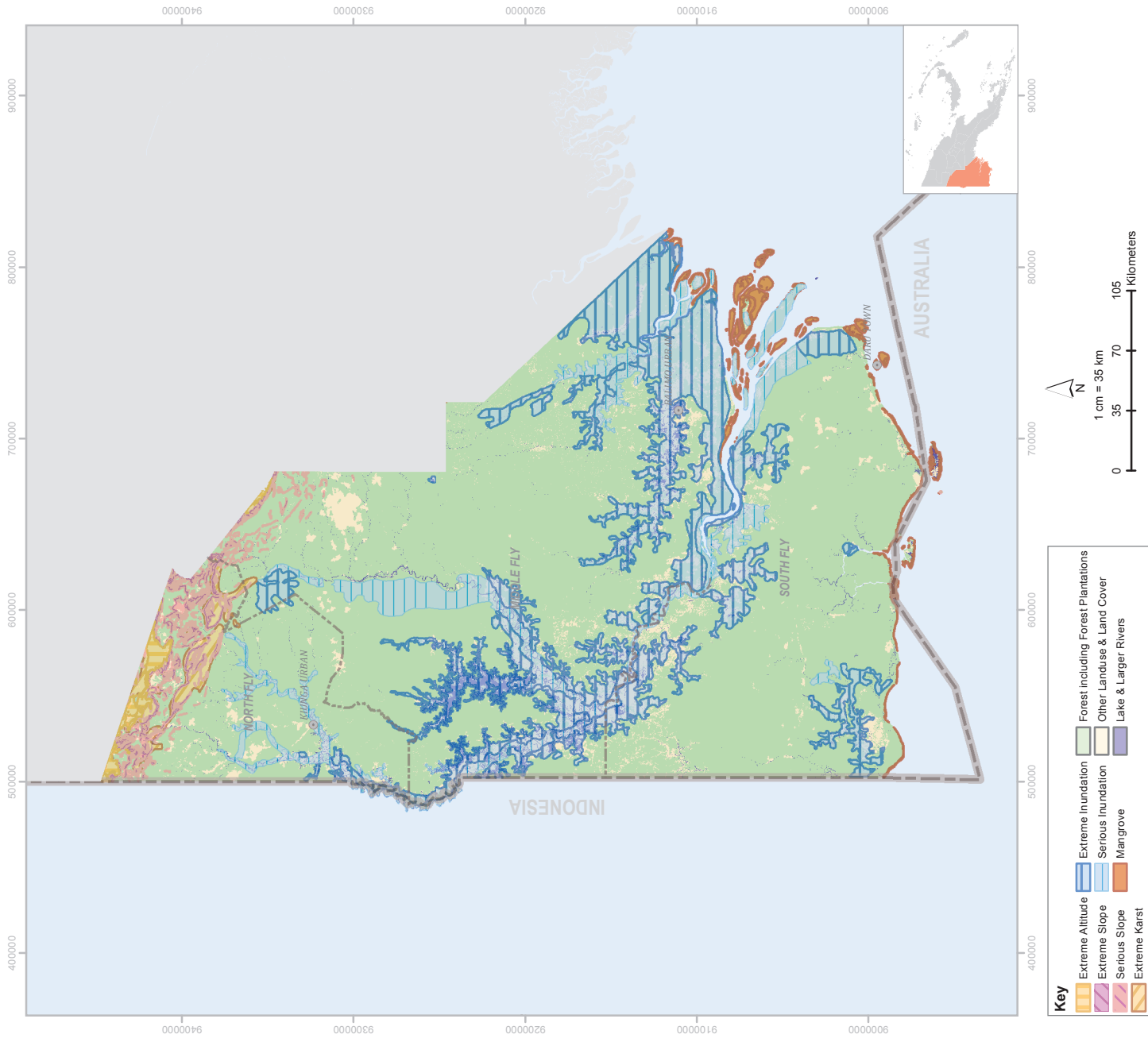
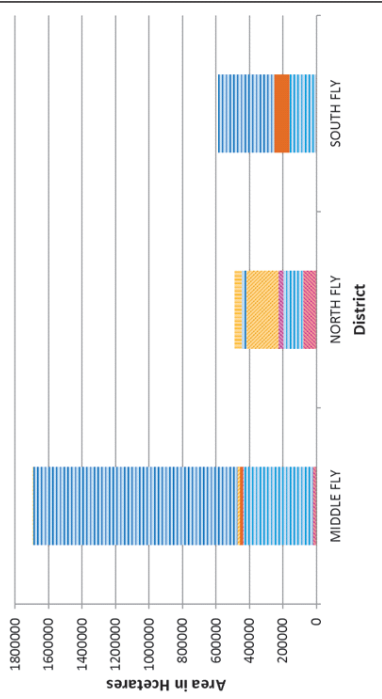


CONSTRAINTS TO COMMERCIAL TIMBER PRODUCTION, WESTERN PROVINCE



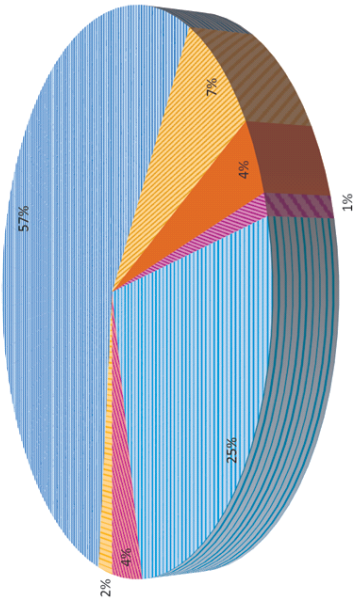
Brief Report on Logging Constraints of Western Province

Constraints in each District



Western Province is predominantly constrained by inundation ('Serious Inundation' and 'Extreme Inundation'). Although, the constrained areas cover a tiny fraction of the total land area in the province. The 'Extreme Altitude', 'Serious slope' and 'Extreme Slope' make up the remaining percentage of constrained areas, all of which are found in the North Fly district of the province (except for Mangroves, which are found along the coastline and up the Fly River). Both the Middle Fly and South Fly Districts have the majority of the inundated areas and mangroves.

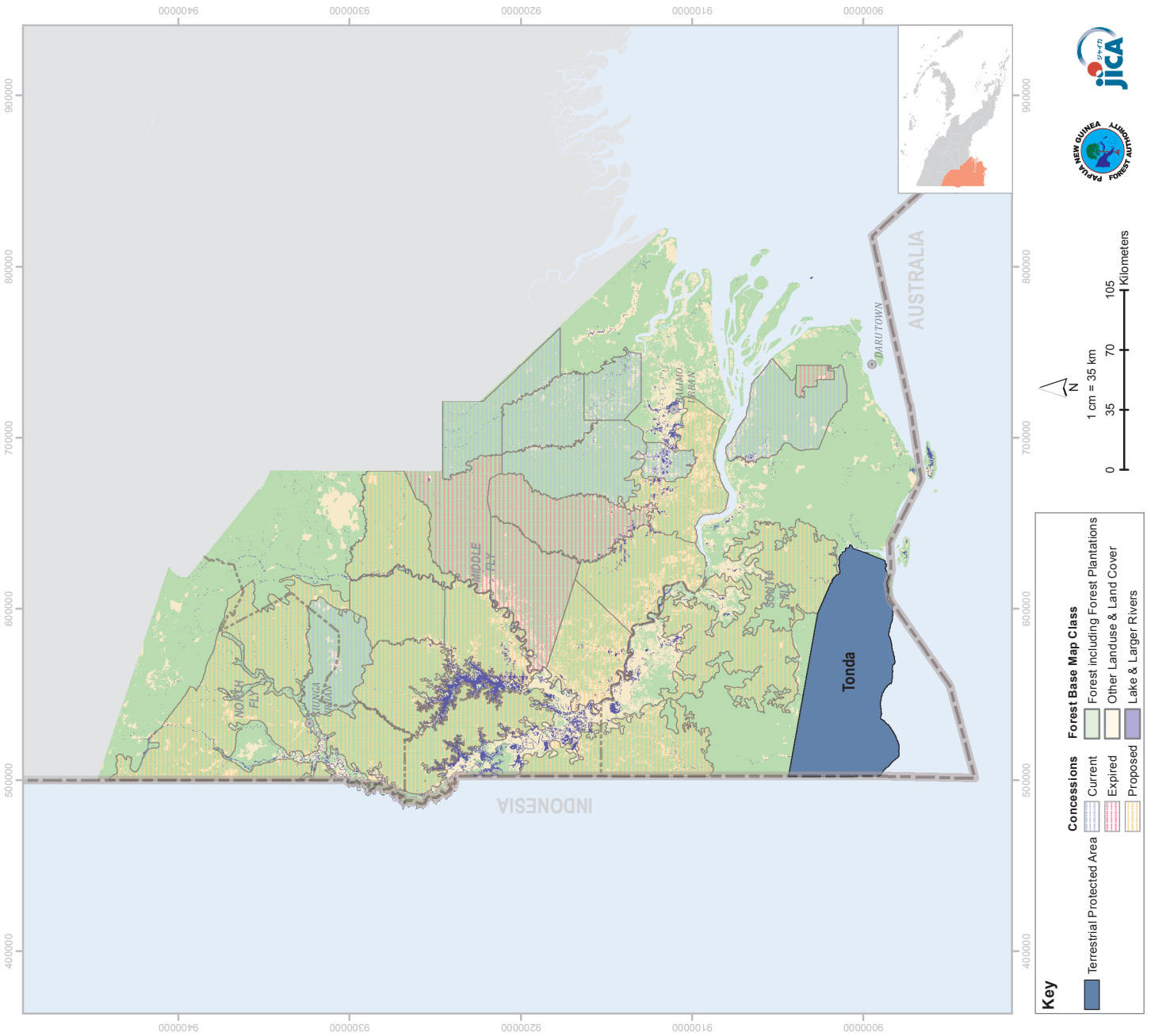
% of each Constraint in Province



Information on Terrestrial Protected Areas in Western Province

Name	Tonda WMA
Protected Area ID	50
Wildlife Management Area	Wildlife Management Area
Province	Western
Location	Tonda
Area (ha)	610,937
Longitude	144° 32.47" E
Latitude	9° 1.59" S

TERRESTRIAL PROTECTED AREAS, WESTERN PROVINCE



2. Gulf Province



General information/Overview

1. Location

Gulf Province is located on the south coast of the mainland of PNG; Gulf of Papua. There are six major rivers that flows into one large delta of islands, swamps and channels and dominated by limestone.

Provincial Administration Centre: Kerema

Land area: 3, 471, 860 ha

Population: 158, 197 (2011)

Number of District: 2 (Kerema, Kikori)

Number of Local Level Governments (LLGs): 10 LLGs

2. Forest Information

Forest Area: 3, 246, 068 ha





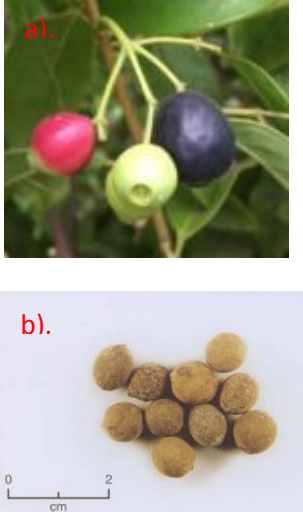
Provincial Tree

The provincial tree is 'Sandalwood' (scientifically known as *Santalum macgregorii*) and is commonly found in seasonally dry, evergreen savannah woodlands and grasslands, with occasional occupation of riparian semi-deciduous thickets and rainforest habitats.

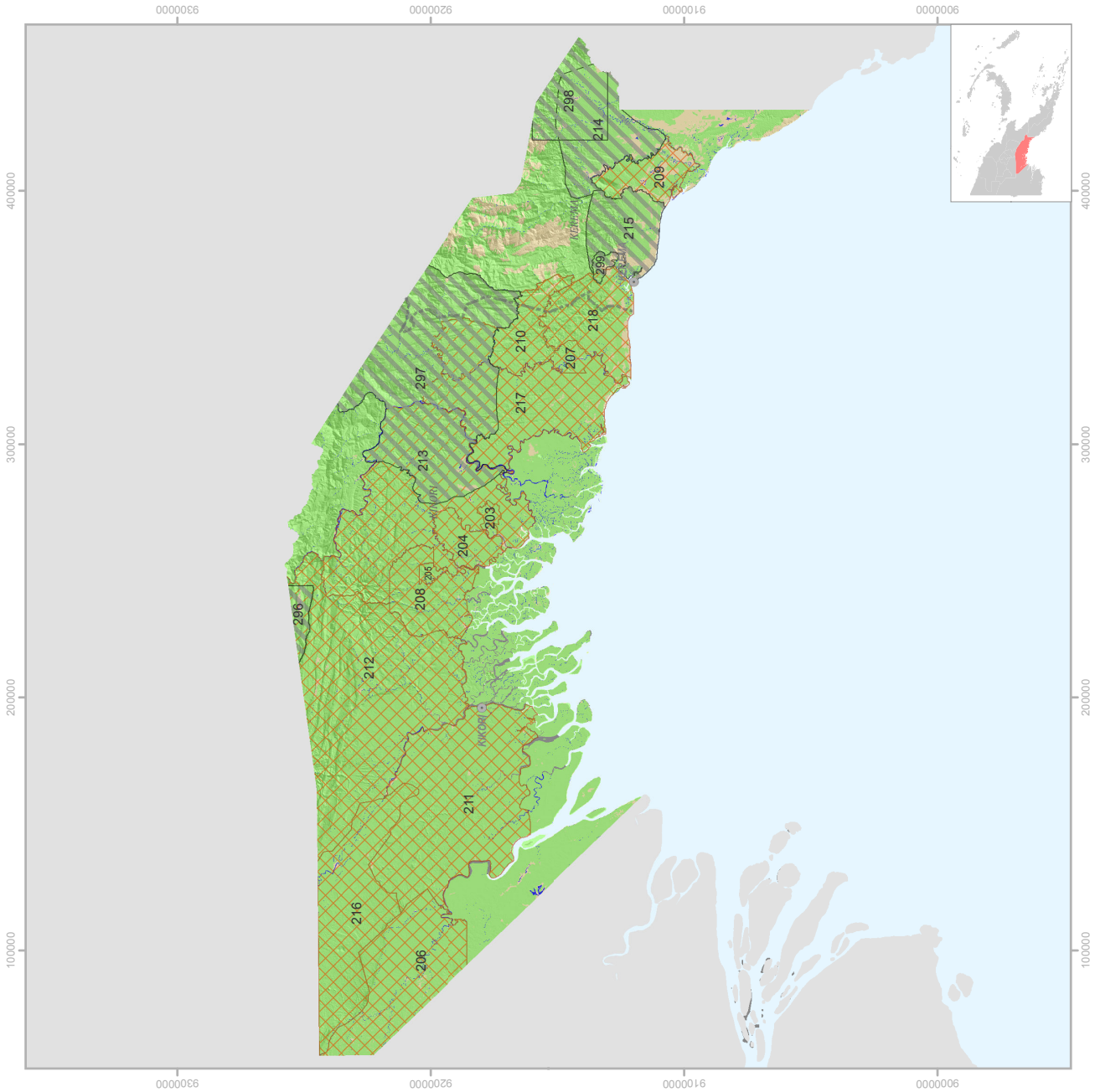
Significance of Provincial tree:

It is highly valued for its fragrant heartwood oils which are highly sought after by the world markets for cosmetics and religious uses/occasions and one of the precious non-timber forest products.

Sandalwood is a rare species and can only be found in 3 provinces in the Southern region of PNG. The local people plant the tree around the houses as ornaments and to mark/demarcate boundaries while allowing it to mature for future monetary benefits.

Scientific name: <i>Santalum macgregorii</i>	Family: <i>Santalaceae</i>	Common Name/Trade name: <i>Sandalwood</i>
<p>Description</p> <p>A small to medium sized tree and a multi-stemmed with short, crooked boles with open crowns. Outer bark is rough, moderately tessellated bark. Inner bark yellow to red, under bark is pale yellow to white. Leaves: light green leaves in opposite pairs that tend to be drooping Flowers: small with four greenish-white/pink flower parts. Fruit/Seed; fruit is green when immature and red when it matures. Seeds: single seed; smooth and light brown.</p>		
Tree	Bark	Leaf/Leaves
 <p>Source: http://phytoimages.siu.edu/imgs/paraman1/r/Santalaceae_Santalum_macgregorii_76930.html</p>	 <p>Source: http://www.phytoimages.siu.edu/imgs/paraman1/r/Santalaceae_Santalum_macgregorii_77007.html</p>	 <p>Source: http://www.phytoimages.siu.edu/imgs/paraman1/r/Santalaceae_Santalum_macgregorii_77007.html</p>
<p>Note:</p> <p>Short description was from a different source.</p> <p>Source: a). Flowering shoot http://phytoimages.siu.edu/imgs/paraman1/r/Santalaceae_Santalum_macgregorii_76990.html</p> <p>Source: a) Fruit Page T, Sandalwood seed collection & preparation, Technical note, ACAIR (2017)</p>	Flower	Fruit/Seed
	 <p>Source: http://www.fiapng.com/Nursery_techniques.pdf</p>	 <p>Source: http://www.fiapng.com/Nursery_techniques.pdf</p>

TIMBER CONCESSION MAP OF GULF PROVINCE



Key

- District Boundary
- District Administration Centers
- Timber Concession Status
 - Proposed
 - Active
- Forest Including Forest Plantations
- Other Landuse & Land Cover
- Lakes & larger rivers

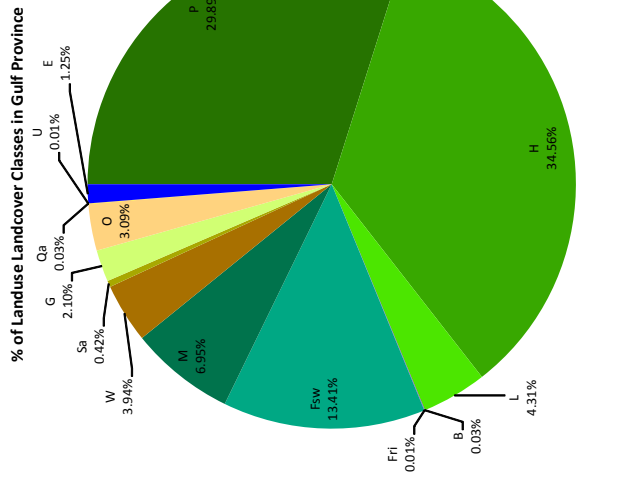
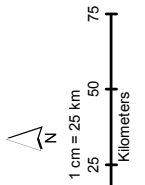
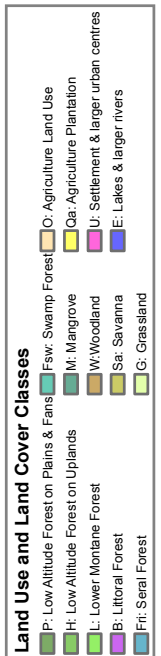
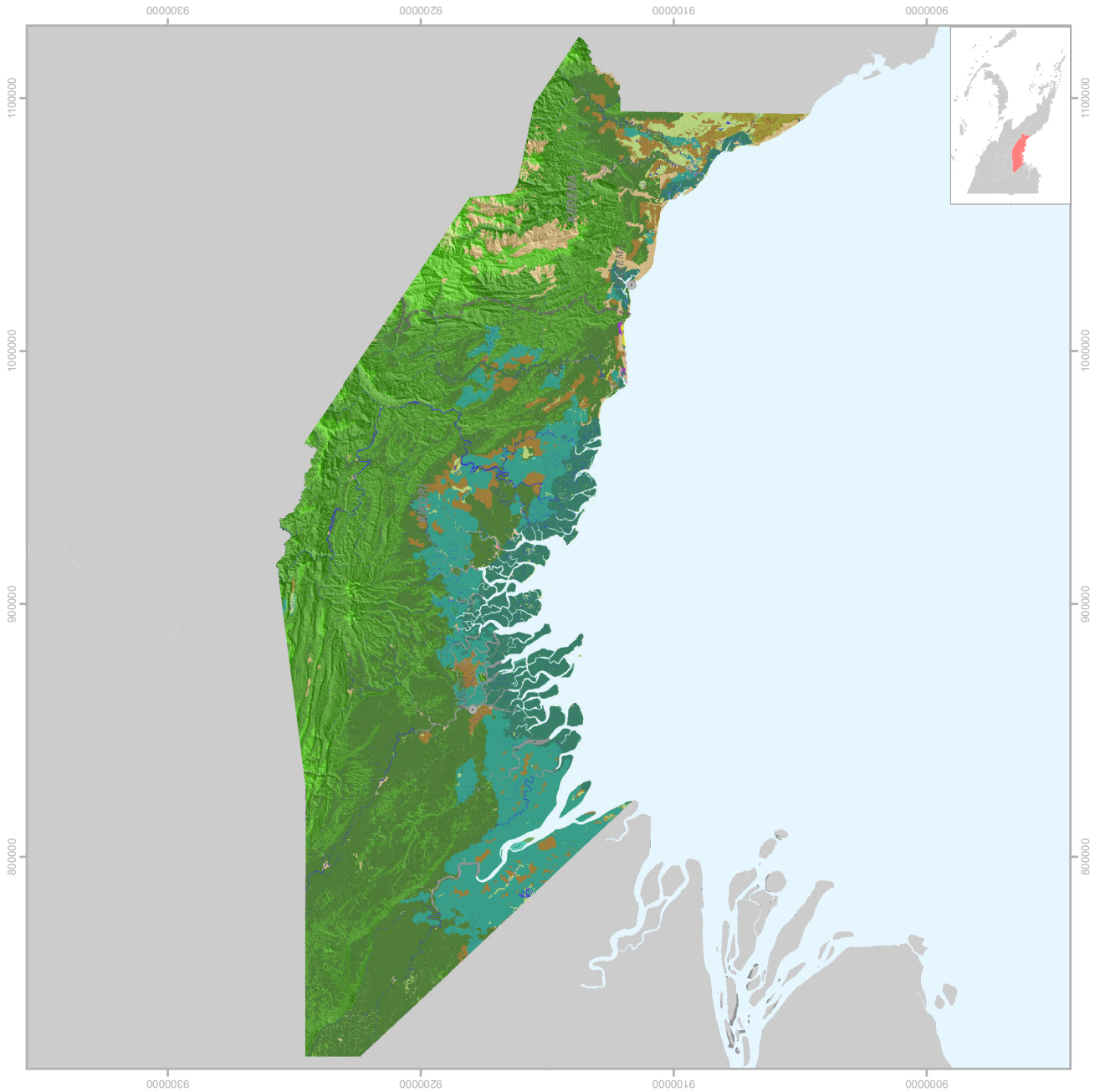
1 cm = 25 km

0 25 50 75 Kilometers

PLAN_ID	NAME	AREA (ha)	CONCESSION TYPE	STATUS
210	Vailala Blk 2	101,892.12	FMA	Concession
208	East Kikori	83,168.00	TRP	Concession
209	Tauri Meporo	54,167.70	TRP	Concession
206	Turama	185,669.81	TRP	Concession
211	TUFAMA BLOCK 1	335,930.18	FMA	Concession
216	HEKIKO FMA	195,459.95	TA	Concession
217	Vailala Blk 3	195,414.81	FMA	Concession
207	VAILALA	14,465.09	TRP	Concession
203	EIA RIVER	8,036.56	TRP	Concession
204	PIE Era	37,328.96	TRP	Concession
205	IOWA RIVER	5,731.64	TRP	Concession
214	Kakoro	127,518.88	proposed	Proposed
215	Meporo(Malalaua)	78,710.91	Proposed	Proposed
212	Kikori Block 2	442,792.99	FMA	Concession
218	Vailala Blk 1	103,822.65	TRP	Concession
213	Baimuru blk 3	320,730.13	FMA	Concession
296	Polopa	18,911.80		Proposed
298	Bulldog_oilpalm	87,618.59		Proposed
297	Vailala_Purari_oilpalm	390,291.52		Proposed
299	Vailala Blk. text	7,351.67		Proposed

Table showing Timber Concessions of Gulf Province.
Information updated as at 2016.

VEGETATION AND LAND COVER MAP OF GULF PROVINCE (2012 FOREST BASEMAP VERSION 1.1)



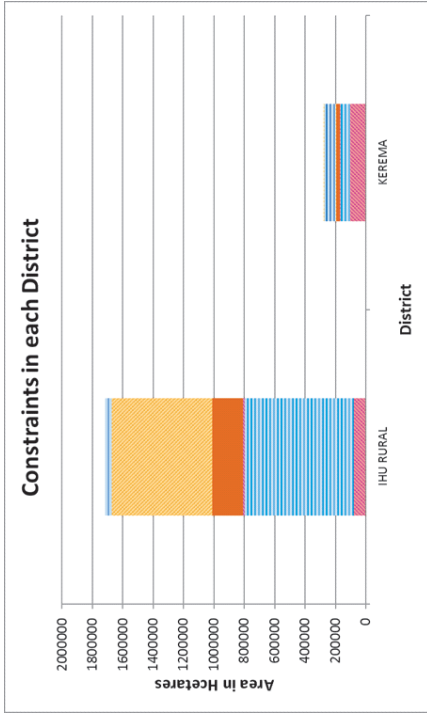
Pie Chart showing percentage in Landuse, Landcover of Gulf Province.

% of Landuse Landcover	
Code	Kikori
P	13.54%
H	38.16%
L	14.32%
B	0.04%
Fri	0.01%
Fsw	16.88%
M	2.97%
W	6.90%
Sa	2.00%
G	6.44%
O	12.96%
Qa	0.01%
U	0.01%
E	1.01%
Land Area (ha)	723,635.17
	2,708,452.04

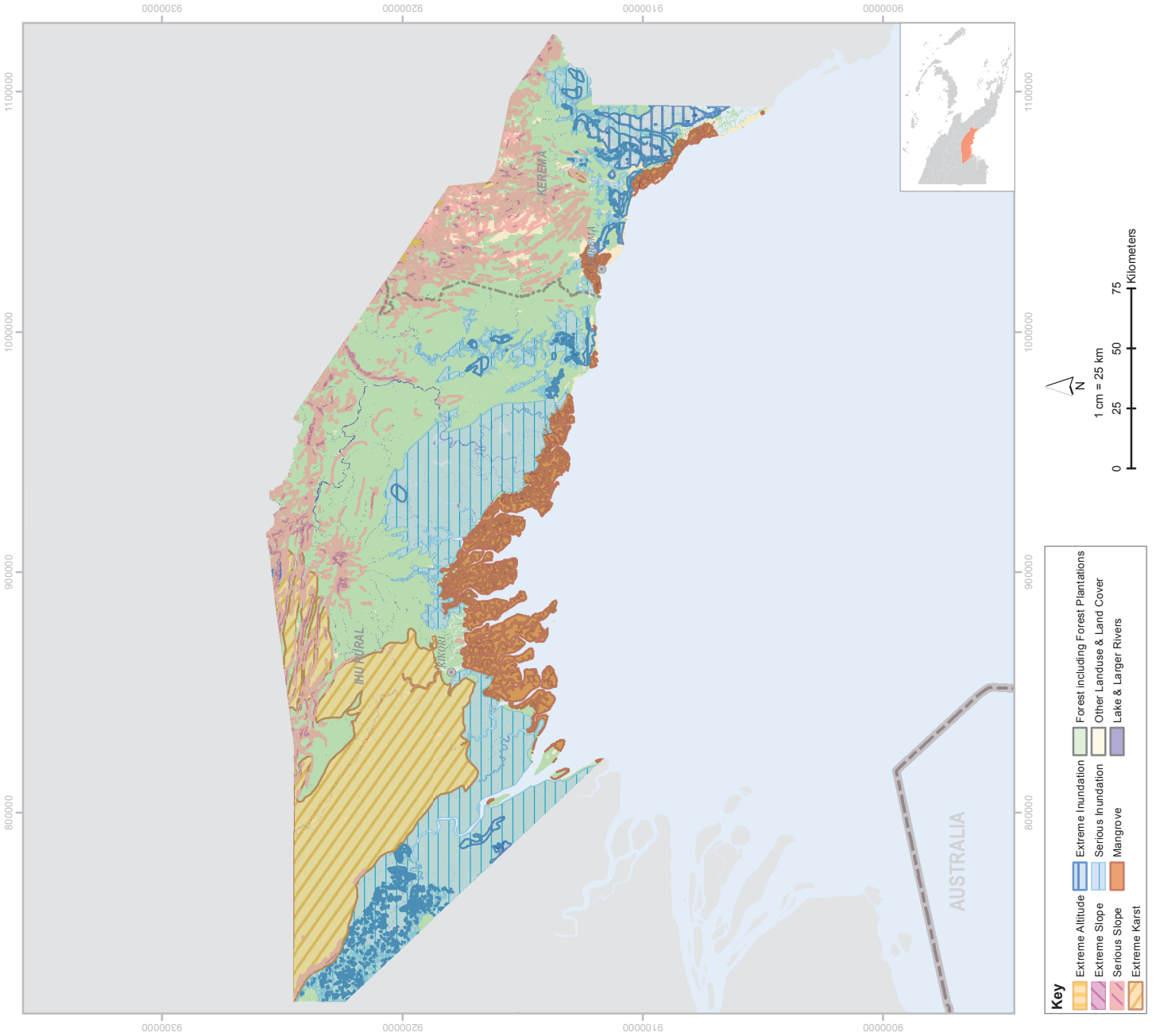
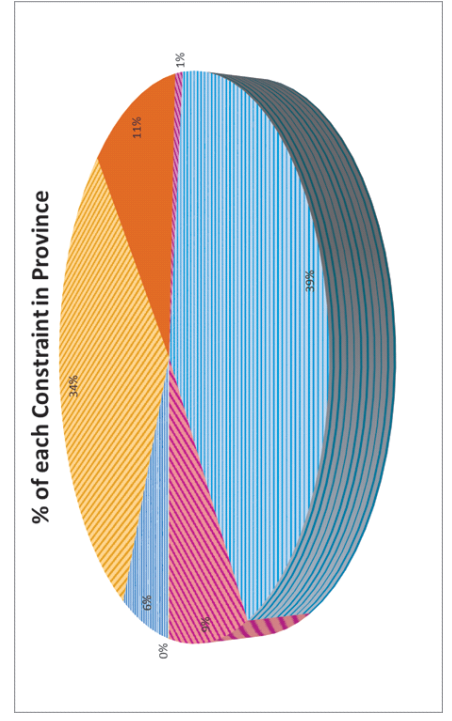
Table showing percentage in Landuse, Landcover of Districts in Gulf Province. Percentage calculated from area in hectares.

CONSTRAINTS TO COMMERCIAL TIMBER PRODUCTION, GULF PROVINCE

Brief Report on Logging Constraints of Gulf Province



Of the two districts in Gulf Province, Ihu Rural has the largest land area and the highest fraction of constrained areas, with Kerema accounting for about less than half of the total constrained areas. The predominant constraints found throughout the province include 'Extreme Karst', 'Serious Inundation', 'Extreme Inundation' areas and Mangroves. The province shares its northern borders with the Highlands Region; however, it has a general lack of high-altitude areas and is filled with slope areas in the northern part of the province.



TERRESTRIAL PROTECTED AREAS, GULF PROVINCE

Information on Terrestrial Protected Areas in Gulf Province

Name	Crater Mountain WMA
Protected Area ID	7
Protected Area Type	Wildlife Management Area
Province	Gulf
Location	Crater Mountain
Area (ha)	130958
Longitude	145° 3' 49" E
Latitude	7° 6' 19" S
Name	Lakakamu Proposed CA
Protected Area ID	<NA>
Protected Area Type	Conservation Area
Province	Gulf
Location	Lakakamu
Area (ha)	61,838
Longitude	146° 27' 49" E
Latitude	8° 12' 31" S
Name	Neiru (Aird Hills) WMA
Protected Area ID	34
Protected Area Type	Wildlife Management Area
Province	Gulf
Location	Neiru (Aird Hills)
Area (ha)	2,460
Longitude	144° 22' 20" E
Latitude	8° 33' 35" S

Note:

A) Lakakamu Conservation Area is located in three different provinces:

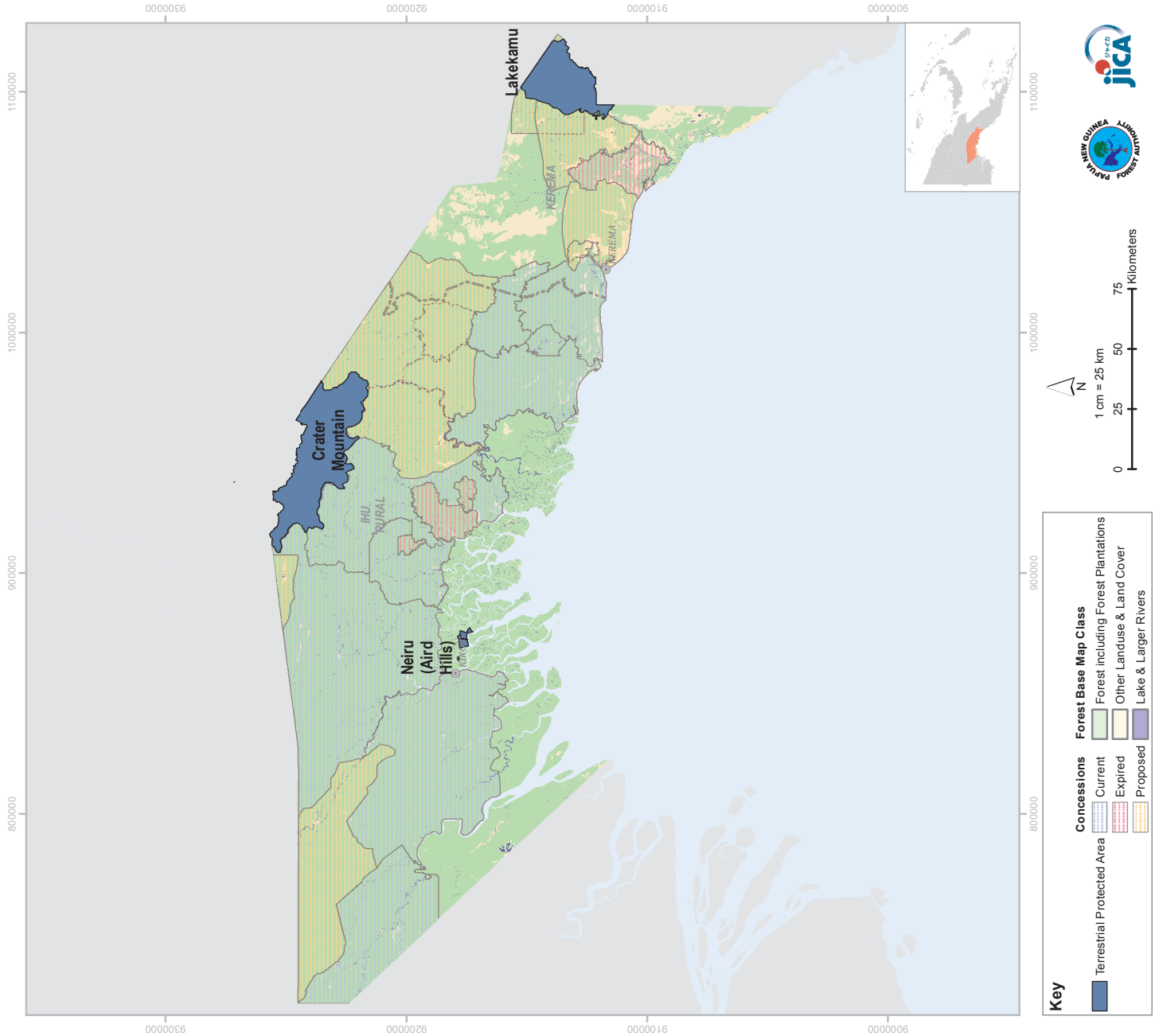
1. Central => 66,674 ha
2. Gulf => 61,838 ha
3. Morobe => 37,121 ha

Total Area: 165,633 ha

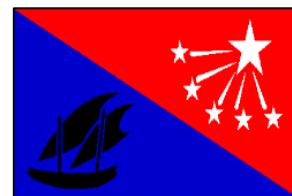
B) Crater Mountain Wildlife Management Area is located in three different provinces:

1. Chimbu => 89,928 ha
2. Eastern Highlands => 52,848 ha
3. Gulf => 130,958 ha

Total Area: 273,734 ha



3. Central Province



General information/Overview

1. Location

Central Province is located in the south coast of mainland of PNG, it shares the border with Northern (Oro) Province, the rugged Owen Stanley Range.

Provincial Administration Centre: Konedobu (Port Moresby)

Land area: 2, 955, 783 ha

Population: 269, 756 (2011)

Number of District: 4 (Abau, Goilala, Kairuku-Hiri, Rigo)

Number of Local Level Governments (LLGs): 13 LLGs

2. Forest Information







Forest Area: 2, 503, 069 ha

Provincial Tree

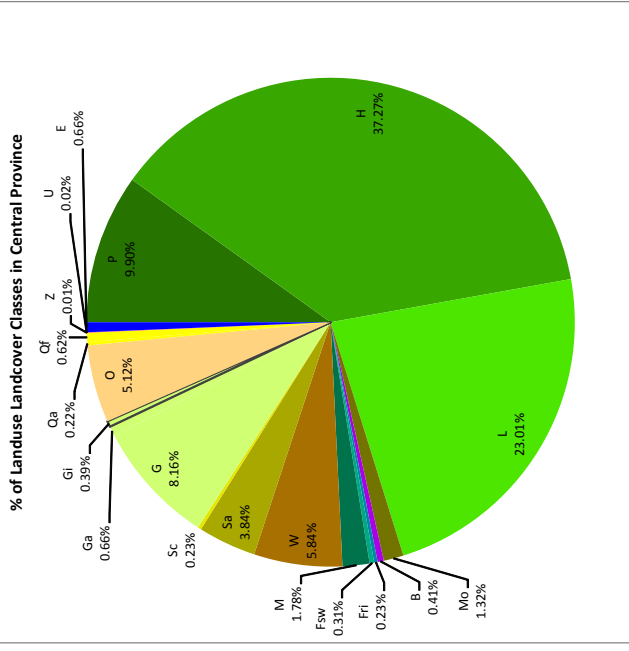
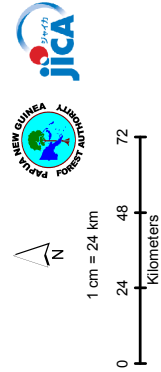
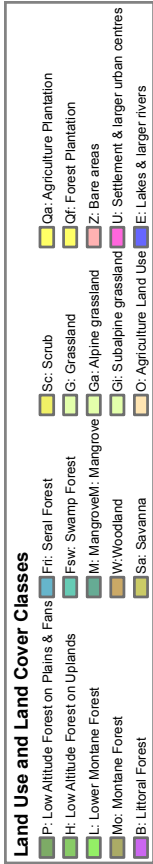
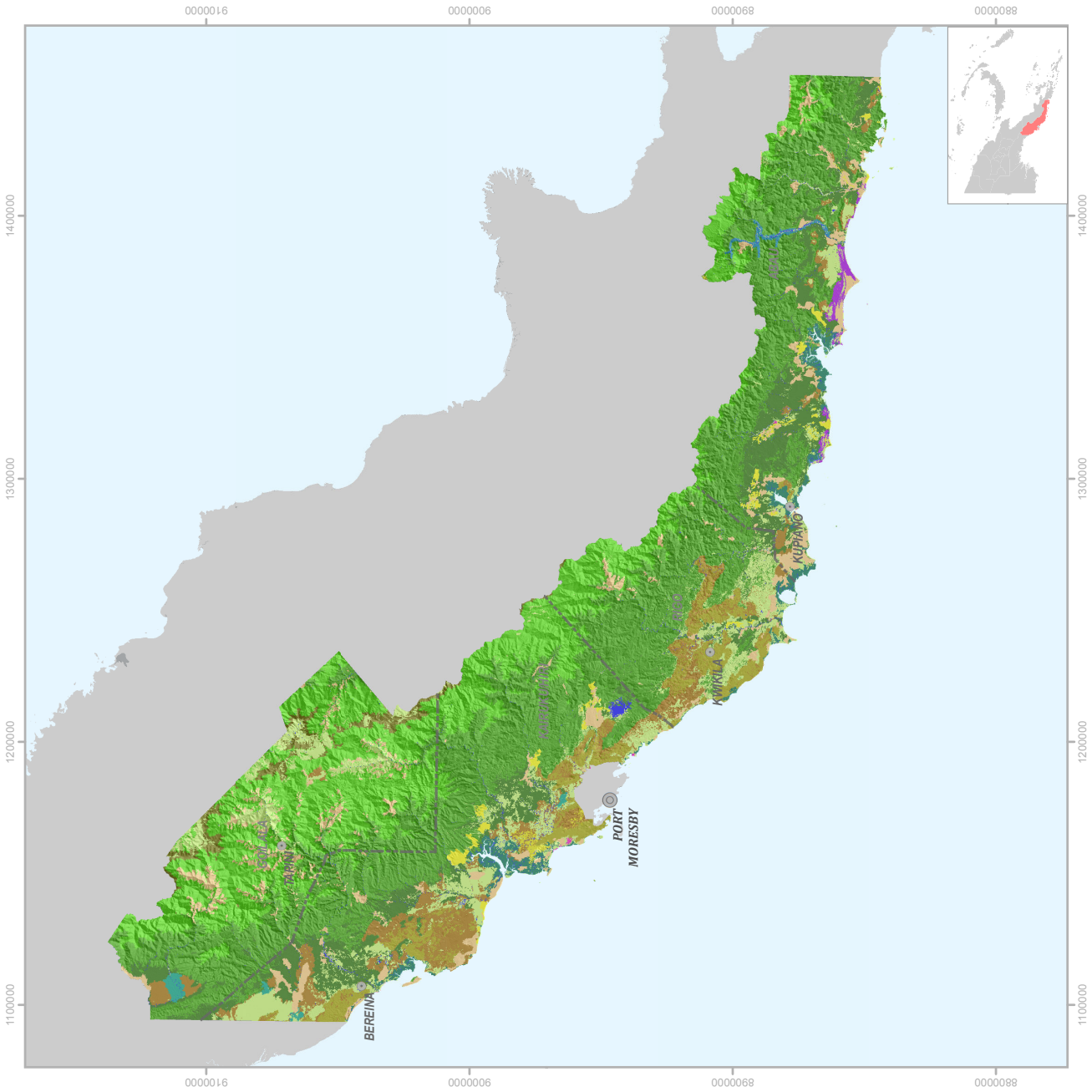
The provincial tree is 'Rosewood' (scientifically known as *Pterocarpus indicus*) and is commonly found in Low Altitude Forest on Plains and Fans

Significance of Provincial tree:

It is a valuable hard wood species (durability and quality; colour) and is a banned species for export in round log form but can be processed (timber) for domestic use and export as well. Rosewood is used by the people of Central to make kundu drums (traditional instrument) which is mainly used in traditional dances/singsing during bride price (ceremony where the groom's family give food or traditional money to the bride's family) and other special occasions. It is also used for carvings and other artefacts by the people. The sap is used as herbal remedy/medicine for coughs.

Scientific name: <i>Pterocarpus indicus</i>	Family: <i>Fabaceae</i>	Common Name/Trade name: <i>Rosewood</i>
<p><u>Description</u></p> <p>A large canopy tree with crooked or straight cylindrical bole and has a buttress. Outer bark is brownish grey, rough, scaly or flaky. Inner bark blaze white or slightly pink and dark red sticky sap. Leaves: compound pinnate (two or more pairs of leaflets), upper surface of leaf is green and underneath is pale green. Flower: I yellow or yellowish orange flower. Fruit: winged, flattened green when immature, brown when mature. Seeds: one to four seeds and winged (fruit with a thickened central seed-bearing part and a surrounding stiff membranous wing); easily dispersed by the wind.</p>		
Tree	Bark	Leaf/Leaves
 <p>Source: http://tropical.theferns.info/viewtropical.php?id=Pterocarpus+indicus </p>	<p>Outer bark</p>  <p>Source: https://www.google.com/search?q=pterocarpus+indicus+bark&tbm=isch&source </p> <p>Inner bark</p>  <p>Photo source: KDamas, Senior Botanist, FRI, Lae, Morobe Province</p>	 <p>Source: http://tropical.theferns.info/viewtropical.php?id=Pterocarpus+indicus </p>
<p>Note:</p> <p>Short description was from the PNG Plant database website (link below)</p> <p>http://www.pngplants.org/PNGtrees/TreeDescriptions</p>	Flower	Fruit/Seed
	 <p>Source: https://www.dreamstime.com/stock-image-pterocarpus-indicus-blooming-tree-image40129141 </p>	 <p>Photo source: KDamas, Senior Botanist, FRI, Lae, Morobe Province</p>

VEGETATION AND LAND COVER MAP OF CENTRAL PROVINCE (2012 FOREST BASEMAP VERSION 1.1)



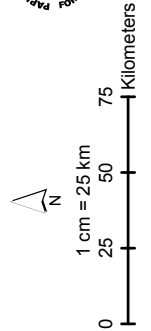
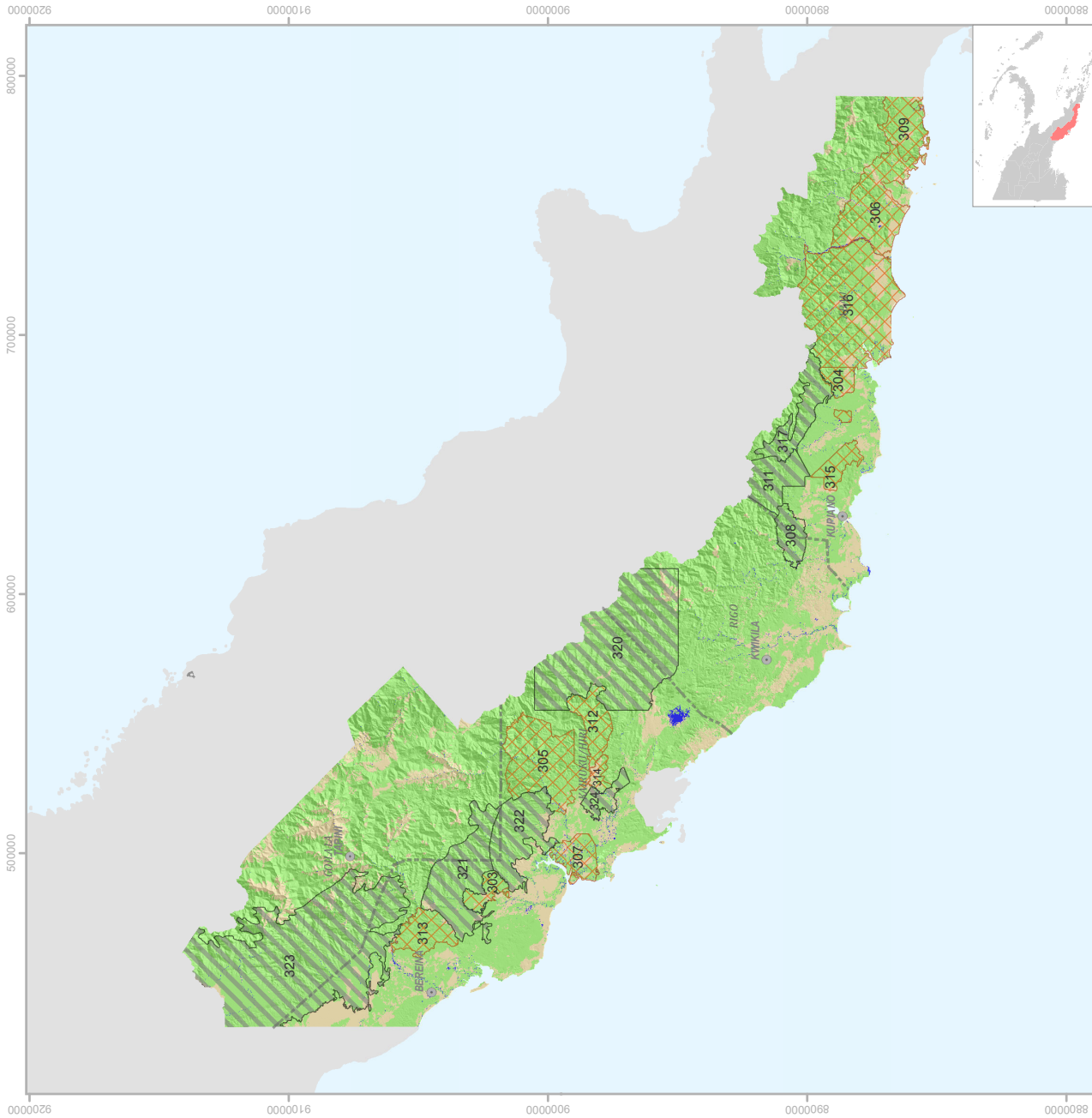
Pie Chart showing percentage in Landuse, Landcover of Central Province.

% of Landuse Landcover

Code	Abau	Golatala	Kairuku Hiri	Rigo
P	19.19%	2.49%	12.23%	4.16%
H	46.63%	25.14%	36.14%	45.73%
L	11.08%	51.48%	12.64%	15.53%
Mo	0.01%	4.65%	0.21%	0.10%
B	1.71%			
Fri	0.96%			
Fsw		0.73%		0.35%
M	3.05%		2.13%	0.83%
W	2.60%	1.33%	11.13%	7.58%
Sa	0.19%		6.37%	10.24%
Sc	0.02%		0.68%	
G	5.60%	3.72%	11.80%	11.94%
Ga	0.04%	2.45%	0.01%	
Gi	0.01%	1.44%	0.03%	
O	6.62%	6.35%	3.89%	3.19%
Qa	0.60%	0.13%	0.20%	0.02%
Qf	1.01%	1.44%	0.02%	
Z	0.01%			
U	0.02%		0.02%	
E	0.65%	0.21%	1.10%	0.49%
Land Area (ha)	708,794.90	782,154.81	962,527.01	500,630.04

Table showing percentage in Landuse, Landcover of Districts in Central Province. Percentage calculated from area in hectares.

TIMBER CONCESSION MAP OF CENTRAL PROVINCE



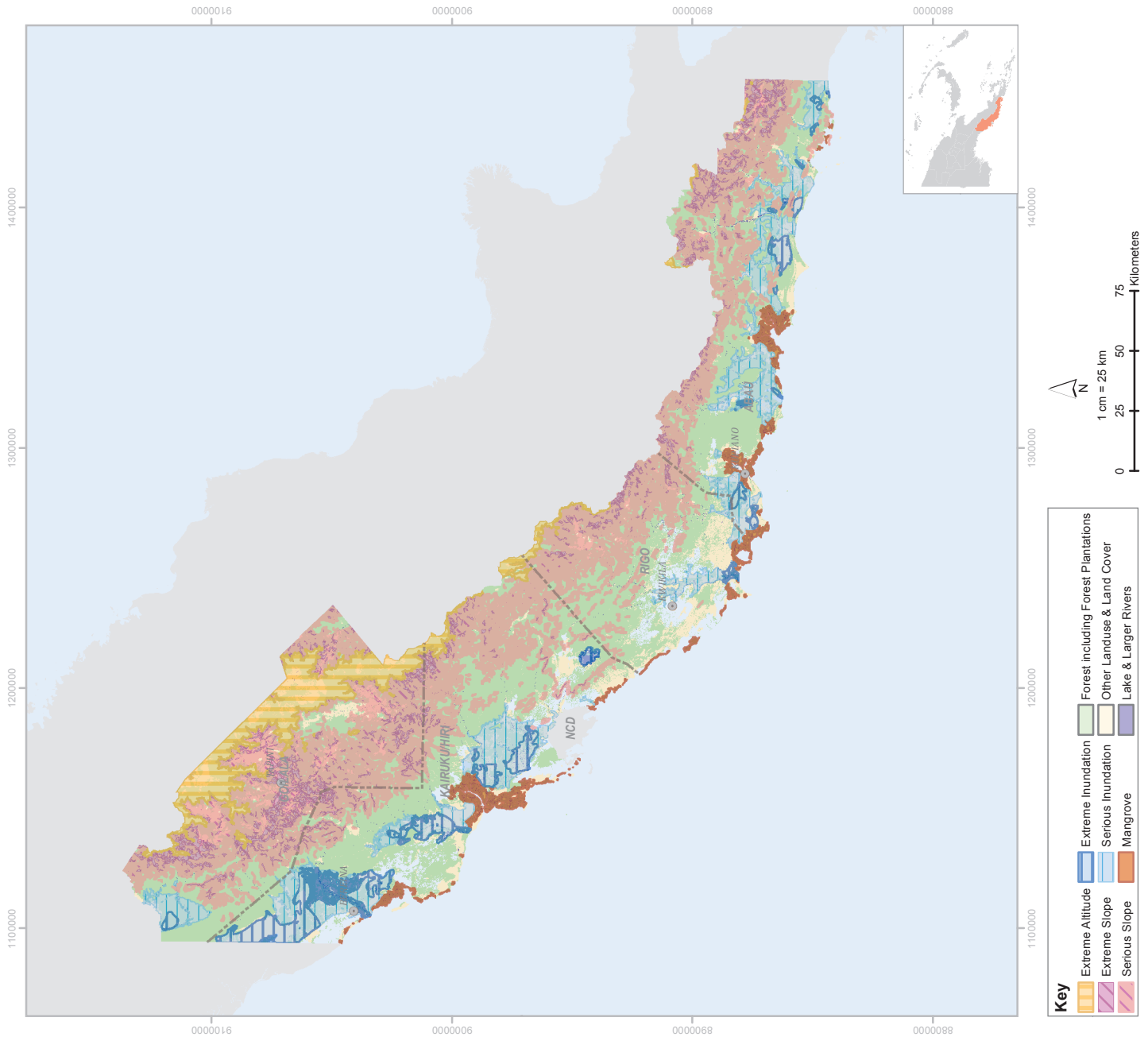
Key

- District Administration Centers
- District Boundary
- Forest Including Forest Plantations
- Other Landuse & Land Cover
- Lakes & larger rivers
- ▨ Proposed
- ▨ Active

PLAN_ID	NAME	AREA (ha)	CONCESSION TYPE	STATUS
313	Ome Ome	27,747.46	TRP	Concession
314	Varagadi FMA	7,000.53	FMA	Concession
316	Cloudy Bay	148,340.29	FMA	Concession
305	North Vanapa TRP	79,144.76	TRP	Concession
312	Edevu TRP	26,688.76	TRP	Concession
304	Ganai	11,489.18	TRP	Concession
303	Iva Inika	13,375.91	TRP	Concession
306	Bonua Magarida	72,004.88	TRP	Concession
309	West Gadatsu TRP	32,835.44	TRP	Concession
307	Gorohu TRP	23,174.54	LFA	Concession
308	Ormand Lako TRP	19,533.07		Proposed
311	Laiko Imilia LFA	33,504.54		Proposed
322	Transvanapa	57,097.94		Proposed
320	Sogeri / Efogil Timber area	200,892.90		Proposed
324	Brown River Timber Area	13,845.04	TA	Proposed
315	Marshall Lagoon	17,730.66	FMA	Concession
323	Uda Mekeo	297,952.60		Proposed
321	Trans Angabanga	76,545.94		Proposed
317	Amaru	37,087.99		Proposed

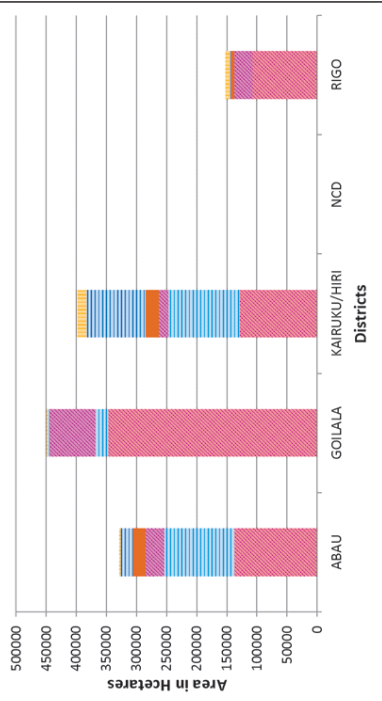
Table showing Timber Concessions of Central Province. Information updated as at 2016.

CONSTRAINTS TO COMMERCIAL TIMBER PRODUCTION, CENTRAL PROVINCE



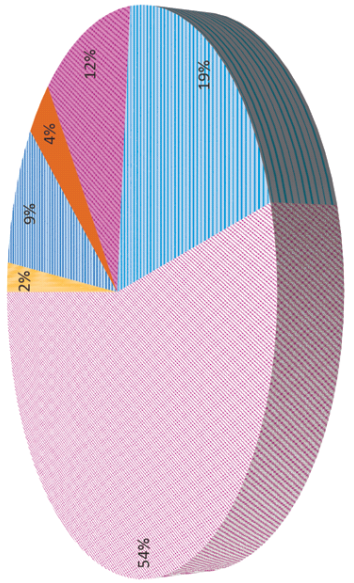
Brief Report on Logging Constraints of Central Province

Constraints in each District



The majority of the constrained areas in the Central Province are inclined and inundated. The province is bordered by mangroves throughout the coastlines and high altitude areas inland towards the Owen-Stanley Range. The Rigo District has the lowest amount of constrained areas in the province (NCD not included, as it is an urban area), while the other three districts have about the same fraction (of constrained areas) in the province. Most of the inclined areas ('Serious Slope' and 'Extreme Slope') is located in the Goilala District, with Abau, Kairiku-Hiri and Rigo Districts having about equal occurrences.

% of each Constraint in Province



TERRESTRIAL PROTECTED AREAS, CENTRAL PROVINCE

Information on Terrestrial Protected Areas in Central Province

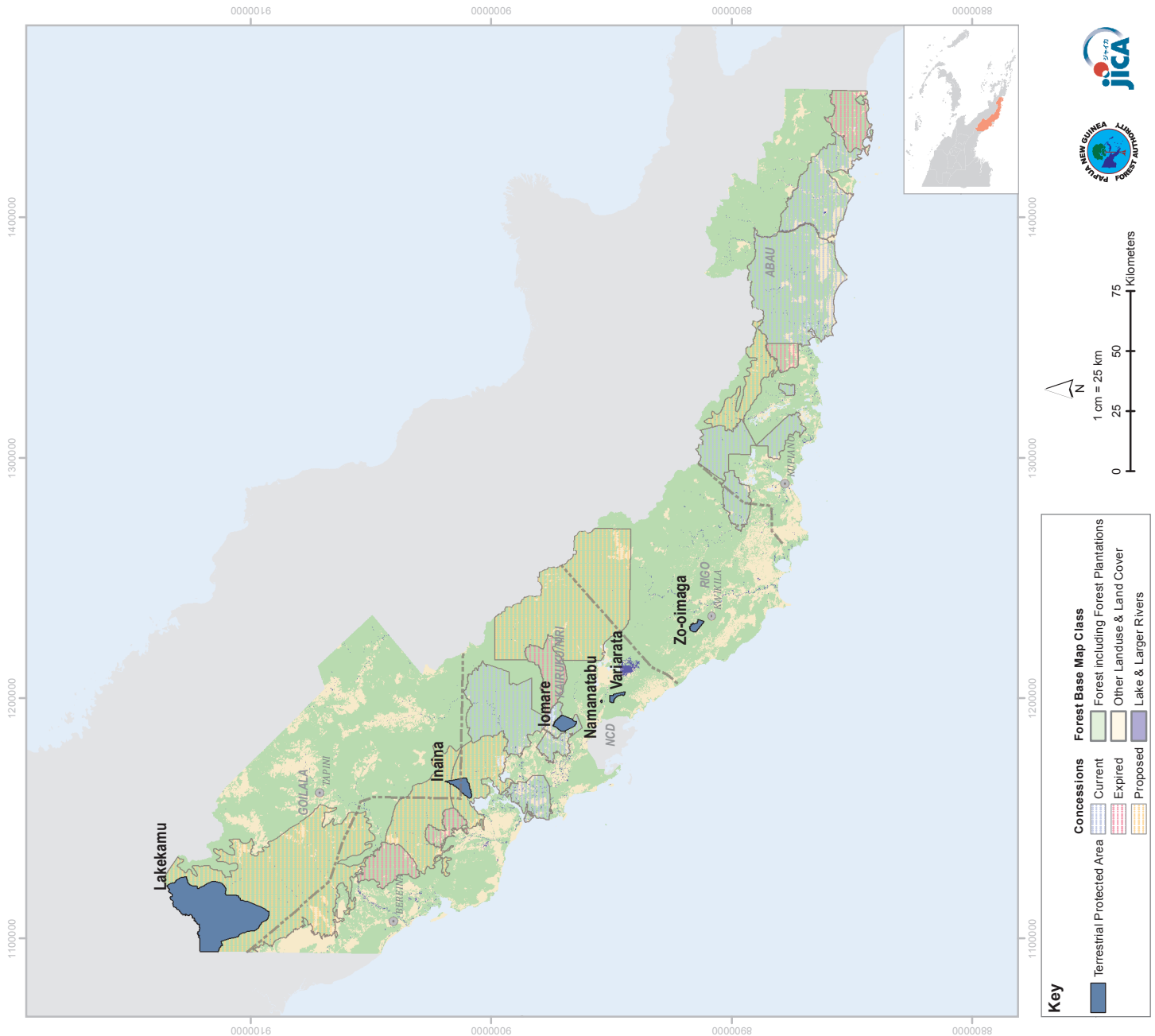
Name	Inaina Proposed WMA
Protected Area ID	<NA>
Protected Area Type	Wildlife Management Area
Province	Central
Location	Inaina
Area (ha)	3,964
Longitude	147° 1' 14" E
Latitude	9° 6' 35" S
Name	Iomare WMA
Protected Area ID	11
Protected Area Type	Wildlife Management Area
Province	Central
Location	Iomare
Area (ha)	3,923
Longitude	147° 15' 49" E
Latitude	10° 44' 5" S
Name	Lakekamu Proposed CA
Protected Area ID	<NA>
Protected Area Type	Conservation Area
Province	Central
Location	Lakekamu
Area (ha)	66,674
Longitude	146° 32' 2" E
Latitude	8° 1' 40" S
Name	Namanatabu Res.
Protected Area ID	31
Protected Area Type	Reserve
Province	Central
Location	Namanatabu
Area (ha)	55
Longitude	147° 21' 1" E
Latitude	10° 35' 49" S
Name	Variarata Nat. Park
Protected Area ID	51
Protected Area Type	National Park
Province	Central
Location	Variarata
Area (ha)	1,028
Longitude	147° 22' 8" E
Latitude	10° 32' 39" S
Name	Zo-oimaga WMA
Protected Area ID	53
Protected Area Type	Wildlife Management Area
Province	Central
Location	Zo-oimaga
Area (ha)	1,472
Longitude	147° 38' 25" E
Latitude	10° 15' 3" S

Note:

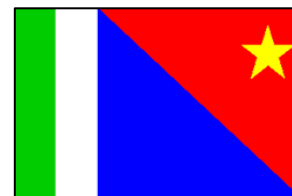
Lakekamu Conservation Area is located in three different provinces:

1. Central => 66,674 ha
2. Gulf => 61,838 ha
3. Morobe => 37,121 ha

Total Area: 165,633 ha



4. Milne Bay Province



General information/Overview

1. Location

Milne Bay Province is southeast of mainland of PNG; it covers the eastern part of the island of New Guinea and as well consist number of large to smaller islands. The landforms of the province from the mainland to the islands consist of mountain ranges, coastal plains, floodplains, limestone and coral atolls.

Provincial Administration Centre: Alotau

Land area: 1, 416, 666 ha

Population: 276, 512 (2011)

Number of District: 4 (Alotau, Esa'ala, Kiriwinia-Goodenough,
Samarai- Murua)

Number of Local Level Governments (LLGs): 16 LLGs

2. Forest Information

Forest Area: 1, 024, 130 ha






Provincial Tree

The provincial tree is 'Ebony' (scientifically known as *Diospyros maritima*) and it is commonly found in Low Altitude Forest on Plains and Fans.

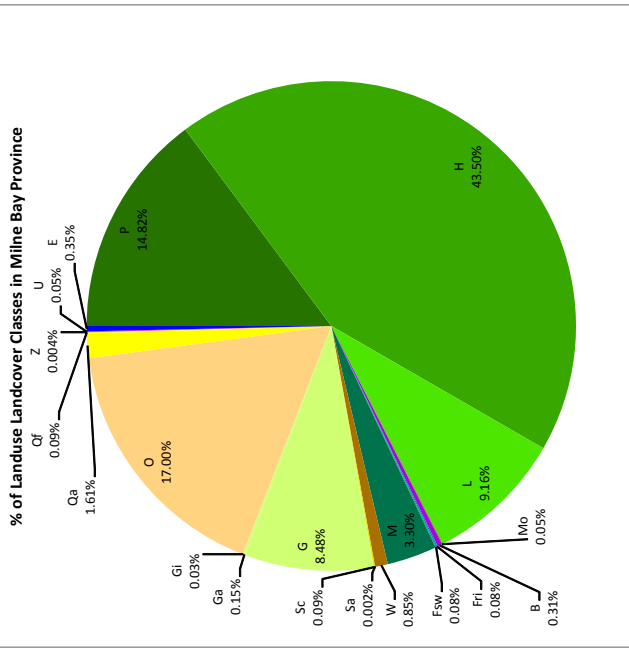
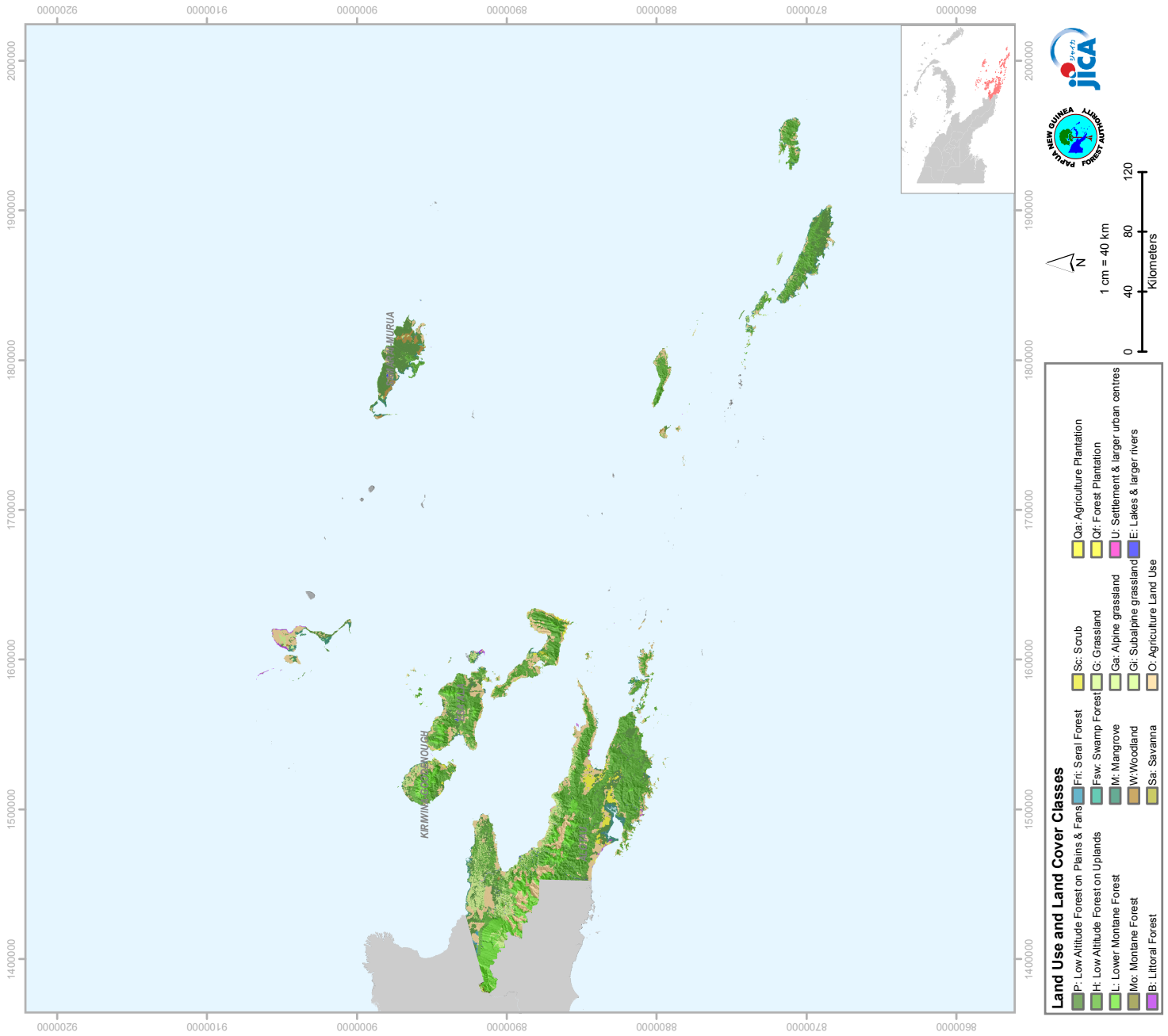
Significance of Provincial tree:

It is a hard wood species, however it is a banned species and not exported in round log form but it is harvested for local use (carved into wooden products).

Ebony is dominant on the islands of Milne Bay and is an important species for the province. Traditionally, the locals used it mainly to carve quality carvings, paddles, furniture & other artefacts. The artefacts are sold is a source of revenue for the local people and given as gifts to other people, guests or dignitaries during special occasions.

Scientific name: <i>Diospyros maritima</i>	Family: <i>Ebenaceae</i>	Common Name/Trade name: Ebony
<p><u>Description</u> A tree which grows up to 15 metres in height and has a crooked bole. Outer bark is smooth greyish brown and flaking off in scales. Leaves: simple, alternate, upper surface glossy dark green and beneath is green. Flowers: male and female flowers on separate plant, small creamy yellow. Fruit: green-yellow berry when immature then turns orange-red when it matures (ripens). Seeds: have 7-8 seeds which are glossy blackish brown in colour.</p>		
Tree	Bark	Leaf/Leaves
 <p>Source: https://www.monaconatureencyclopedia.com/diospyros-maritima/?lang=en</p>	 <p>Source: https://www.monaconatureencyclopedia.com/diospyros-maritima/?lang=en</p>	 <p>Source: http://tropical.theferns.info/viewtropical.php?id=Diospyros+maritima</p>
<p>Note: Short description was from different source.</p>	Flower	Fruit/Seed
	 <p>Source: https://www.naturalmedicinefacts.info/plant/diospyros-maritima.html</p>	 <p>Source: http://tropical.theferns.info/viewtropical.php?id=Diospyros+maritima</p>

VEGETATION AND LAND COVER MAP OF MILNE BAY PROVINCE (2012 FOREST BASEMAP VERSION 1.1)



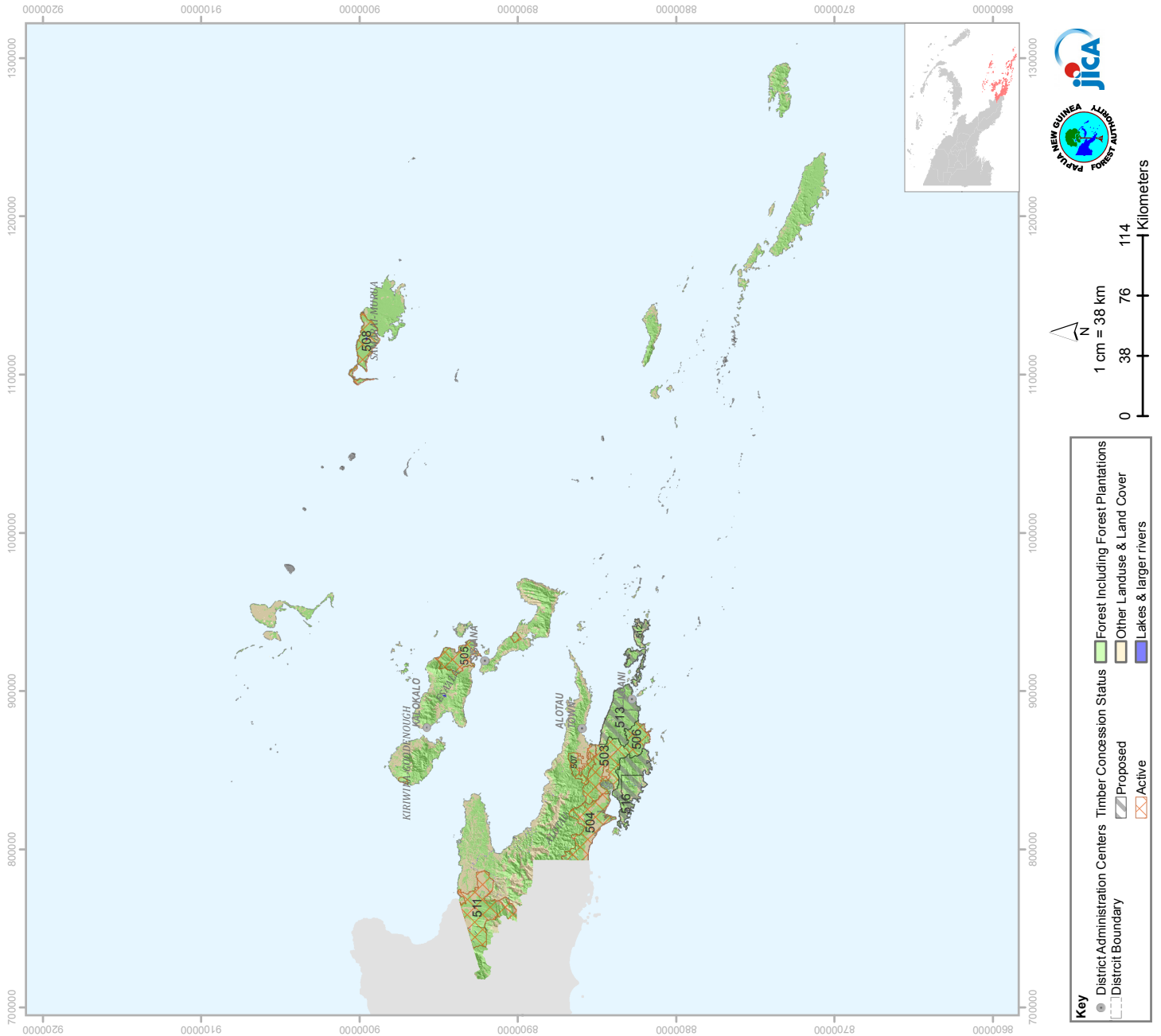
Pie Chart showing percentage in Landuse, Landcover of Milne Bay Province.

% of Landuse Landcover

Code	% of Landuse Landcover	
	Alotau	Samarai
P	9.89%	34.55%
H	44.48%	37.68%
L	13.36%	12.45%
Mo	0.08%	
B	0.16%	0.01%
Fri	0.15%	
Fsw		0.21%
M	1.70%	7.33%
W	0.08%	3.97%
Sc	0.02%	0.02%
G	10.43%	4.41%
Ga	0.27%	
Gi	0.05%	
O	16.59%	11.56%
Ca	2.09%	0.03%
Cf	0.15%	
U	0.05%	0.02%
E	0.43%	0.22%
Land Area (ha)	791,763.07	278,436.51

Table showing percentage in Landuse, Landcover of Districts in Milne Bay Province. Percentage calculated from area in hectares.

TIMBER CONCESSION MAP OF MILNE BAY PROVINCE



Key

- District Administration Centers
- District Boundary
- Forest Including Forest Plantations
- Other Landuse & Land Cover
- Lakes & larger rivers
- ⊗ Proposed
- ⊗ Active

1 cm = 38 km

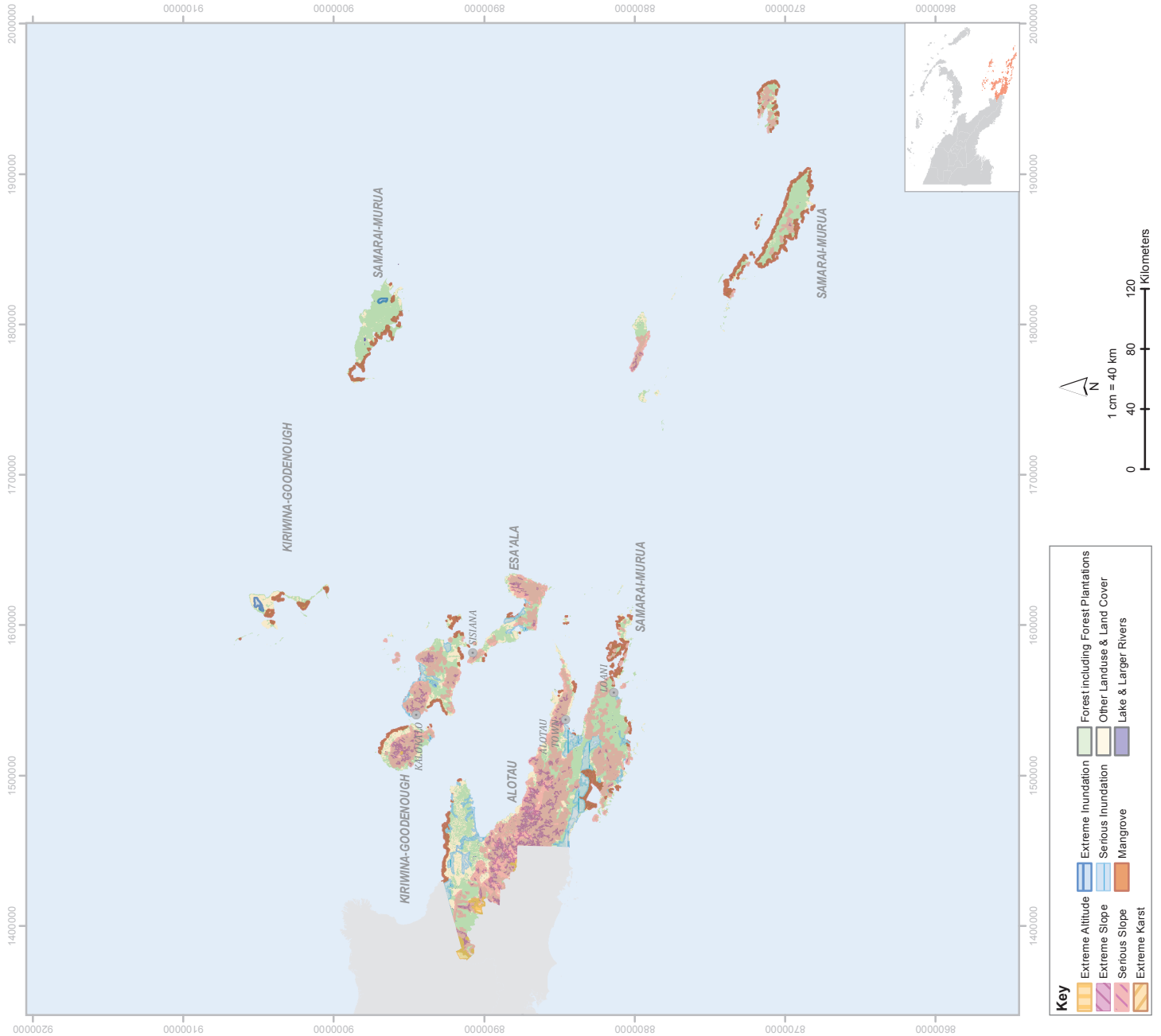
0 38 76 114 Kilometers



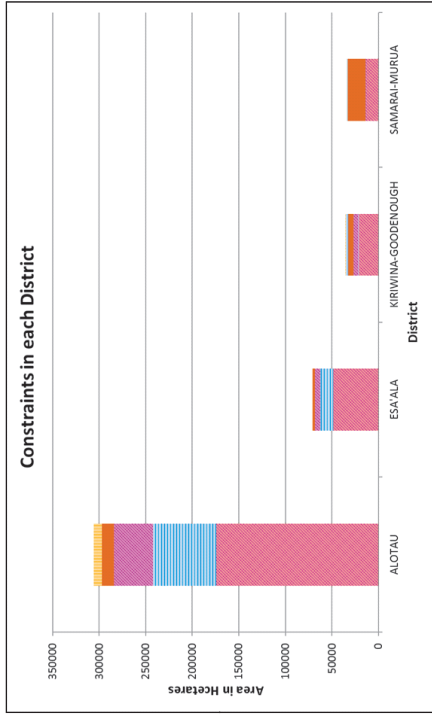
PLAN_ID	NAME	AREA (ha)	CONCESSION TYPE	STATUS
507	WEST GURNEY	21,031.64	TRP	Concession
504	GADAIKU	60,911.87	TRP	Concession
503	SAGARAI	57,685.32	TRP	Concession
506	GARA - MODEWA	23,884.00	TRP	Concession
508	WOODLARK IS	31,112.69	TRP	Concession
502	AWARAI	2,341.90	TRP	Concession
505	EAST FERGUSON	31,237.25	TRP	Concession
501	GOODENOUGH	1,728.51	TRP	Concession
511	East Collingwood	80,442.44	Fma	Concession
515	Sideia Island	2,375.83	PFD	Proposed
509	Basilaki Island	9,811.58	PFD	Proposed
512	East Woodlark Island	10,602.60	PFD	Proposed
516	Suau Coast (West Suau)	60,652.50	PFD	Proposed
513	Loani (East Suau)	56,755.50	PDF	Proposed
599	Dadara's land	20,648.96		Proposed

Table showing Timber Concessions of Milne Bay Province. Information updated as at 2016.

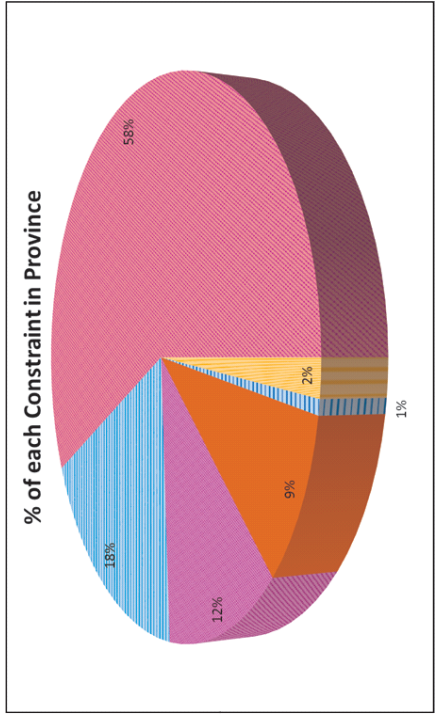
CONSTRAINTS TO COMMERCIAL TIMBER PRODUCTION, MILNE BAY PROVINCE



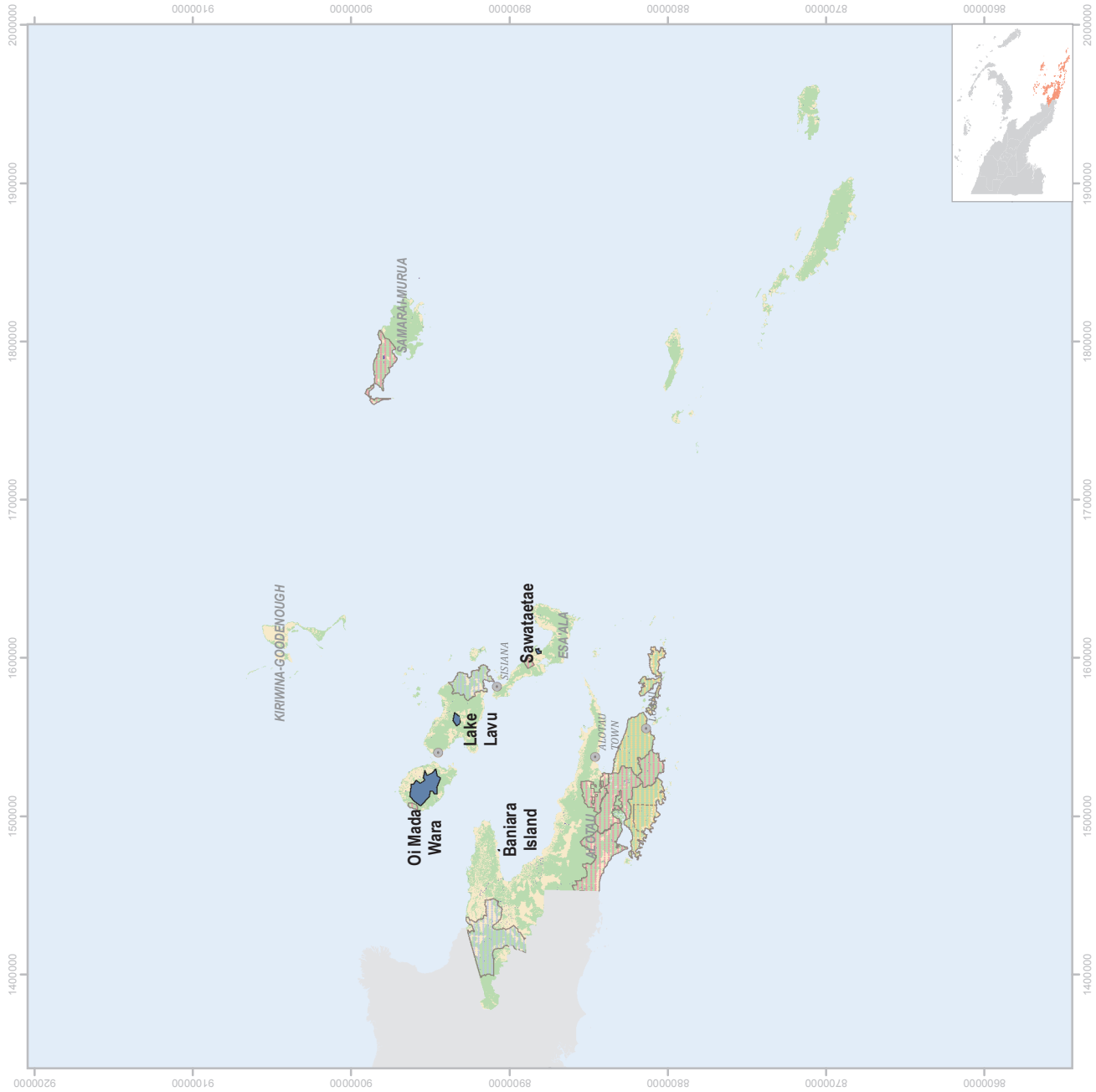
Brief Report on Logging Constraints of Milne Bay Province



The Milne Bay Province is a province made up of islands. Alotau District, being situated on the mainland has the largest land area and amount of constrained areas in the province. Esa'ala, Kiriwina-Goodenough and Samarai-Murua Districts contain the constraints which make up the remaining fraction of constrained areas. The outer islands are mostly constrained by mangroves, with patches of inundated ('Serious Inundation') and inclined ('Serious Slope') areas. The inner islands and the mainland are inundated and inclined, and a few high altitude areas at the eastern end of the Owen Stanley Range.



TERRESTRIAL PROTECTED AREAS, MILNE BAY PROVINCE



Key

	Terrestrial Protected Area		Forest Base Map Class
	Concessions		Forest including Forest Plantations
	Current		Other Landuse & Land Cover
	Expired		Lake & Larger Rivers
	Proposed		

1 cm = 40 km

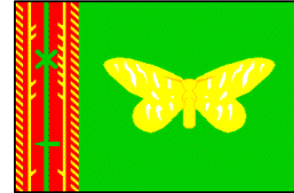
0 40 80 120 Kilometers



Information on Terrestrial Protected Areas in Milne Bay Province

Name	Baniara Island WMA
Protected Area ID	4
Protected Area Type	Wildlife Management Area
Province	Milne Bay
Location	Baniara Island
Area (ha)	37
Longitude	149° 53' 16" E
Latitude	10° 13' 32" S
Name	Lake Lavu WMA
Protected Area ID	19
Protected Area Type	Wildlife Management Area
Province	Milne Bay
Location	Lake Lavu
Area (ha)	2, 612
Longitude	150° 37' 15" E
Latitude	10° 29' 16" S
Name	Oi Mada Wara WMA
Protected Area ID	36
Protected Area Type	Wildlife Management Area
Province	Milne Bay
Location	Oi Mada Wara
Area (ha)	22, 547
Longitude	150° 13' 41" E
Latitude	10° 39' 30" S
Name	Sawataetae WMA
Protected Area ID	42
Protected Area Type	Wildlife Management Area
Province	Milne Bay
Location	Sawataetae
Area (ha)	711
Longitude	151° 1' 18" E
Latitude	10° 2' 10" S

5. Oro (Northern) Province



General information/Overview

1. Location

Oro (Northern) Province is located on the north coast of mainland of PNG, the Owen Stanley Range forms the southern border with Central Province. The province also shares part its border with Morobe Province; coastal floodplains and the Kumusi River.

Provincial Administration Centre: Popondetta

Land area: 2, 263, 371 ha

Population: 186, 309 (2011)

Number of District: 2 (Ijivitari, Sohe)

Number of Local Level Governments (LLGs): 8 LLGs

2. Forest Information

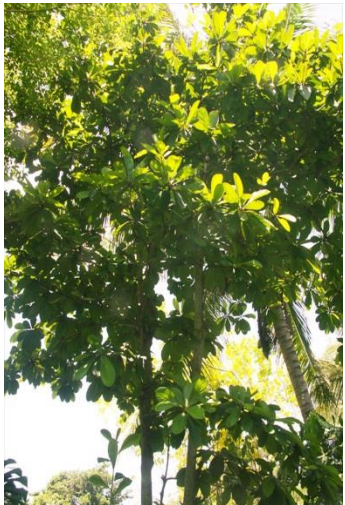
Forest Area: 1, 619, 404 ha

Provincial Tree

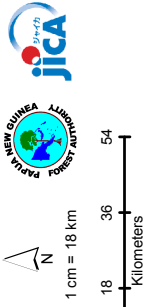
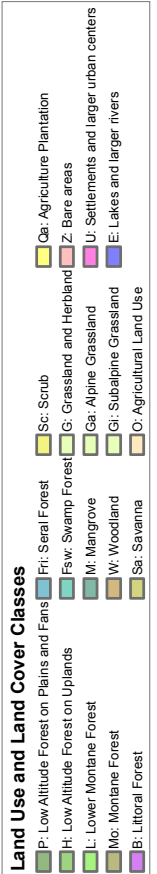
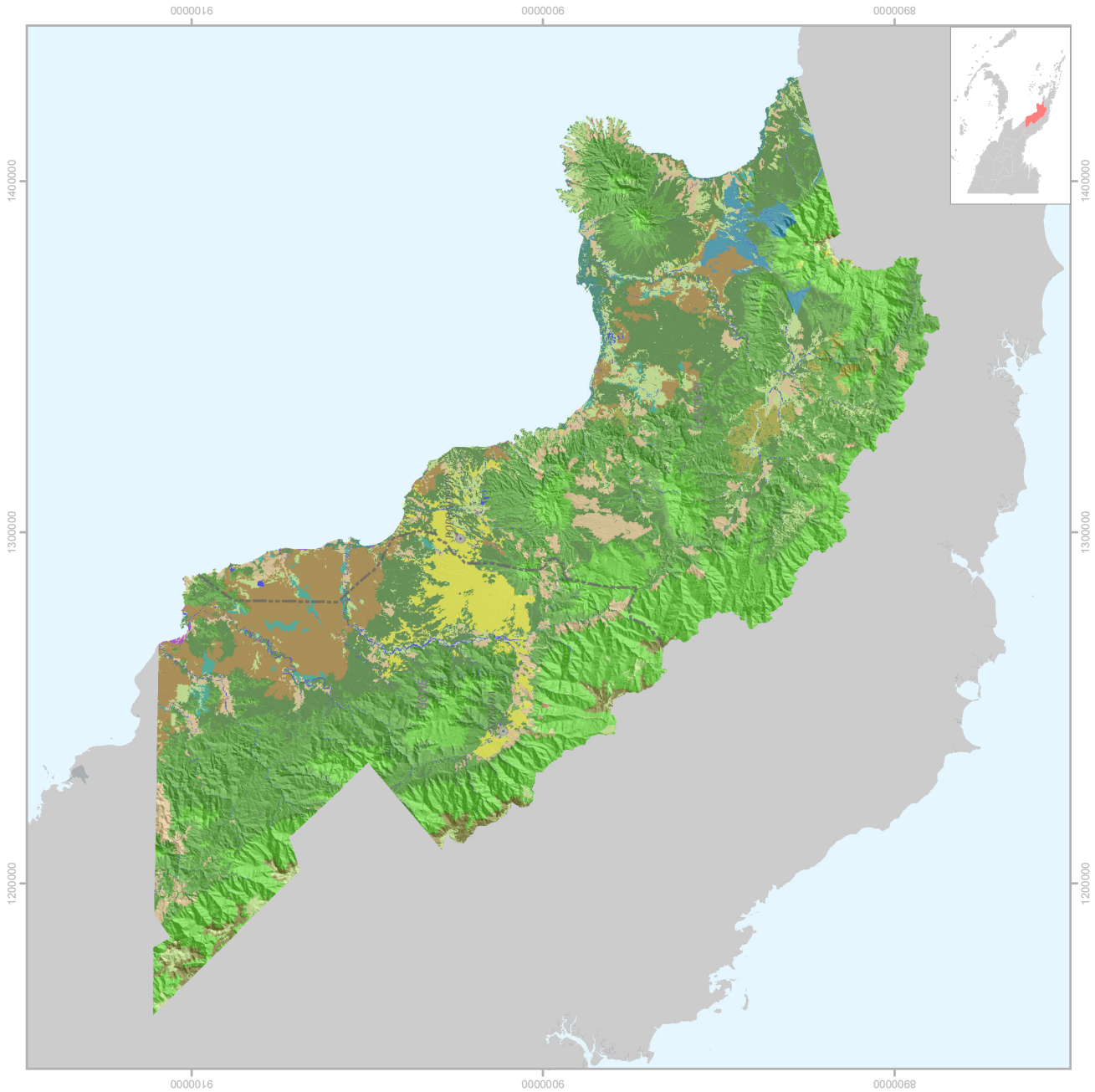
The provincial tree is 'Okari' (scientifically known as *Terminalia kaernbachii*) and it is commonly found in Low Altitude Forest on Plains and Fans.

Significance of Provincial tree:

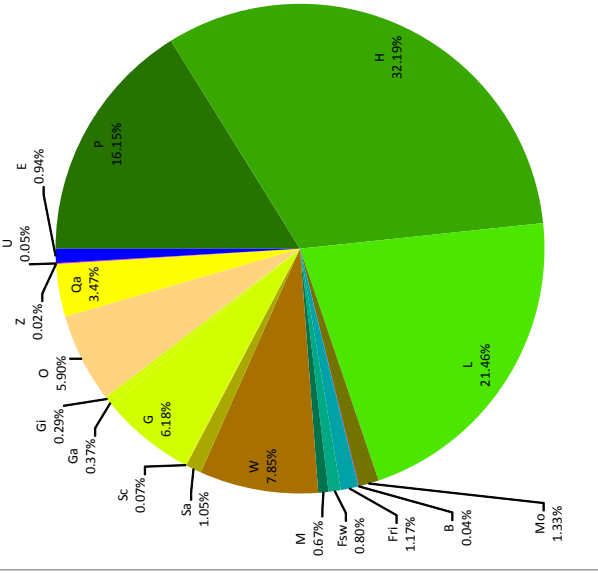
It is a hard wood species which is one of the species exported in round log form. It is one of the popular nuts among the local population for its tasty and delicious flavor. The nuts are highly sought and it provides a source of revenue for the sellers.

Scientific name: <i>Terminalia kaernbachii</i>	Family: <i>Combretaceae</i>	Common Name/Trade name: <i>Okari /Red-brown Terminalia</i>
<p><u>Description</u> A small sub-canopy tree with cylindrical bole and has a buttress. Outer bark is grey and smooth, Leaf; simple, upper surface is green and underneath is green to red (covered with brownish red hairs). Flower: small pale green-white Fruit: slightly oval in shape, green when immature and turns red when it matures (ripens).</p>		
Tree	Bark	Leaf/Leaves
 <p>Source: https://toptropicals.com/pics/garden/m2/2005/0/PICT0650Terminalia_kaernbachii_TA.jpg</p>	 <p>Source: https://singapore.biodiversityonline/species/P-Angi-003328?imageld=0</p>	 <p>Source: https://singapore.biodiversityonline/species/P-Angi-003328?imageld=0</p>
<p>Note: Short description was from the PNG Plant database website (link below) http://www.pngplants.org/PNGtrees/TreeDescriptions</p>	Flower	Fruit/Seed
	 <p>Source: https://toptropicals.com/pics/garden/m1/Podarki_15/Terminalia_kaernbachii_1_MK_h.jpg</p>	 <p>Source: http://www.fiapng.com/Nursery_techniques.pdf</p>

VEGETATION AND LAND COVER MAP OF ORO PROVINCE (2012 FOREST BASEMAP VERSION 1.1)



% of Landuse Landcover Classes in Oro Province

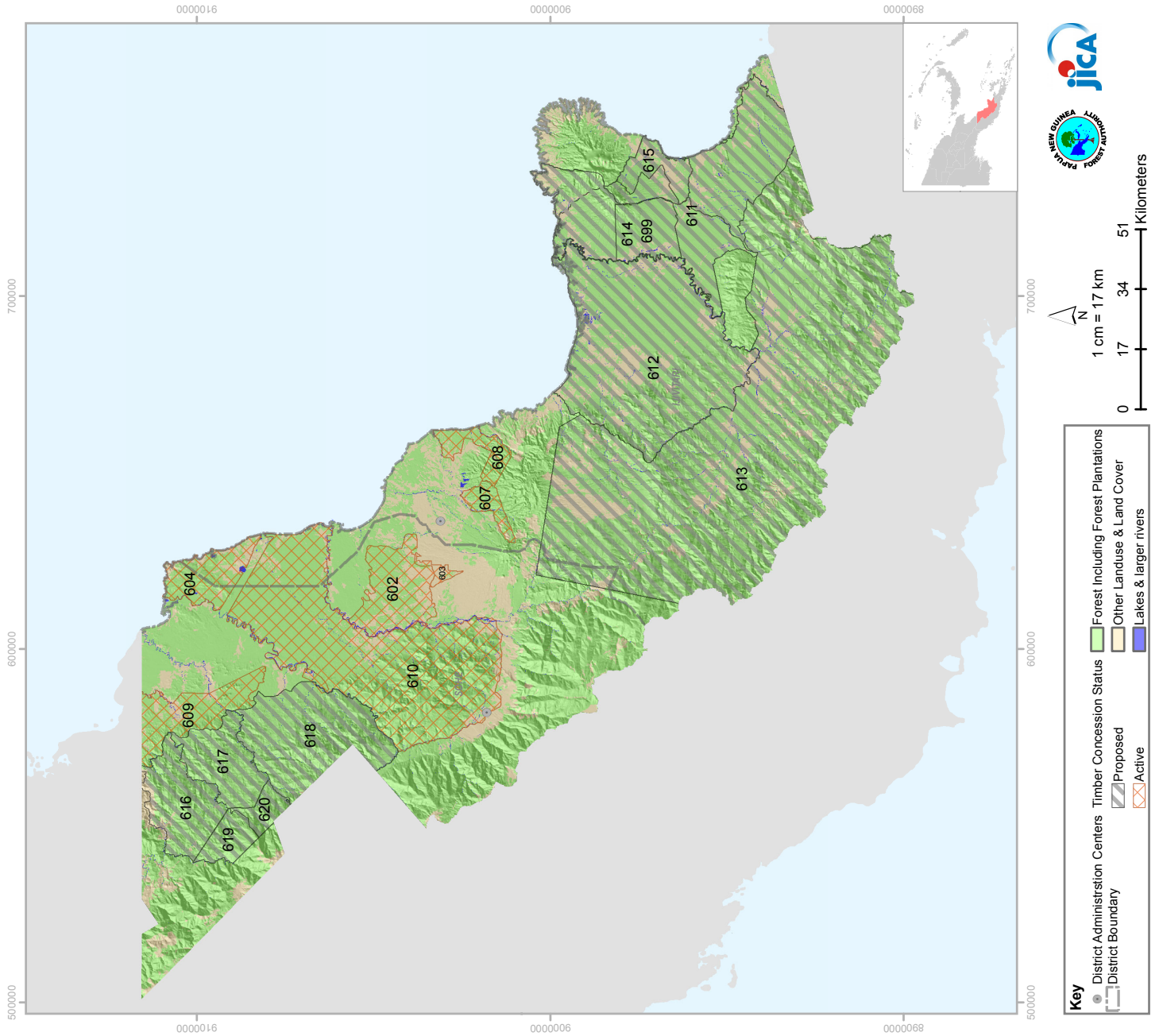


Pie Chart showing percentage in Landuse, Landcover of Oro Province.

% of Landuse Lancover	
Code	Sohe
P	18.70%
H	32.68%
L	18.77%
Mo	0.14%
B	0.07%
Fri	2.07%
Fsw	0.67%
M	0.96%
W	6.22%
Sa	1.86%
Sc	0.13%
G	9.03%
Ga	0.09%
Gi	0.06%
O	6.46%
Qa	1.23%
Z	0.03%
U	0.02%
E	0.88%
Land Area (ha)	1,276,058.77
	981,526.47

Table showing percentage in Landuse, Landcover of Districts in Oro Province. Percentage calculated from area in hectares.

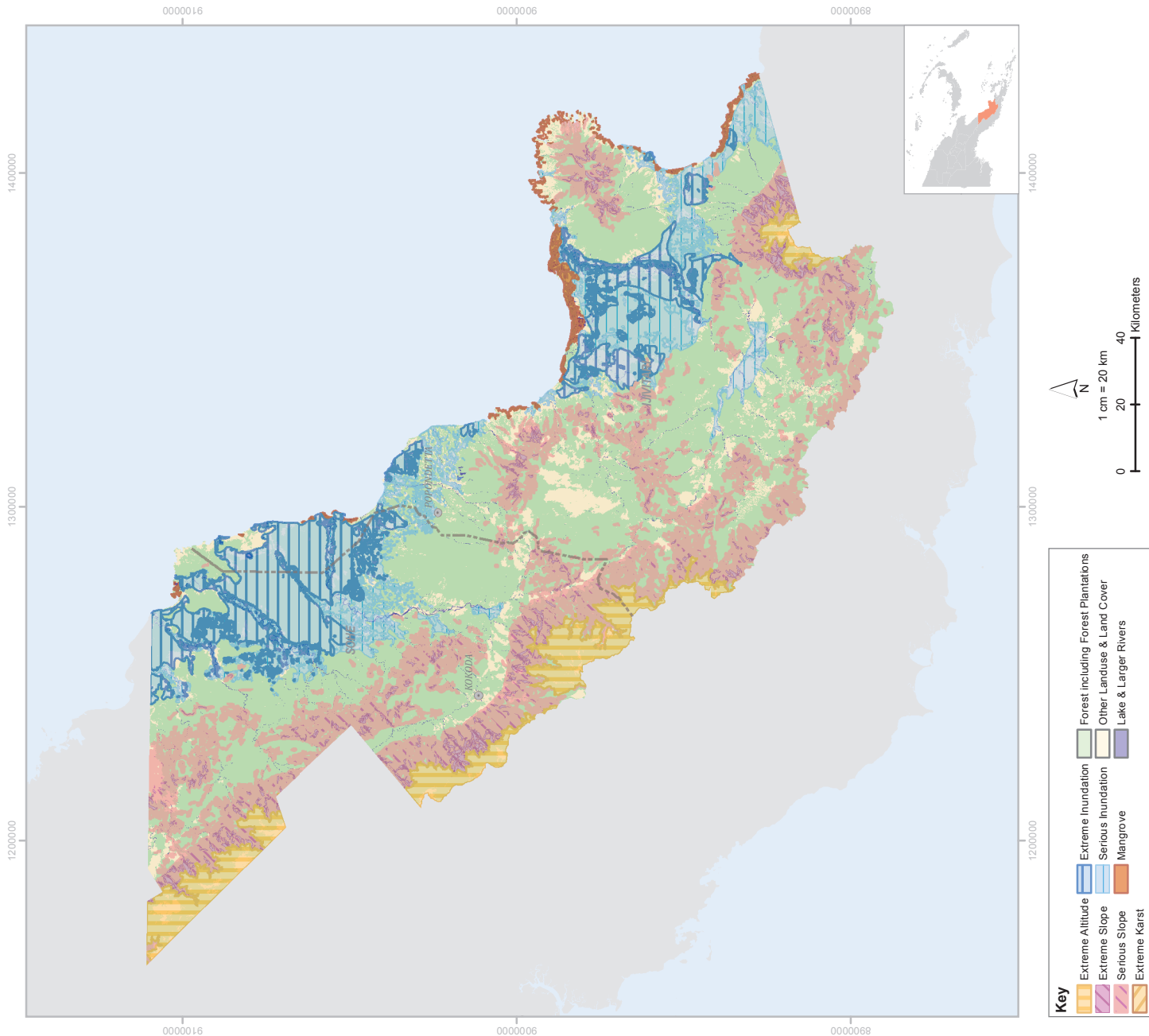
TIMBER CONCESSION MAP OF ORO PROVINCE



PLAN_ID	NAME	AREA (ha)	Concession Type	STATUS
609	YEMA GAIAPA	38,320.26	LFA	Concession
608	EMBI HANAU	14,203.47	TRP	Concession
607	GIRUA ERE	9,608.01	TRP	Concession
603	SAIHO	3,519.07	TRP	Concession
604	IOMA BLOCK 4	29,720.44	TRP	Concession
601	IOMA MAMBARE	2,177.62	TRP	Concession
602	KUMUSI TRP	43,580.85	TRP	Concession
610	IOMA BLOCK 5	219,972.10	FMA	Concession
611	Collingwood Bay	182,410.57	FMA	Proposed
613	Goro Itakama	580,282.94	FMA	Proposed
612	Musa Pongani	214,968.79	FMA	Proposed
614	Musa_Ext	99,216.64	TRP	Proposed
615	oilpalm	17,899.31		Proposed
618	unnamed1	89,709.24		Proposed
617	Eia_Girua	39,879.70	TRP	Proposed
616	Waria_Eia	46,511.79	TRP	Proposed
619	unnamed2	15,292.58		Proposed
620	unnamed3	10,784.07		Proposed
699	Guruguru	27,975.53		Proposed

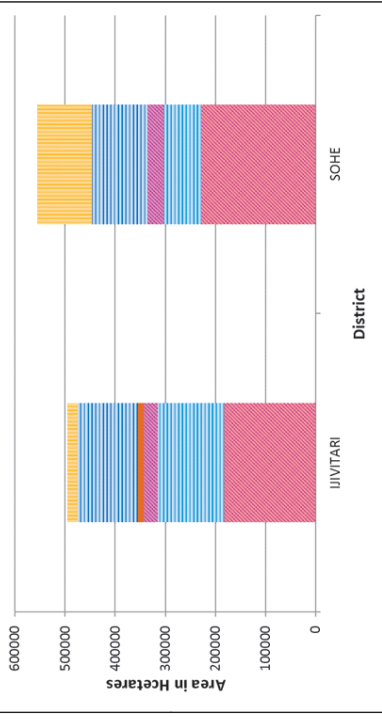
Table showing Timber Concessions of Oro Province.
Information updated as at 2016.

CONSTRAINTS TO COMMERCIAL TIMBER PRODUCTION, NORTHERN (ORO) PROVINCE



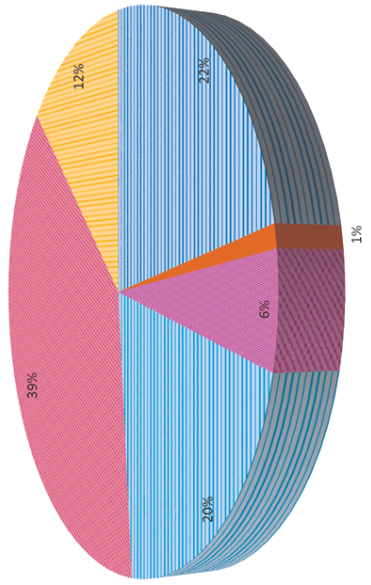
Brief Report on Logging Constraints of Northern (Oro) Province

Constraints in each District



Northern (Oro) Province, has a lot of rugged terrain evidenced by the clusters of high altitude ('Extreme Altitude') and slope ('Serious and Extreme Slope') areas on the western side of the province. The eastern side of the province is heavily inundated ('Serious Inundation' and 'Extreme Inundation') with mangroves along the coastline. About half of the constrained areas are situated almost equally in both the Sohe and Ijivitari Districts. Although, they share almost the same amount of constraints area, the difference margin with regard to land area between the two districts is more prominent, as Ijivitari District has more provincial land area than Sohe District.

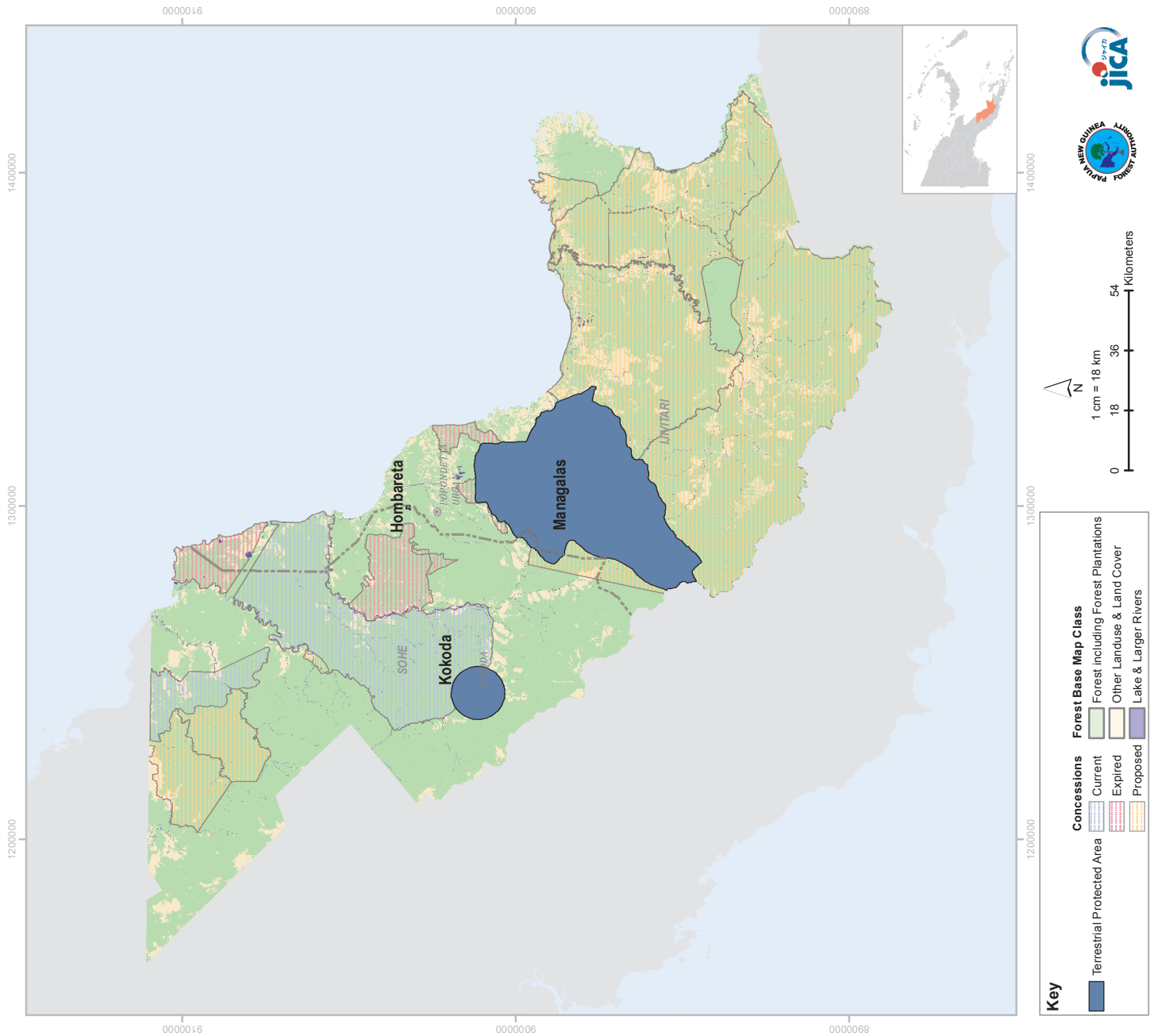
% of each Constraint in Province



TERRESTRIAL PROTECTED AREAS, ORO PROVINCE

Information on Terrestrial Protected Areas in Oro Province

Name	Hombareta WMA
Protected Area ID	9
Protected Area Type	Wildlife Management Area
Province	Oro
Location	Hombareta
Area (ha)	137
Longitude	148° 14' 56" E
Latitude	9° 18' 55" S
Name	Kokoda Memorial Park
Protected Area ID	17
Protected Area Type	National Park
Province	Oro
Location	Kokoda
Area (ha)	19,670
Longitude	147° 45' 0" E
Latitude	9° 7' 0" S
Name	Lakelamu Proposed CA
Protected Area ID	<NA>
Protected Area Type	Conservation Area
Province	Oro
Location	Lakelamu
Area (ha)	37,121
Longitude	146° 35' 17" E
Latitude	8° 23' 52" S
Name	Managalas Proposed CA
Protected Area ID	<NA>
Protected Area Type	Conservation Area
Province	Oro
Location	Managalas
Area (ha)	213,269
Longitude	148° 17' 47" E
Latitude	10° 50' 46" S



6. Southern Highlands Province



General information/Overview

1. Location

Southern Highlands Province is located on the central west of the highlands of PNG and consists of mountain ranges, valleys, hills, plains and swamps.

Provincial Administration Centre: Mendi

Land area: 1, 504, 751 ha

Population: 510, 449 (2011)

Number of District: 5 (Ialibu-Pangia, Imbonggu, Kagua-Erave,
Mendi-Munihu, Nipa-Kutubu)

Number of Local Level Governments (LLGs): 19 LLGs

2. Forest Information

Forest Area: 1, 027, 622 ha

Provincial Tree







The provincial tree is 'PNG Oak'¹⁰ (scientifically known as *Castanopsis accuminatissima*) and is commonly found in Lower Montane forest and Montane forest.

Significance of Provincial tree:

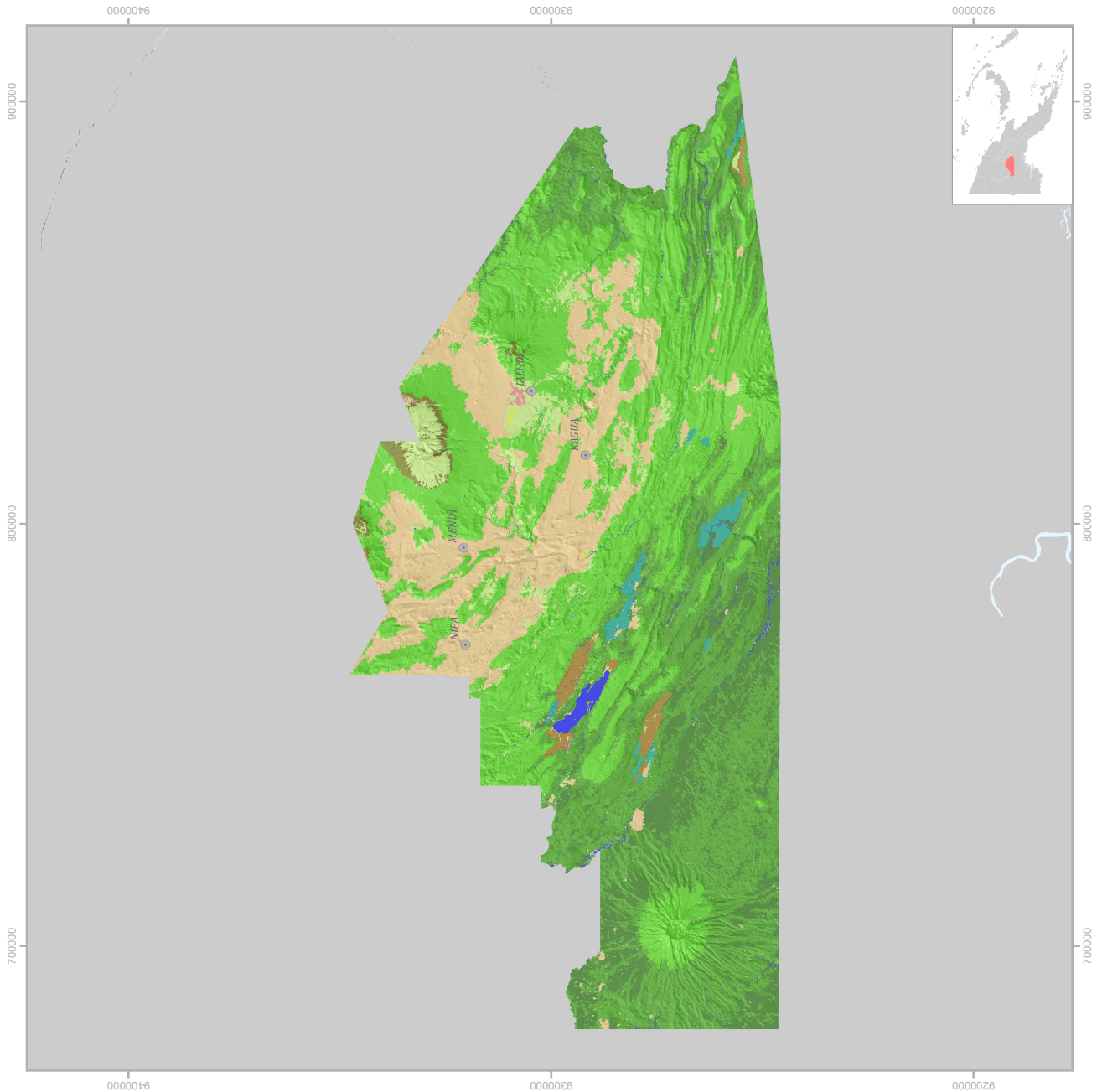
It is a hardwood species and valuable for various uses such as timber for homes, footbridges, furniture, etc. The nuts are used as food source.

Sap from the bark has medicinal properties used for herbal remedy. The leaves are used as decorations for special occasions such as cultural dances and as well burnt to repel insects. The tree is planted around the homes as ornaments and the edible mushroom can be gathered on the stem/trunk of the dead wood.

¹⁰ Southern Highlands and Western Highlands Provinces have nominated *C. accuminatissima* as their provincial trees. One of these provinces will have to select a different tree species in the later version of this report.

Scientific name: <i>Castanopsis acuminatissima</i>	Family: <i>Fagaceae</i>	Common Name/Trade name: <i>PNG Oak</i>		
<p>Description</p> <p>A large canopy tree with markedly fluted straight bole. Outer bark grey or pale brown, rough, fissured and cracked. Inner bark red or pale brown, fibrous with non-sticky colourless sap. Leaves: simple, upper surface is green and lower is pale green or brownish green. Flowers: male and female flowers on the same plant. Small pale yellow, green or brown (pale fawn-coloured) flowers. Fruit/Seed- small brown nut with a single seed.</p>				
Tree	Bark	Leaf/Leaves		
 <p>Source: https://www.123rf.com/photo_46757006_fresh-green-leaves-of-castanopsis-trees.html?fromid=WEpHMFpyU2dVSzdaMDBDM2JvVEI3dz09</p>	 <p>Inner bark</p> <p>Source: http://www.pngplants.org/PNGtrees/TreeDescriptions/Castanopsis_acuminatissima_Bl_A_DC.html</p>	 <p>Source: http://www.pngplants.org/PNGtrees/TreeDescriptions/Castanopsis_acuminatissima_Bl_A_DC.html</p>		
<p>Note:</p> <p>Short description was from the PNG Plant database website (link below)</p> <p>Source: http://www.pngplants.org/PNGtrees/TreeDescriptions/Castanopsis_acuminatissima_Bl_A_DC.html</p>	<th>Flower</th> <td> <th>Fruit/Seed</th> </td>	Flower	<th>Fruit/Seed</th>	Fruit/Seed
	 <p>Source: https://memim.com/castanopsis-acuminatissima.html</p>  <p>Source: http://www.biotik.org/laos/species/c/casac/casac_07_en.html</p>	 <p>Source: https://www.flickr.com/photos/jackforest/23546258383/in/photostream/</p>		

VEGETATION AND LAND COVER MAP OF SOUTHERN HIGHLANDS PROVINCE (2012 FOREST BASEMAP VERSION 1.1)



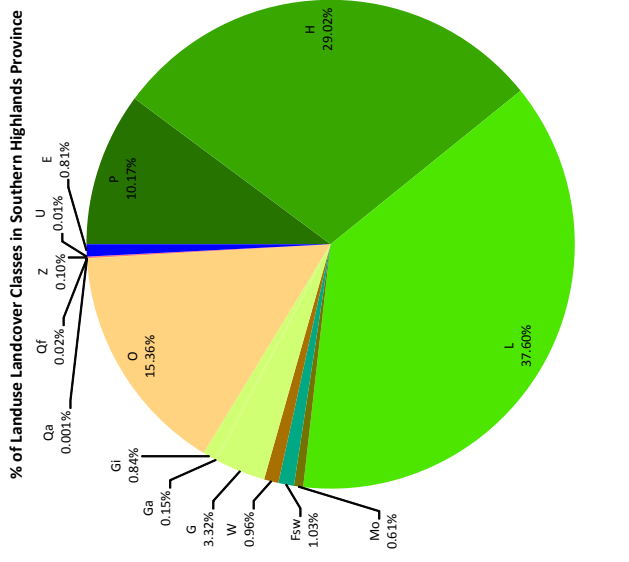
Land Use and Land Cover Classes

1 cm = 15 km

0 15 30 45 Kilometers

JICA

PAPEUA NEU GUINEA



Pie Chart showing percentage in Landuse, Landcover of Southern Highlands Province.

*Note: district information of Southern Highlands Province is not displayed.