNG Forest Authority, and Mr Mathias Niangu as host from PNG-FRI. The mission was focused in Port Moresby and Morobe Province areas in the period of 5-13 September 2011. During the mission, the team visited and discussed with PNG-FRI key persons, Timber and Forestry Training College stafs, Lae Builders for Furniture

Component manager, and also preparing wood samples of five species from PNG for testing in Bogor Indonesia.

The technical reports will be submitted to ITTO/CFC in separate documents regarding to those topics, and it will be presented and discussed in Project Steering Committee meeting next month in Bogor Indonesia.

## II. ACTIVITIES OF VISIT

### A. PNG Forest Research Institute

#### 1. Meeting with Director of PNG-FRI

Professor Simon Saulei as Director welcomed the team to PNG-FRI and he supported the mission to finish the reports concerning research on USDL for bio-composite products. He mentioned that logs are mostly exploited from natural forest and 80% of the logs produced in PNG is for export, he supposed that the policy should be evaluated changing to export of processed products getting value added in the country.

Plantation forest has been started with some trees species, for example teak (*Tectona grandis*), balsa (*Ochroma* sp), klinky pine, and other species.

#### 2. Meeting with PNG-FRI Officials

Meeting with PNG-FRI officials was attended by high rank officials in PNG-FRI related to the USDL project, namely Mr Wake Yelu (Program Manager for Planted Forest Program), Mr Mathias Niangu (Program Manager for Forest Products Program), Mr. Aiten Maniho, Mr. Nasly and Mr Frank Asok as staffs. The dominant trees plantation in PNG are balsa (*Ochroma lagopus*), *Eucalyptus robusta*, *Eucalyptus deglupta*, *Eucalyptus grandis*, teak (*Tectona grandis*), *Araucaria anstata*, *Araucaria cunningham*, *Acacia manju*, *Terminalia* sp, *Pinus caribea*, *Pinus strabus*, and potential trees are *Pometia piñata*, *Anisoptera* sp, and *Endosperma* sp. Balsa wood is already harvested and processed to be fitches and boards, and it is exported to India.

3. Meeting with Mr Jimmy Amarea

Jimmy was appointed as person in charge to conduct research on USDL for bio-composite products. Three years ago he went to Bulolo area and prepared wood specimens for testing samples made from *Acacia mangium* and *Araucaria cunningham*. The specimens were brought to Lae but he withdrawn from PNG-FRI, and no more information concerning the USDL work. He could not give any data or information concerning previous work.

4. Visiting Library

To support data and information concerning timber market and wood properties from PNG, we visited PNG-FRI Library and got some journals issued by SGS PNG Limited entitled Log Export Monitoring Monthly Report, a working paper No APFSOS II/WP/2009/19 issued by PNG Forest Authority entitled Papua New Guinea Forestry Outlook Study, a publication issued by P.J. Eddowes from Forest Products Research Center entitled Commercial Timbers of Papua New Guinea, and other papers concerning the reports.

5. Preparing Wood Samples

We prepared wood samples for physical-mechanical properties and chemical content related to bio-composite products. The wood species samples chosen based on the discussion with the PNG-FRI staffs and the availability of the wood. The wood samples species are wau-beech (*Elmerrillia papuana* – Magnoliaceae); kwila (*Instia bijuga* – Caesalpiniaceae); balsa (*Ochroma lagopus* – Bombacaceae), ..... They were collected from PNG-FRI and Timber and Forestry Training College (TFTC) in Lae. The condition of the wood samples can be seen in the attached figures.

**B. Timber and Forestry Training College (TFTC)**

Since 1980s TFTC has been exploiting big and small logs from natural forest in Lae area, and the logs are processed for sawn timber and sold in Lae. The minimum diameter of harvested trees is 30 cm according to the Forest Authority

policy, and mostly the trees have 30-80 cm in diameter. Dominant tree species are *Pometia* sp, *Anisoptera* sp, and water gum, but recently also *Dysoxylon* sp and mersawa.

The processed logs from natural forest are for sawn timber, weather board, flooring, moulding, panels, tables, and furniture. Recently trees from plantation forest are also processed especially for poles after treated with preservation, and the dominant trees species are *Pinus caribea* and other pines with minimum logs diameter is 15 cm.

The production capacity of sawmill is about 200 m<sup>3</sup> per month with recovery about 50%. The products are sold for local consumer in Lae and the price of sawn timber is about PGK 1,200 per m<sup>3</sup>.

TFTC is also conducting training for young people with one year program covering the subjects of plantation, saw milling, wood machining, saw doctoring, wood drying, preservation, and furniture manufacturing. The workers in TFTC are 6 in log harvesting, 12 in sawmill, 4 in workshop, 20 teaching staffs, and 32 students. Hopefully in the near future this training will be Diploma program in Timber and Forestry sector.

### **C. Lae Builders for Furniture Component**

Lae Builders Co has been harvesting logs from low land forest and gets two units of forest concession covering 3,000-4,000 ha forest area per year with total permitted logs volume up to 10,000 m<sup>3</sup> per year. The company processed logs to sawn timber, and taun wood (*Pometia* sp) is dominantly processed for domestic market, and on the other processing line *Instia* sp and *Pterocarpus* sp are dominantly processed for furniture components, and the products is for international market especially for Australia market. CNC machine is used to produce furniture components with precise dimension and certain performance.

Wood waste and saw dust from logs processing are used for heating the boiler which is used for timber kiln drying, and the rest wastes are for sold and fire

wood of employees. Sawdust is used by public for chicken mats or steam production in sugar mill.

Lae Builders is also applying for certification, and currently in the second audit process by Forest Stewardship Council. Lae Builders would like to get it in short time, so it could expand market to wide global market.

#### **D. PNG Forest Authority in Port Moresby**

We visited PNG-FA on arriving day shortly in Port Moresby, and we get some data concerning forestry activities in PNG. On the last day we visited again to meet Director Forest Policy and Planning, Dr Ruth C.H. Turia. She welcomed us and we highly appreciated for this well organized conducting ITTO mission. She explained and gave list of timber groups listed in SGS reports, group 1 is the best and less for the rest according to the following number. Groups 1 and 2 are for export and the rest is for domestic markets. Those groups are from natural forest, but PNG also has been producing timber from plantation forest, e.g. *Ecalyptus deglupta* is for veneer and chips productions, and in Madang area *Acacia mangium* is produced for pulp.

### **CLOSING REMARKS**

The mission was successfully to collect the required information, data and documents for developing and writing technical reports related to Asses market needs (Activity 1.1.1), Determine where the potential for future market growth for bio-composite products exists; and Identify suitable wood species and evaluate its physical and mechanical properties (Activity 2.1.1). Moreover, Prof. Yusuf Sudo Hadi and Prof. Muh. Yusram Massijaya during the mission have been successfully to develop a very good relationship and understanding with Frank F. Agaru (PNG-FA Staff) and PNG-FRI staffs as a side positive impact of the mission which is very important for the future collaboration activities.

We highly appreciate to all parties who have supported the mission to finalize the reports of market assessment and physical-mechanical properties of suitable species for bio-composites in PNG. ITTO/CFC supported financial from contingency budget, PNG-FA supported arrangement to visit with Mr Frank Agaru as ITTO contact person, Director of PNG-FRI for providing all facilities to support our activities, Mr. Mathias Niangu as Program Manager of Forest Products Program in PNG-FRI for supporting all activities during stayed in Lae area.

The technical reports concerning market assessment and physical-mechanical properties of suitable species for bio-composites will be written in Bogor Indonesia after wrapping the information, analyzed the market data and conducting wood samples test in the laboratory.

#### **APPENDIXES**

Appendix 1. Schedule of visit to PNG-FRI

Appendix 2. Meeting with Director of PNG-FRI

Appendix 3. Meeting with Director Forest Policy and Planning of PNG-FA

Appendix 4. Meeting with Officials of PNG-FRI

Appendix 5. Meeting with Mr Jimmy Amarea

Appendix 6. Visiting Library at PNG-FRI in Lae

Appendix 7. Preparing Wood Samples

Appendix 8. Visiting Timber and Forestry Training College

Appendix 9. Visiting Lae Builders for Furniture Component

Appendix 10. Itinerary and Tickets

Appendix 1. Schedule of visit to PNG-FRI

No	Day/Date	Time	Activity	Venue	Officer
1	Mon 05/09	0130 pm 0700 pm 1130 pm	Bogor-Jakarta Jakarta-Singapore SQ Singapore-POM		
2	Tue 06/09	0935 am  1100 am 1230 pm 0300 pm	Arrival of officials by PX393 Sin-POM Visit PNG-FA Travel POM-Lae PX 102. G/transport to Lae city		
3	Wed 07/09	0900 am 1000 am 0100 pm 0200 pm	Meeting - FRI Director Meeting - FRI officials Meeting – Jimmy Amarea Decide on SDL species base on available information and collect SDL samples.	FRI	
4	Thu 08/09	0900 am  0100 pm	Meeting with CFTC Principal/officials. Collect SDL sample of <i>Elmerilla papuana</i> in Lae.		
5	Fri 09/09	0900 am  0100 pm	Visit Lae Builders Furniture components Collect market data on PNG bio-composite products.		
6	Sat 10/09	0900 am  0100 pm	Collect SDL sample of <i>Instia bijuga</i> in Lae Collect SDL sample of <i>Ochroma</i> sp in Lae		
7	Sun 11/09	0900 am	Prepare Report write-up		
8	Mon 12/09	0900 am  0100 pm	Collect SDL sample of other 2 species in Lae Final preparation of wood samples		
9	Tue 13/09	0515 am 0715 am 0900 am 0215 pm 0800 pm	Lae-Airport Lae-POM flight return Visit PNG-FA POM-SIN – PX 101 SIN-Jakt GA		



Appendix 2. Meeting with Director of PNG-FRI



Appendix 3. Meeting with Director Forest Policy and Planning of PNG-FA



Appendix 4. Meeting with Officials of PNG-FRI



Appendix 5. Meeting with Mr Jimmy Amarea



Appendix 6. Visiting Library at PNG-FRI in Lae



## Appendix 7. Preparing Wood Samples



Appendix 8. Visiting Timber and Forestry Training College



Appendix 9. Visiting Lae Builders for Furniture Component



Appendix 10. Itinerary and Tickets

From: Panorama Tours Bogor <bogor@panorama-tours.com>  
Date: 19 Agustus 2011 12:18  
To: Yusuf Sudo Hadi <yshadi@indo.net.id>  
Subject: Schedule JKT - POM - JKT // 04 - 13 Sep 11

JKT - SIN - JKT by Garuda

1 GA 834B 05SEP 1 CGKSIN HK1 2000 2240 /DCGA\*RQHY3Y /E  
2 GA 835B 13SEP 2 SINCGK HK1 2020 2105 /DCGA\*RQHY3Y /E

Fare : USD 233/Person/way  
Conditions : Any changes charge apply / refundable + adm fee

SIN - POM - JKT by Air New guinea

1 PX 393B 05SEP 1 SINPOM SS1 2330 0805 06SEP 2 /TAPX /E  
2 PX 392B 13SEP 2 POMSIN SS1 1415 1835 /TAPX /E

Fare : USD 1.545/Person  
Condiions : any changes charge apply / nonrefundable

POM – LAE - POM by Air New guinea

PX 102 06SEP POM-PORT MORESBY, PAPU LAE-LAE, PAPUA NEW GUI  
1230 Y -OK 16K  
PX 101 13SEP LAE-LAE, PAPUA NEW GUI POM-PORT MORESBY, PAPU  
0715 Y -OK 16K

Thank You,

Best Regards  
Adinda





# Air Niugini



\*\*\* ITINERARY RECEIPT - DUPLICATE \*\*\*

AGENCY/AIRLINE NAME 24AUG11 DATE OF ISSUE  
AIR NIUGINI GSA P T AYUBERGA JAKARTA, ID RLOC PX -  
JQE3X  
NAME: MASSIJAYA/MUHYUSRAMMR  
E-TICKET NUMBER: 6562102331288

DATE	FLIGHT	DEPARTURE AIRPORT	ARRIVAL AIRPORT	TIME
05SEP	PX 393	SIN-SINGAPORE, SINGAPO	POM-PORT MORESBY, PAPU	2330 B
-OK	23K			
13SEP	PX 392	POM-PORT MORESBY, PAPU	SIN-SINGAPORE, SINGAPO	1415 B
-OK	23K			

RESTRICTIONS: NONEND/NONREF/NONREISS DTE CHNG PRMTD WTHN VLDTY NO PEN  
ALTY CHRG/INDO PSPT W455963 NVA05OCT11

FORM OF PAYMENT: CASH  
FARE: BASE IT SGD  
TAX/FEE/CHARGE 6.6000/498.32XT  
AVIATION LEVY 5.000P  
TOTAL IT USD

Notice: "Carriage and other services provided by the carrier are subject to conditions of carriage, which are hereby incorporated by reference. These conditions may be obtained from the issuing carrier."

