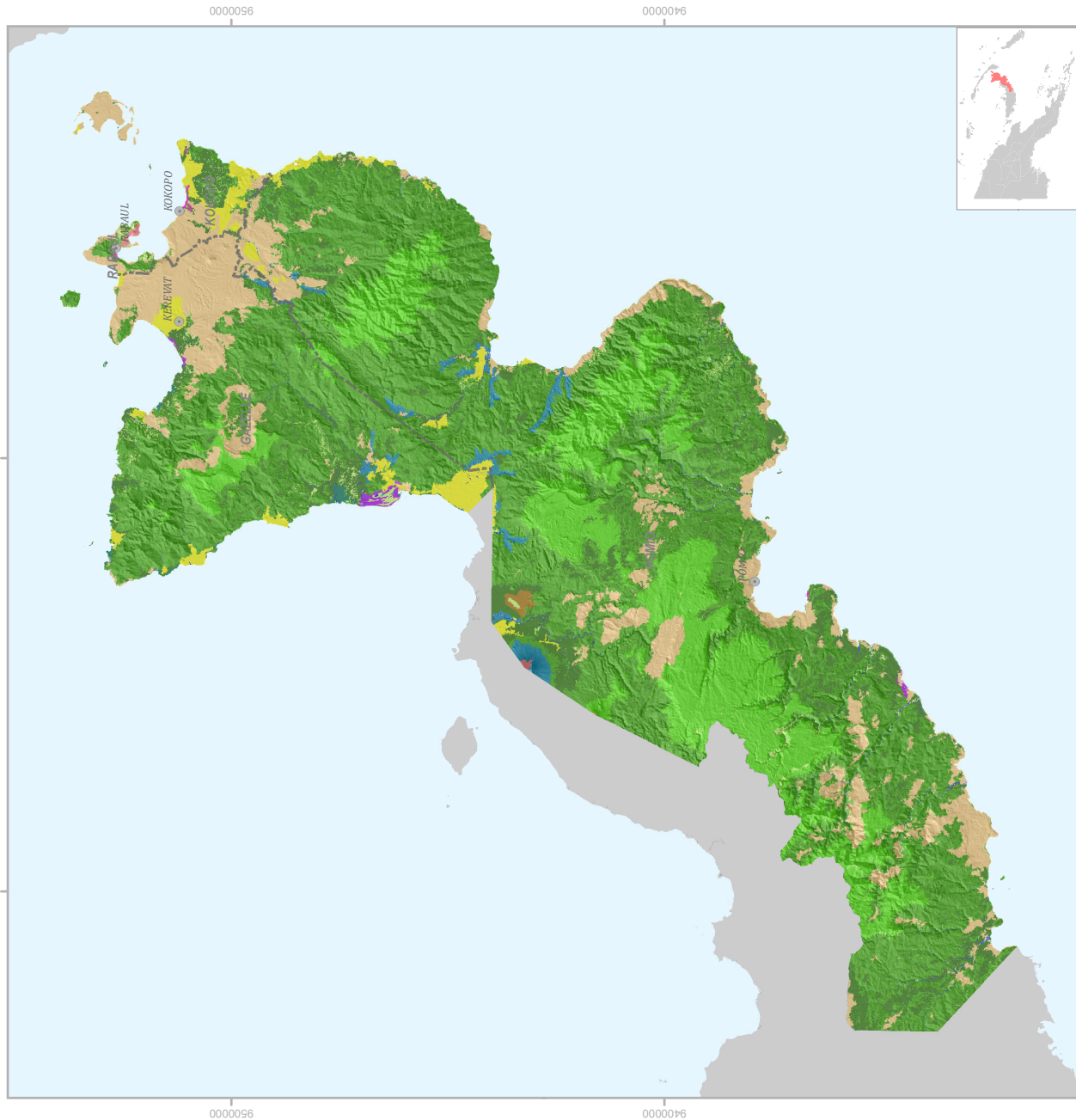


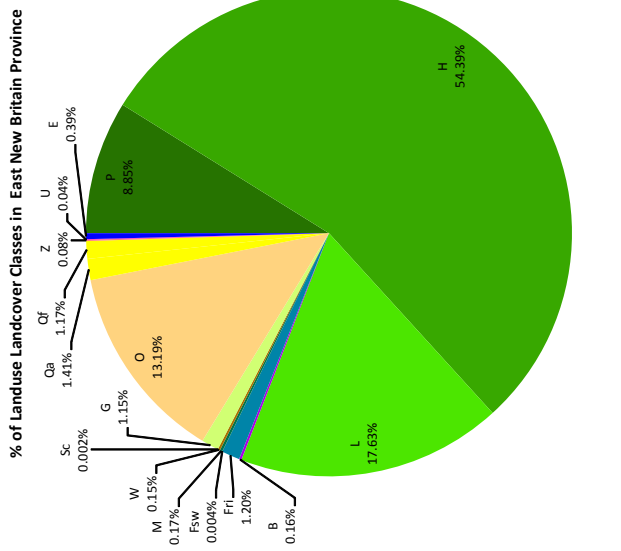
VEGETATION AND LAND COVER MAP OF EAST NEW BRITAIN PROVINCE (2012 FOREST BASEMAP VERSION 1.1)



Land Use and Land Cover Classes

- P: Low Altitude Forest on Plains & Fans
- H: Low Altitude Forest on Uplands
- L: Lower Montane Forest
- B: Littoral Forest
- Sc: Scrub
- G: Grassland
- O: Agriculture Land Use
- Qa: Agriculture Plantation
- W: Woodland
- Frit: Serai Forest
- Fsw: Swamp Forest
- Mt: Mangrove
- Of: Forest Plantation
- Z: Bare areas
- U: Settlement & larger urban centres
- E: Lakes & larger rivers

1 cm = 15 km
0 15 30 45 Kilometers

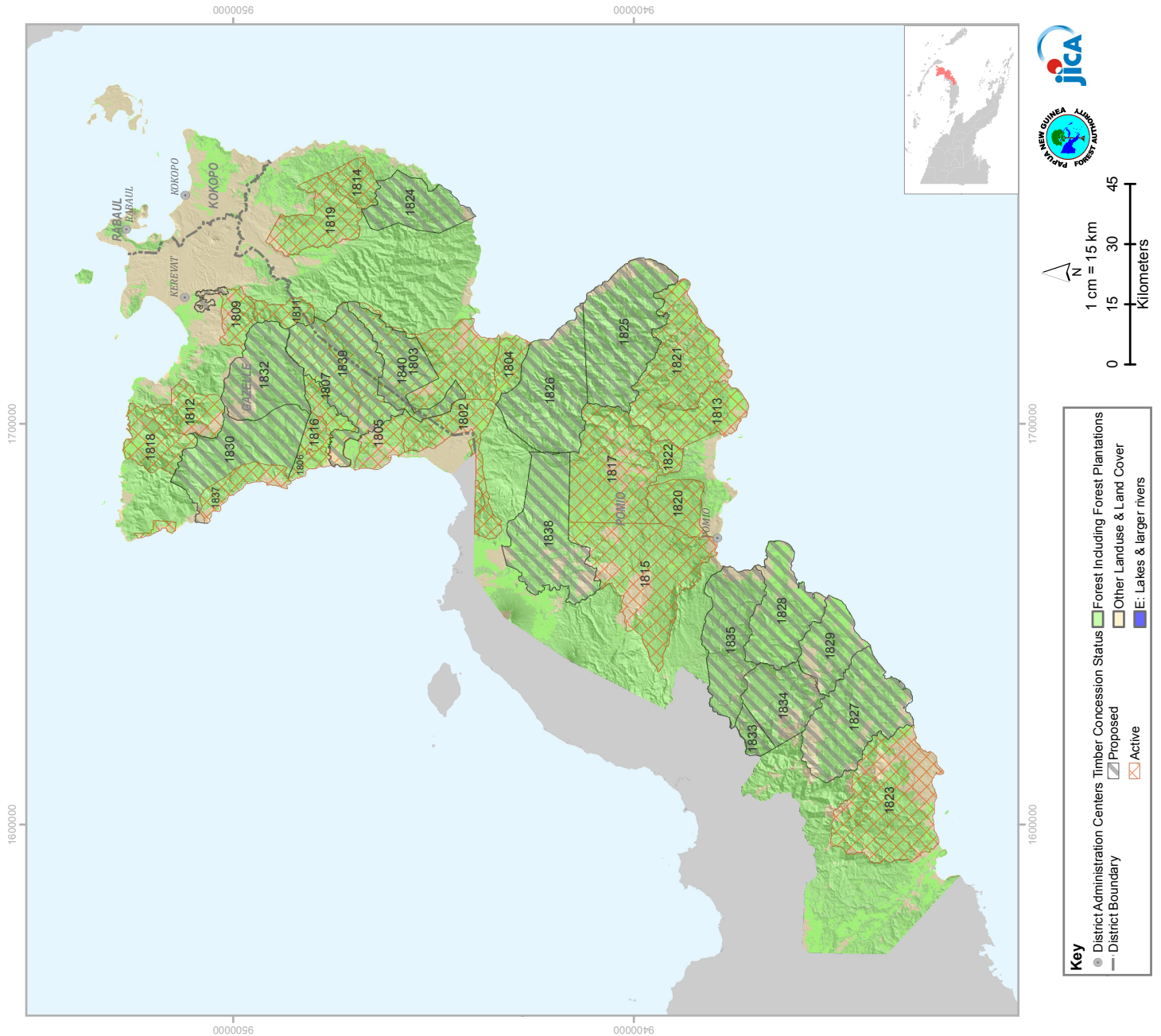


Pie Chart showing percentage in Landuse, Landcover of East New Britain Province.

% of Landuse Landcover			
Code	Gazelle	Kokopo	Rabaul
P	8.65%	18.30%	8.63%
H	56.45%	9.63%	55.59%
L	5.38%		22.07%
B	0.62%		0.03%
Frit	0.72%		1.40%
Fsw	0.02%		
M	0.72%	0.06%	
W			0.20%
Sc			0.002%
G	1.86%	2.51%	0.77%
O	19.70%	42.47%	9.93%
Qa	2.59%	18.75%	0.46%
Cf	2.97%	7.19%	0.44%
Z			0.04%
U		0.91%	0.01%
E	0.32%	0.17%	0.42%
Land Area (ha)	334,200.24	39,305.16	1,140,332.36
			9,984.37

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

TIMBER CONCESSION MAP OF EAST NEW BRITAIN PROVINCE

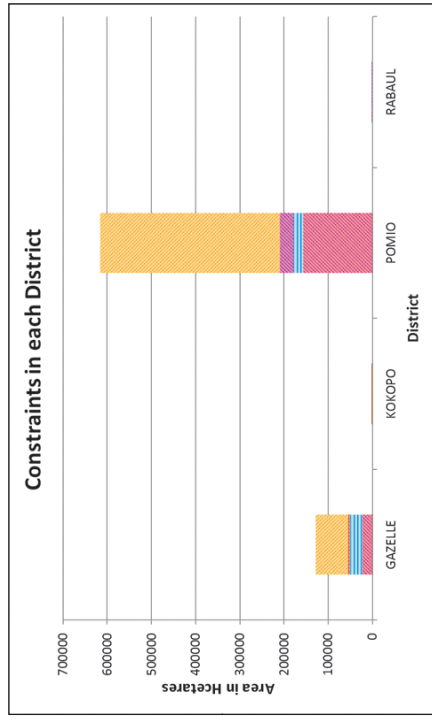


PLAN_ID	NAME	AREA (ha)	CONCESSION TYPE	STATUS
1819	Senbem Ext.	25,128.39	TRP	Concession
1812	Ramandu	16,045.39	TRP	Concession
1822	Bergberg Ext.	4,812.28	TRP	Concession
1817	Nutuve	52,920.97	TRP	Concession
1814	Gar	9,722.73	TRP	Concession
1820	Waterfall Bay	15,078.99	TRP	Concession
1811	Gaulim Ext.	7,982.55	TRP	Concession
1815	Inland Pomio	63,720.08	TRP	Concession
1813	Tokai Matong	22,148.40	TRP	Concession
1821	Cape Orford	46,001.07	TRP	Concession
1804	Tamolip	8,910.10	TRP	Concession
1803	Simbali	78,224.43	TRP	Concession
1806	Aghathat	4,879.01	TRP	Concession
1816	Aghathat Ext.	5,113.13	TRP	Concession
1807	Dengnangi	32,095.55	TRP	Concession
1801	Kaboku	1,249.25	TRP	Concession
1805	Loi River	17,641.92	TRP	Concession
1802	Molkoikol	23,602.53	TRP	Concession
1809	Vudal	9,781.07	TRP	Concession
1836	KEREVAT PLANTATION	1,785.54	Proposed	Proposed
1823	Mukus - Tolo	64,129.59	FMA	Concession
1818	TARAIWARA	16,944.21	TRP	Concession
1835	Wunung Sigte	39,429.03	Proposed	Proposed
1828	Melkoi Wunung Block A	35,254.75	Proposed	Proposed
1829	Melkoi Wunung Block B	22,804.67	Proposed	Proposed
1824	Cape Bogan	25,404.83	Proposed	Proposed
1826	Wide Bay	50,008.32	Proposed	Proposed
1827	Melkoi Block 3	49,742.17	Proposed	Proposed
1833	Upper Nakanal Plateau	6,176.19	Proposed	Proposed
1834	Lower Nakanal Plateau	27,238.12	Proposed	Proposed
1825	Kolmal	57,314.68	Proposed	Proposed
1832	Toriu Headwaters	34,594.89	Proposed	Proposed
1830	Pondo Ext	40,190.03	Proposed	Proposed
1810	Seraji	1,664.83	TRP	Concession
1837	Pondo TRP	12,158.11	TRP	Concession
1838	Suikoi	49,711.06	Proposed	Proposed
1839	Dengnagi Block2	50,640.32	Proposed	Proposed
1840	Simbali Block1	26,996.18	Proposed	Proposed

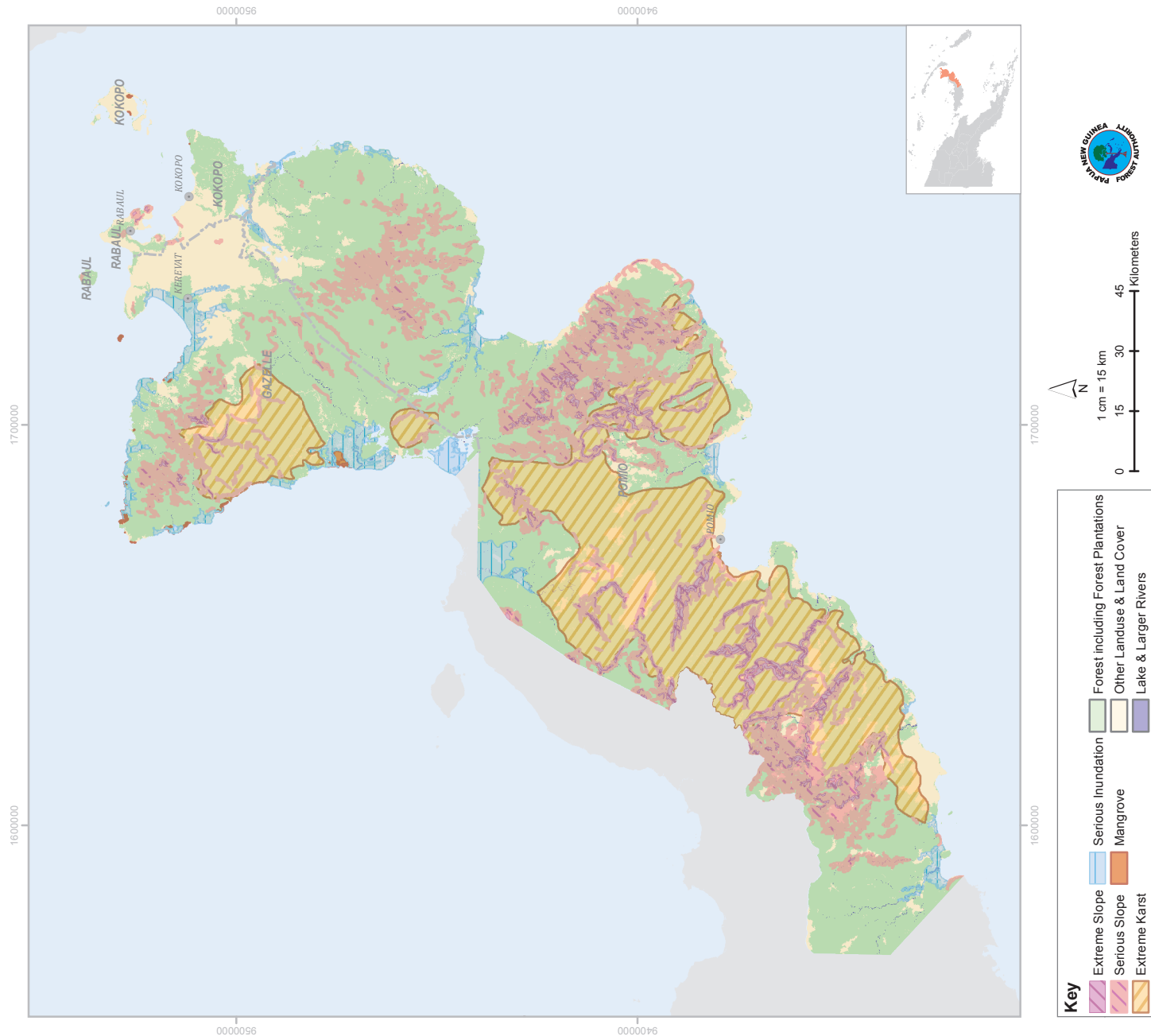
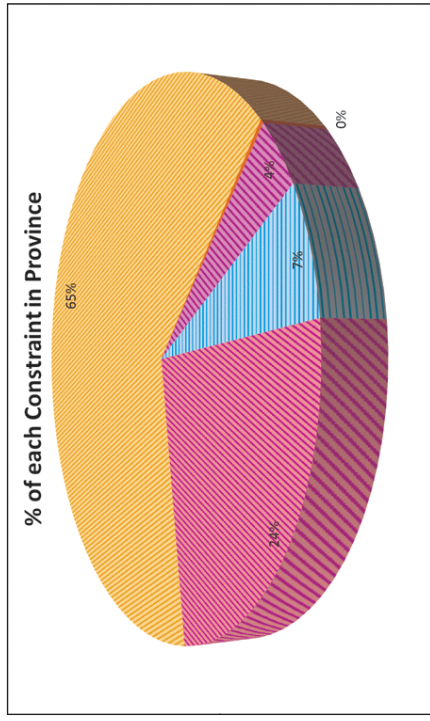
Table showing Timber Concessions of East New Britain Province. Information updated as at 2016.

CONSTRAINTS TO COMMERCIAL TIMBER PRODUCTION, EAST NEW BRITAIN PROVINCE

Brief Report on Logging Constraints of East New Britain Province



East New Britain's commercial timber production constraints are found entirely in Pomio and Gazelle; with the main constraint being 'Extreme karst'. 'Extreme Karst' accounts for 65% of all constraints in the province. The largest concentration of 'Extreme Karst' can be sited towards the South-West end of Pomio, as well as towards the North-West end of Gazelle. The second largest constraint to commercial timber production is 'Serious Slope' (24%). The majority of 'Serious Slope' can be found in Pomio, in particular, in the Centre, South-West and North-East end.



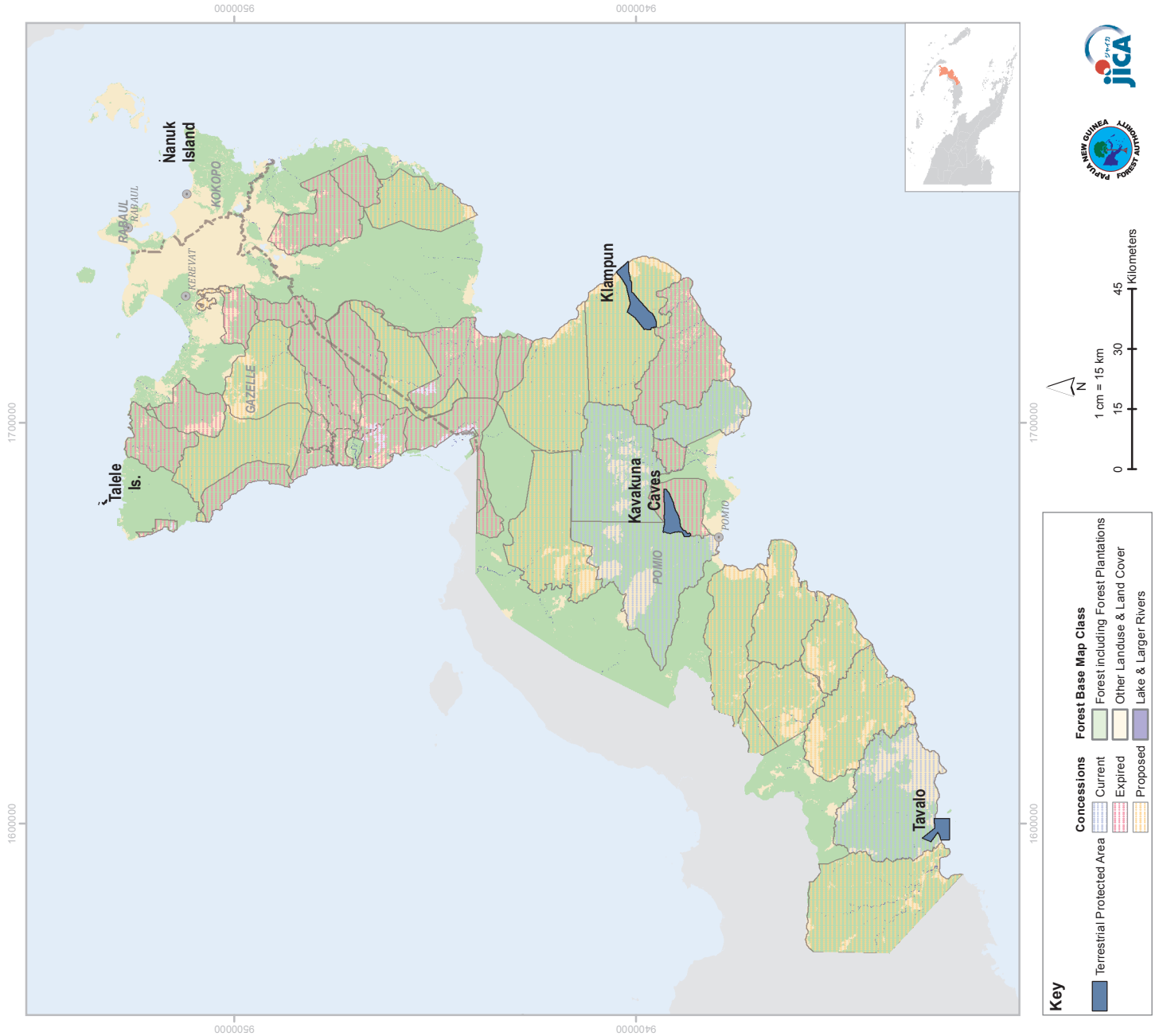
TERRESTRIAL PROTECTED AREAS, EAST NEW BRITAIN PROVINCE

Information on Terrestrial Protected Areas in East New Britain Province

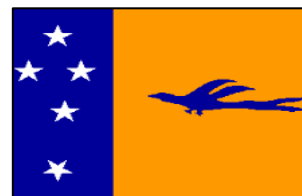
Name	Kavakuna Caves WMA
Protected Area ID	16
Protected Area Type	Wildlife Management Area
Province	East New Britain
Location	Kavakuna Caves
Area (ha)	3220
Longitude	151° 33' 35" E
Latitude	6° 35' 10" S
Name	Klampun
Protected Area ID	15
Protected Area Type	Wildlife Management Area
Province	East New Britain
Location	Klampun
Area (ha)	4,591
Longitude	152° 1' 54" E
Latitude	6° 40' 17" S
Name	Nanuk Island Reserve
Protected Area ID	32
Protected Area Type	Reserve
Province	East New Britain
Location	Nanuk Island
Area (ha)	3
Longitude	152° 19' 38" E
Latitude	5° 43' 52" S
Name	Talele Is. Nat. Park Reserve
Protected Area ID	48
Protected Area Type	National Park / Reserve
Province	East New Britain
Location	Talele Is.
Area (ha)	31
Longitude	151° 34' 22" E
Latitude	5° 50' 30" S
Name	Tavalo WMA
Protected Area ID	49
Protected Area Type	Wildlife Management Area
Province	East New Britain
Location	Tavalo
Area (ha)	2,308
Longitude	150° 52' 38" E
Latitude	7° 58' 40" S

Note:
Two of the protected areas in ENB are islands:

1. Nanuk Island.
=> 3 ha
2. Talele Island
=> 31 ha



16. New Ireland Province



General information/Overview

1. Location

New Ireland Province is located on north-east of mainland of PNG, consisting of small island groups and made up of coastal limestone plains, floodplains and hills.

Provincial Administration Centre: Kavieng

Land area: 939, 696 ha

Population: 194, 067 (2011)

Number of District: 2 (Kavieng, Namatanai)

Number of Local Level Governments (LLGs): 10 LLGs

2. Forest Information

Forest Area: 812, 915 ha

Provincial Tree








The provincial tree is 'Taun'¹² (scientifically known as *Pometia pinnata*) and is commonly found in Low Altitude Forest on Plains and Fans, and Low Altitude Forest on Uplands. The province has two species; (*P. pinnata form pinnata* and *P. pinnata form nov.*).

Significance of Provincial tree:

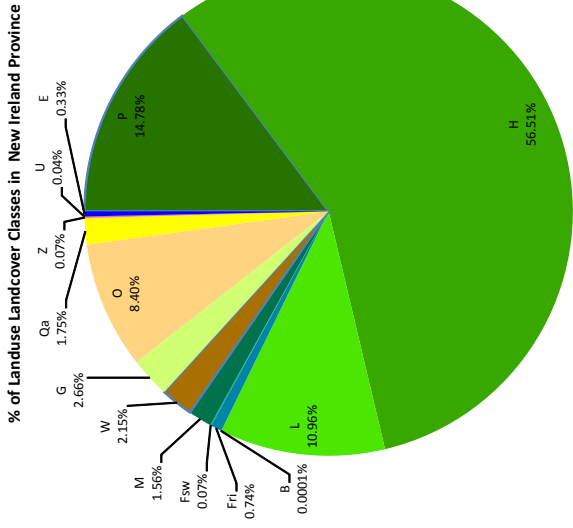
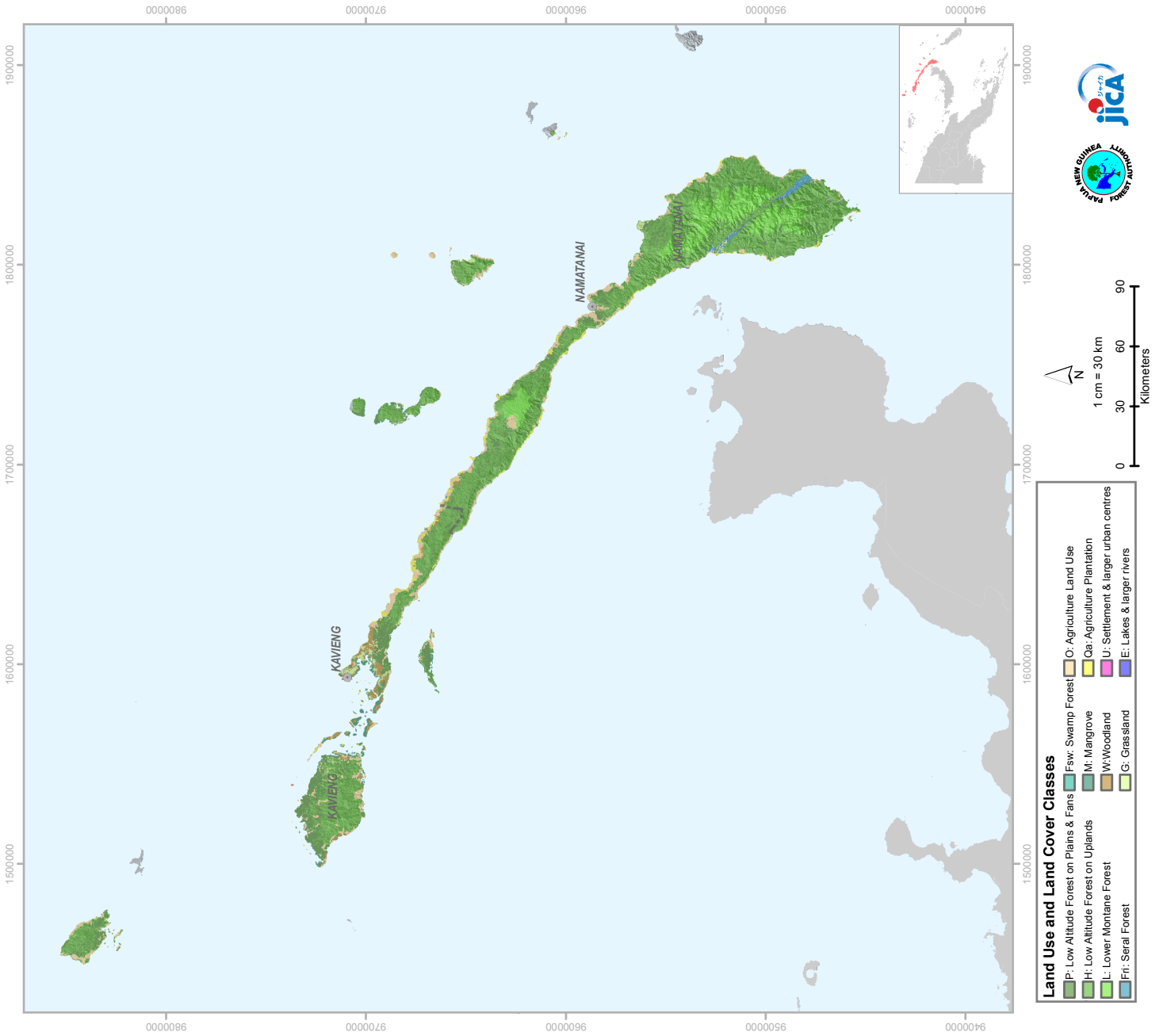
It is a hard wood species which is one of the major commercial species exported in round log form (*P. pinnata form pinnata*) and consumed by the local people as a food source (*P.pinnata form nov.*).

Taun is a valuable and high demand species in terms of economical and as well social aspects. The fruits are edible when ripe and the seeds are soaked in brine and cooked in mumu pits. The leaves are used in preparation of mumu to give flavor to the food. As well the leaves are used for wrapping up bananas and covering it with the bark to allow the fruit to ripen. Tree bark is used as herbal remedy for treatment of dysentery (diarrhea) and treated bark is mixed with coconut to produce oil for ceremonies (traditional dancing), feasts, etc.

¹² In PNG there are five different forms of Taun (*Pometia pinnata form pinnata*, *P.pinnata form glabra*, *P. pinnata form tomentose*, *P. pinnata form repanda* and *P.pinnata form nov.-new form*). The presumed new form *P. pinnata form nov* to is found in the New Guinea Islands which is the edible one.

Scientific name: <i>Pometia pinnata</i>	Family: <i>Sapindaceae</i>	Common Name/Trade name: <i>Taun</i>
<p><u>Description</u> Taun is a large canopy tree with cylindrical, straight bole (trunk) sometimes twisted and fluted and has a buttress. Outer bark is reddish brown, slightly rough/smooth and scaly or flaky. Inner bark pale brown or pinkish and non-aromatic. Exudate colourless and not sticky. Leaf; compound (two or more leaflets), upper surface of leaf is dark green and underneath is pale green. Flower: Juvenile leaves reddish, small yellowish on branched axis. Fruit: round/oblong, green when immatures and turns red when it matures; Fruit is single seeded; seed is encompassed by thin fleshy aril. Other varieties edible.</p>		
Tree	Bark	Leaf/Leaves
 <p>Source: L Thomson & R Thaman, "Species Profiles for Pacific Island Agroforestry": <i>Pometia pinnata</i> (2006)</p>	 	 <p>Source: https://www.loupiote.com/photos/6626464019.shtml?s=72157628694663763</p> 
<p>Note: Short description was from the PNG Plant database website and few of the photos (link below) http://www.pngplants.org/PNGtrees/TreeDescriptions Photo source (Bark, leaves and flowers): KDamas , Senior Botanist, FRI, Lae, Morobe Province</p>	Flower	Fruit/Seed
		 <p>Source: http://www.fiapng.com/Nursery_techniques.pdf</p>

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

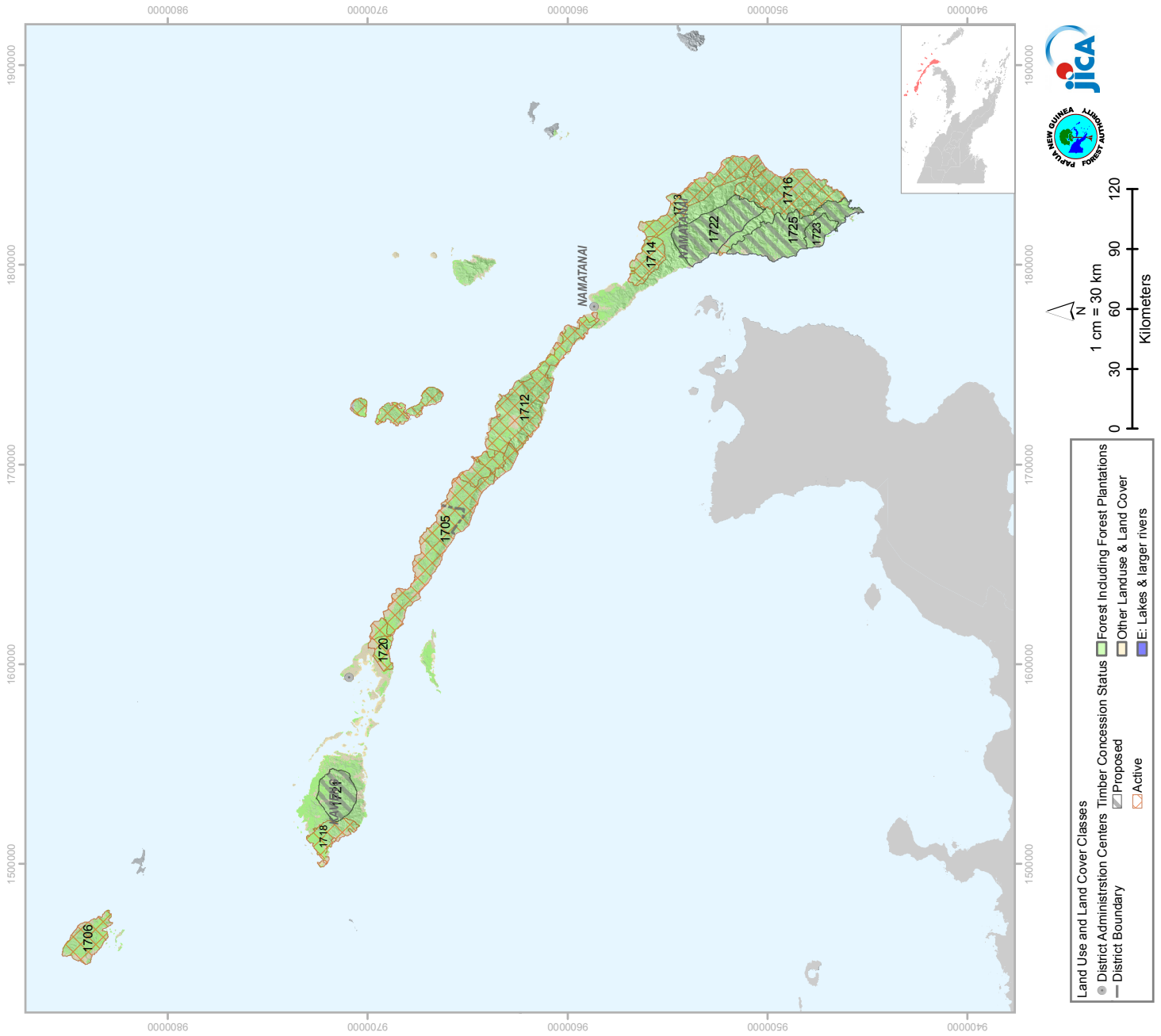


Pie Chart showing percentage in Landuse, Landcover of Manus Province.

% of Landuse Landcover	
Code	Namatani
P	16.31%
H	62.36%
L	1.71%
Fri	0.81%
Fsw	0.08%
M	1.71%
W	2.37%
G	3.06%
O	9.25%
Qa	1.93%
U	0.04%
E	0.36%
Land Area (ha)	851,482.20
	636,851.80

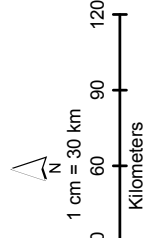
Table showing percentage in Landuse, Landcover of New Ireland Province Districts. Percentage calculated from area in hectares.

TIMBER CONCESSION MAP OF NEW IRELAND PROVINCE



Land Use and Land Cover Classes

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

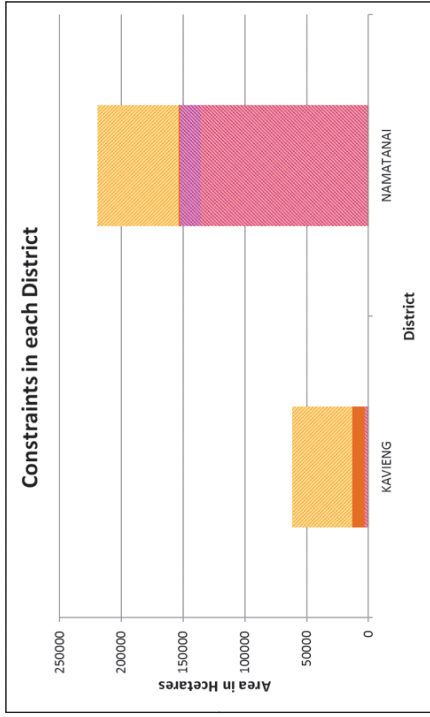


PLAN_ID	NAME	AREA (ha)	CONCESSION TYPE	STATUS
1706	Mussau Island	33,903.66	TRP	Concession
1715	Lenai	2,330.08	TRP	Concession
1713	Danfu	56,575.05	TRP	Concession
1714	Danfu Ext	25,065.82	TRP	Concession
1719	Uganai	8,471.52	LFA	Concession
1705	Nakmai	109,482.81	LFA	Concession
1720	West Kaut	13,435.63	TRP	Concession
1718	Umbukul	25,761.15	TRP	Concession
1701	Kaut	6,700.26	TRP	Concession
1712	Central New Ireland	99,062.32	TRP	Concession
1716	Lak	81,408.72	TRP	Concession
1708	Konos	10,813.30	TRP	Concession
1723	Lamassa	16,309.36	Proposed	Proposed
1721	Central New Hanover	36,956.26	Proposed	Proposed
1702	Kamdaru	1,856.78	TRP	Concession
1722	Kamdaru Huru	72,973.57	Proposed	Proposed
1725	Lak-Kandas	72,592.61	Proposed	Proposed
1724	Tarbar	28,969.66	LFA	Concession

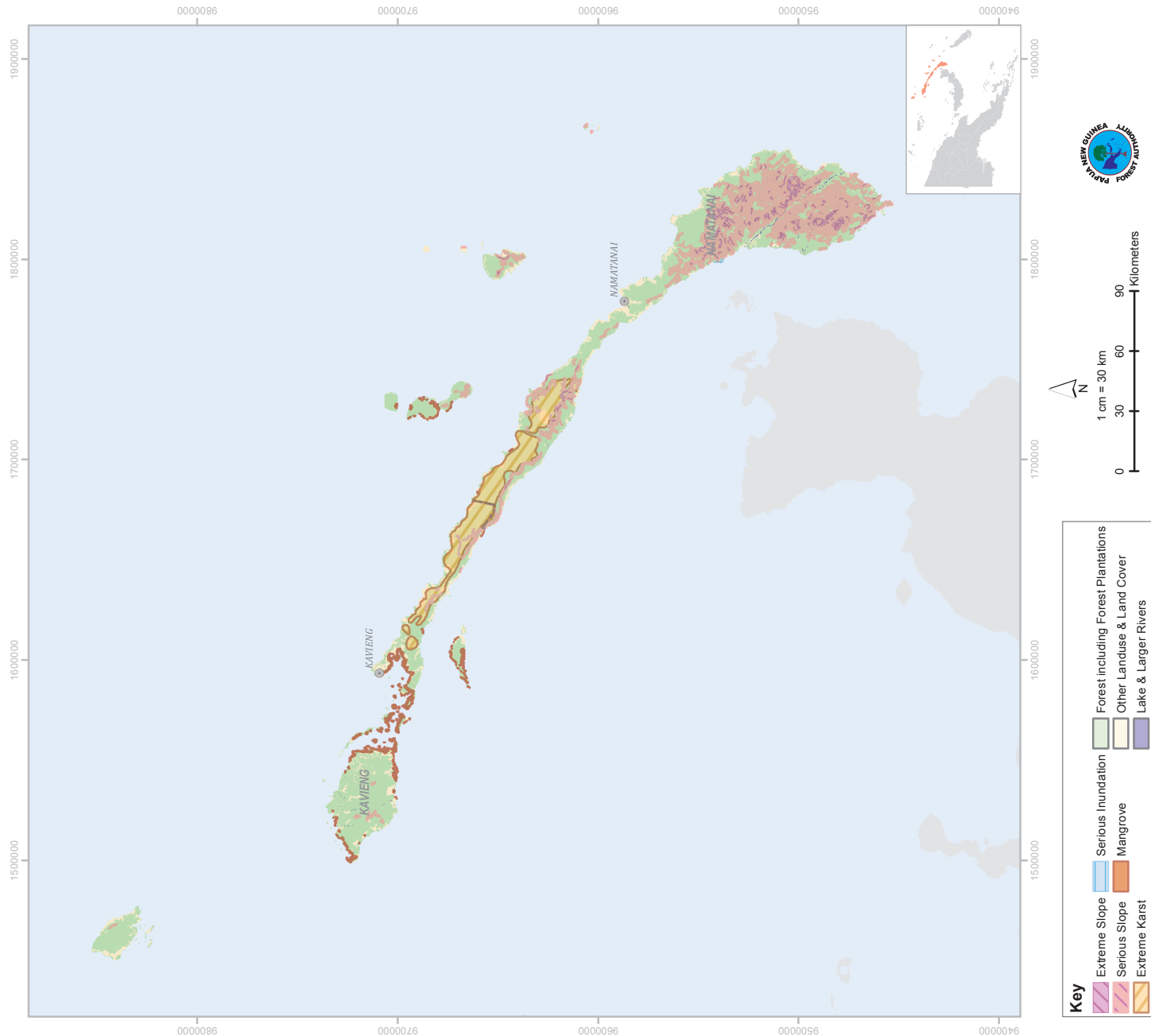
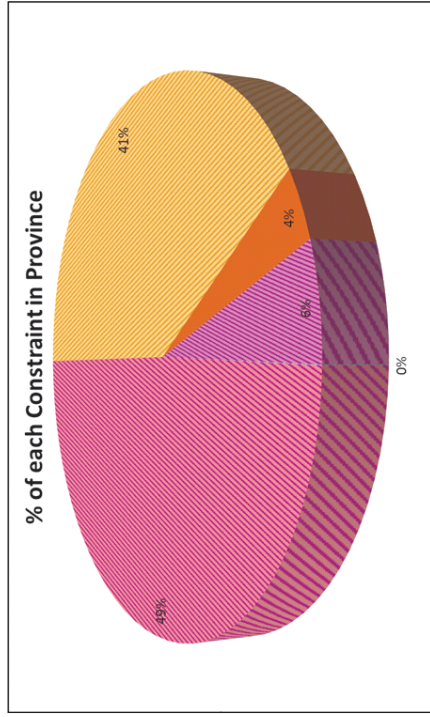
Table showing Timber Concessions of New Ireland Province.
Information updated as at 2016.

CONSTRAINTS TO COMMERCIAL TIMBER PRODUCTION, NEW IRELAND PROVINCE

Brief Report on Logging Constraints of New Ireland Province



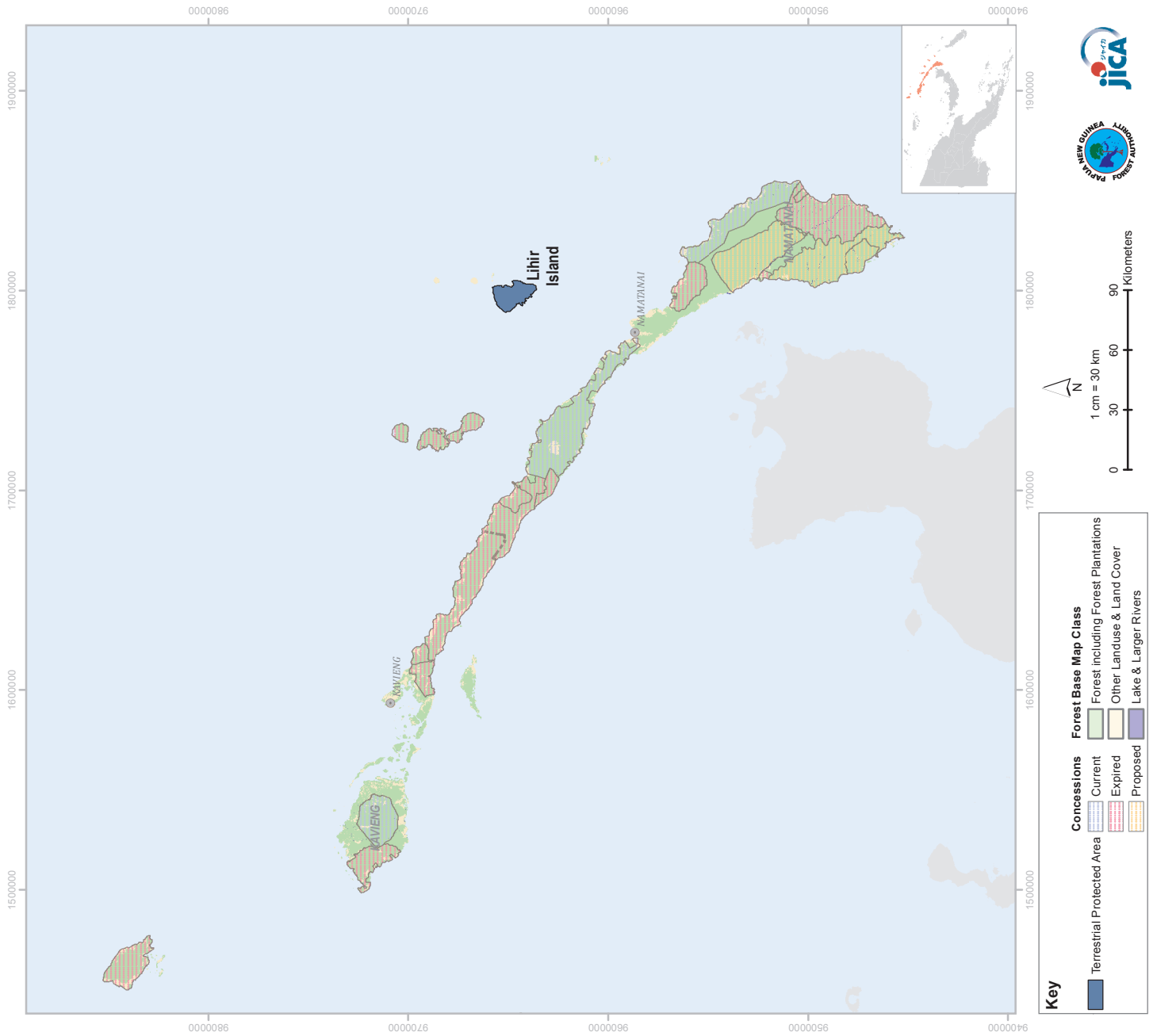
New Ireland province has two (2) main constraints to commercial timber production; 'Serious Slope' and 'Extreme Karst'; both combined make up 90% of all constraints found in the province. 'Serious Slope' is the predominate constraint in the province as it constitutes to 49%. The majority of 'Serious Slope' is situated chiefly in the southern end of Namatanai. The second largest constraint is 'Extreme Karst', which is mainly situated along the border between Kavieng and Namatanai and constitutes to 41%.



TERRESTRIAL PROTECTED AREAS, NEW IRELAND PROVINCE

Information on Terrestrial Protected Areas in New Ireland Province

Name	Lihir Island
Protected Area ID	21
Protected Area Type	Wildlife Management Area
Province	New Ireland
Location	Lihir Island
Area (ha)	20, 208
Longitude	152° 35' 51.1" E
Latitude	4° 52' 45" S



17. Autonomous Region of Bougainville



General information/Overview

1. Location

Autonomous Region of Bougainville is far east of mainland of PNG and dominated by volcanic peaks, limestone plains, volcanic plains and fans, valleys, floodplains and swamps.

Provincial Administration Centre: Buka

Land area: 937,460 ha

Population: 249,358 (2011)

Number of District: 3 (Central Bougainville, North Bougainville,
South Bougainville)

Number of Local Level Governments (LLGs): 12 LLGs

2. Forest Information






Forest Area: 388,913 ha

Provincial Tree

The provincial tree is '*Breadfruit*' (scientifically known as *Artocarpus altilis*) and is commonly found in Low Altitude Forest on Plains and Fans.

Significance of Provincial tree:

It is a hardwood but non-timber species and mostly cultivated near homes mainly for the consumption of the fruit and seeds when in season. As well the fruit and seeds are sold in local markets; a source of income.

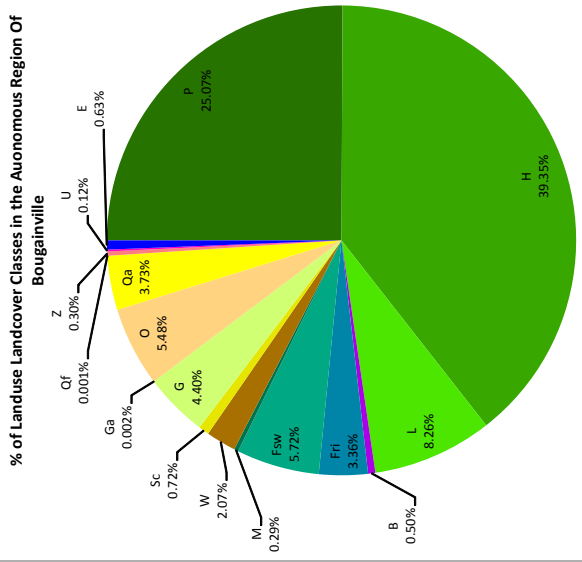
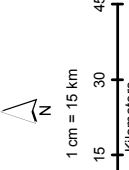
<p>Scientific name: <i>Canarium indicum</i> <i>Artocarpus altilis</i></p>	<p>Family: <i>Burseraceae</i> <i>Moraceae</i></p>	<p>Common Name/Trade name: <i>Galip</i> <i>Breadfruit</i></p>
<p>Description</p> <p>Galip is a large canopy to sub-canopy tree, straight bole and has a solid buttress. Outer bark is grey or brown and rough. Inner bark blaze pale yellow and bark exudate: white/milky flowing sap. Leaves: clustered at the end of branches, simple (a leaf composed of single leaf blade, upper surface dark green and beneath is green. Flowers: male and female flowers on the same plant. Fruit; green, fleshy and is about 100-500 mm in length with a width of 30-40mm (size). Seeds: contains about 20-60 seeds covered in brown seed coat.</p>		
<p>Tree</p>	<p>Bark</p>	<p>Leaf/Leaves</p>
		
<p>Note:</p> <p>Short description was from the PNG Plant database website.</p> <p>http://www.pngplants.org/PNGtrees/TreeDescriptions/Artocarpus_aitilis_Parkinson_Fosberg.html</p> <p>Photo source (tree, bark, leaves, flower, fruit and seed):</p> <p>http://tropical.theferns.info/image.php?id=Artocarpus+aitilis#plantimages/e/e/eeaf79d02d560abfd6d247111e55621a5d113c1e.jpg</p>	<p>Flower</p>  <p>Developing male flower (left of centre) with female flower above</p>	<p>Fruit/Seed</p> 

VEGETATION AND LAND COVER MAP OF AUTONOMOUS REGION OF BOUGAINVILLE (2012 FOREST BASEMAP VERSION 1.1)



Land Use and Land Cover Classes

P: Low Altitude Forest on Plains & Fans	Fri: Serai Forest	Sc: Scrub	Qa: Agriculture Plantation
H: Low Altitude Forest on Uplands	Fsw: Swamp Forest	G: Grassland	Z: Bare areas
L: Lower Montane Forest	M: Mangrove	Ga: Alpine grassland	U: Settlement & larger urban centres
B: Littoral Forest	W: Woodland	O: Agriculture Land Use	E: Lakes & larger rivers

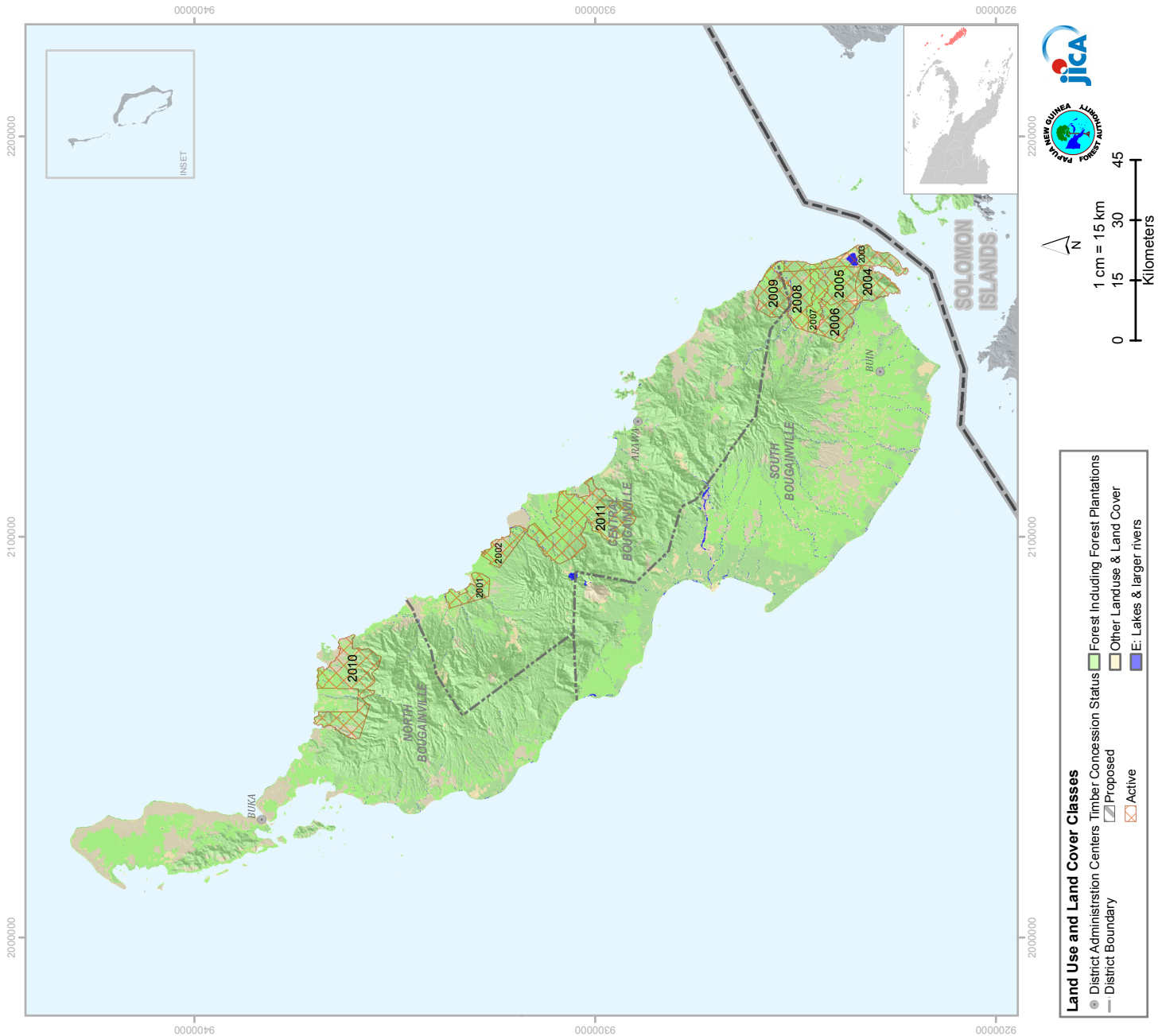


Pie Chart showing percentage in Landuse, Landcover of the Autonomous Region of Bougainville

Code	% of Landuse Lancover		
	Central Bougainville	North Bougainville	South Bougainville
P	10.89%	20.68%	40.09%
H	59.63%	40.75%	21.92%
L	11.65%	12.08%	2.73%
B	0.16%	0.04%	0.88%
Fri	4.19%	4.22%	2.07%
Fsw	3.00%	1.54%	11.10%
M		0.83%	0.01%
W	0.21%	0.28%	4.94%
Sc	0.28%	2.17%	0.01%
G	2.85%	3.53%	6.23%
Ga	0.01%		
O	2.83%	5.20%	7.93%
Qa	3.74%	8.37%	0.28%
Z	0.07%		0.71%
U	0.07%	0.10%	0.02%
E	0.42%	0.20%	1.08%
Land Area (ha)	299,153.39	271,346.51	360,322.15

Table showing percentage in Landuse, Landcover of Districts in the Autonomous Region of Bougainville. Percentage calculated from area in hectares.

TIMBER CONCESSION MAP OF AUTONOMOUS REGION OF BOUGAINVILLE

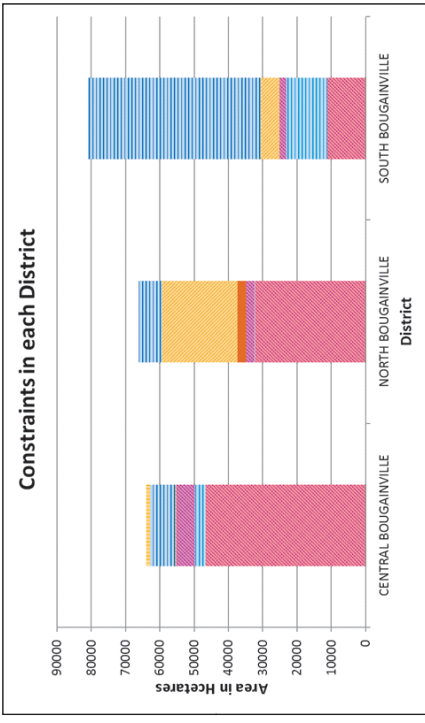


PLAN_ID	NAME	AREA (ha)	CONCESSION TYPE	STATUS
2006	Tonolei block 4	6,869.89	TRP	Concession
2005	Tonolei block 3	7,256.59	TRP	Concession
2004	Tonolei block 2	6,032.81	TRP	Concession
2002	Numanuma	4,735.06	TRP	Concession
2001	Wakunai	4,551.86	TRP	Concession
2011	Manetai	24,402.36	TRP	Concession
2010	Tinputz	19,688.71	TRP	Concession
2009	Tonolei block 7	7,828.52	TRP	Concession
2003	Tonolei block 1	8,781.94	TRP	Concession
2008	Tonolei block 6	7,681.89	TRP	Concession
2007	Tonolei block 5	4,195.61	TRP	Concession

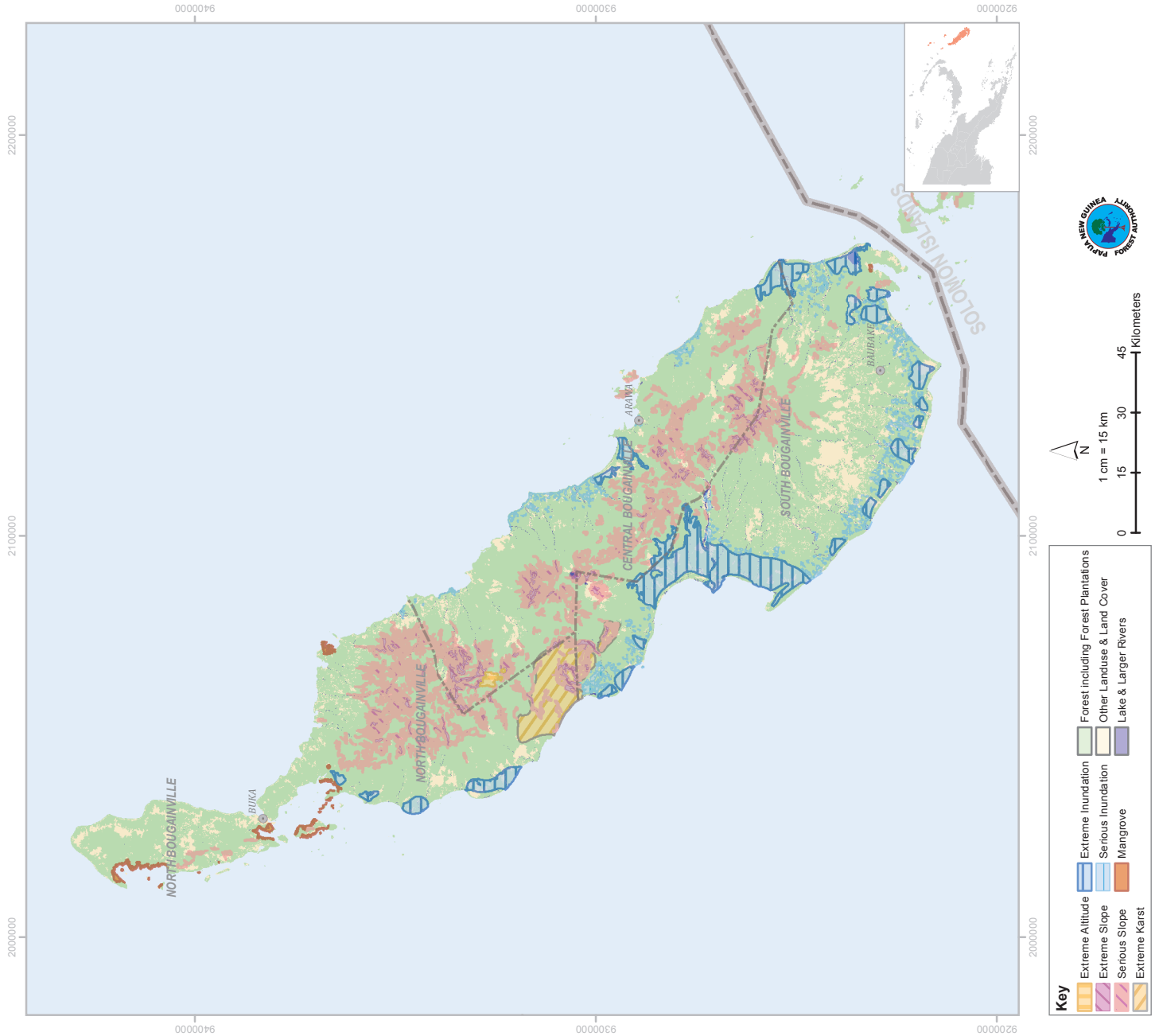
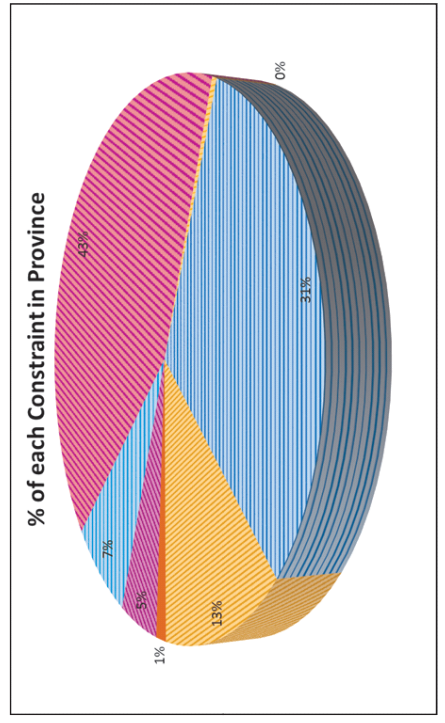
Table showing Timber Concessions of the Autonomous Region of Bougainville. Information updated as at 2016.

CONSTRAINTS TO COMMERCIAL TIMBER PRODUCTION, AUTONOMOUS REGION OF BOUGAINVILLE

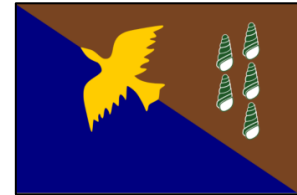
Brief Report on Logging Constraints of Bougainville Autonomous Region of Bougainville



'Extreme Inundation' can be found predominantly along the southern coast of Bougainville and accounts for the second largest percentage of constraints to commercial timber production within the province. The chief constraint throughout the province is 'Serious Slope', which accounts for 43% of the entirety of constraints found in the province. The majority of 'serious slope' can be found primarily in Central Bougainville, in particular, along the shared borders of Central Bougainville and North and South Bougainville.



18. Manus Province



General information/Overview

1. Location

Manus Province is the smallest province both in land and population. It is far north of mainland of PNG, dominated by hills and mountain peaks, coastal areas of limestone plains, swamps and floodplains.

Provincial Administration Centre: Lorengau

Land area: 193, 077 ha

Population: 60, 485 (2011)

Number of District: 1 (Lorengau)

Number of Local Level Governments (LLGs): 12 LLGs

2. Forest Information







Forest Area: 171, 117 ha

Provincial Tree

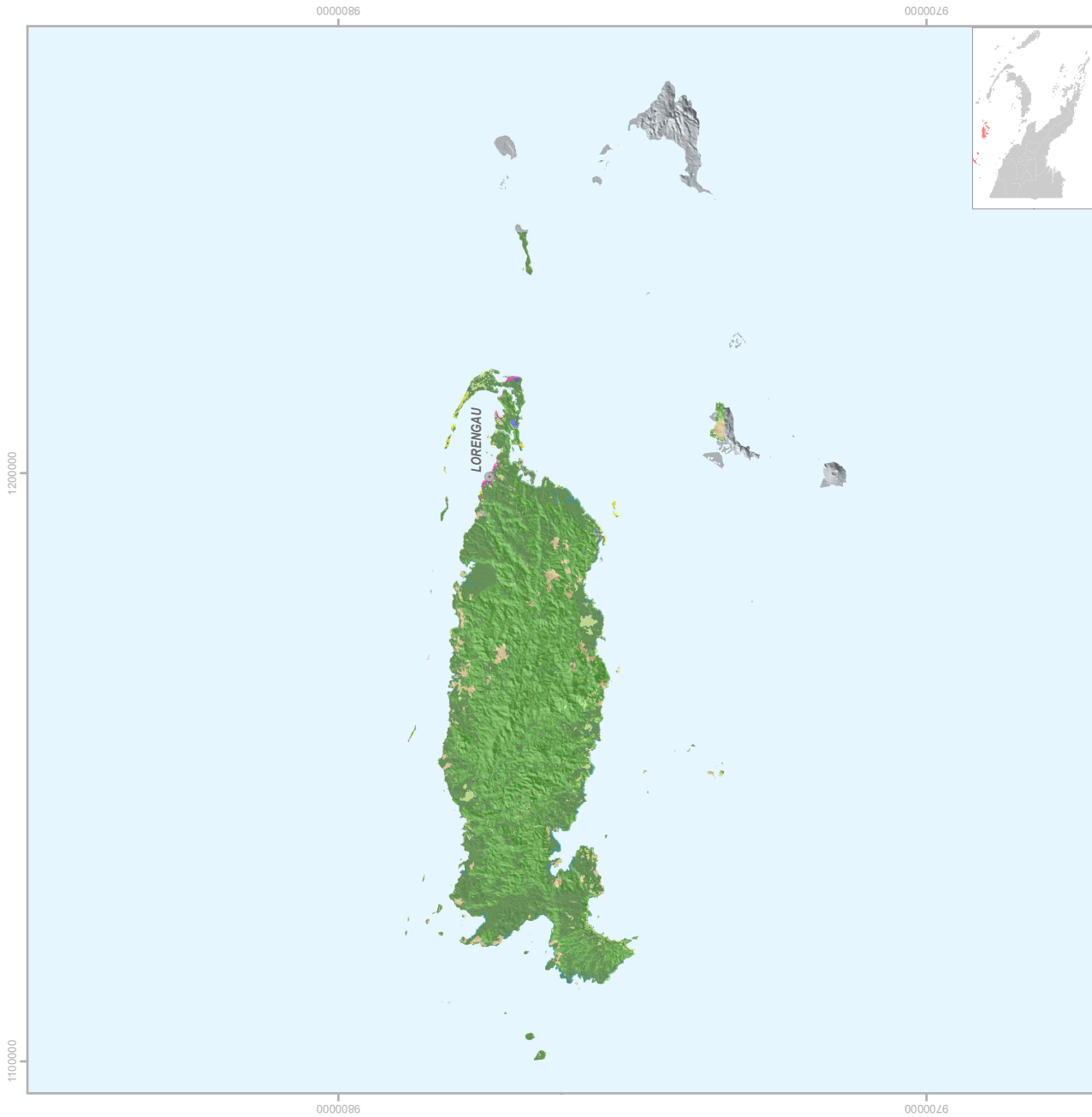
The provincial tree is '*Calophyllum*' (scientifically known as *Calophyllum soulattri*) and is commonly found in Low Altitude Forest on Uplands.

Significance of Provincial tree:

Calophyllum is the dominant tree species in the province and accounts for over 98 % of round log exports. It is a hard wood species and is one of the major commercial species exported in round log form. The local people commonly use the tree for timber in the construction of houses, bridges and various uses. As well carving of wooden bowls, paddles, handles for axes and tools for beating the sago.

Scientific Name: <i>Calophyllum soulattri</i>	Family: <i>Calophyllaceae</i>	Common name/Trade Name: <i>Calophyllum</i>
<p>Description</p> <p>A large to sub canopy tree with straight cylindrical bole (trunk). Outer bark is yellow or brown, rough or smooth (when immature), scaly or flaky. Inner bark is (blaze) pink and slightly fibrous and non- aromatic. White Exudate: sticky, white / milky or yellowish and changes colour to yellowish brown when exposed to air. Leaf is simple, opposite, upper surface and lower surface is pale green. Flowers: white. Fruit: small dark green when immature and turns blue, black when it matures (ripens).</p>		
Tree	Bark	Leaf/Leaves
 <p>Source: https://florafaunaweb.nparks.gov.sg/special-pages/plant-detail.aspx?id=2776 </p>	<p>Outer bark</p>  <p>Source: http://www.pngplants.org/PNGtrees/TreeDescriptions/Calophyllum_soulattri_Burm_f.html </p> <p>Inner bark</p>  <p>Photo source: KDamas, Senior Botanist, FRI, Lae, Morobe Province</p>	 <p>Photo source: KDamas, Senior Botanist, FRI, Lae, Morobe Province</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>	<p>Flower</p>  <p>Source: https://florafaunaweb.nparks.gov.sg/special-pages/plant-detail.aspx?id=2776 </p>	<p>Fruit/Seed</p>  <p>Source: http://tropical.theferns.info/viewtropical.php?id=Calophyllum+soulattri </p>

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



Land Use and Land Cover Classes

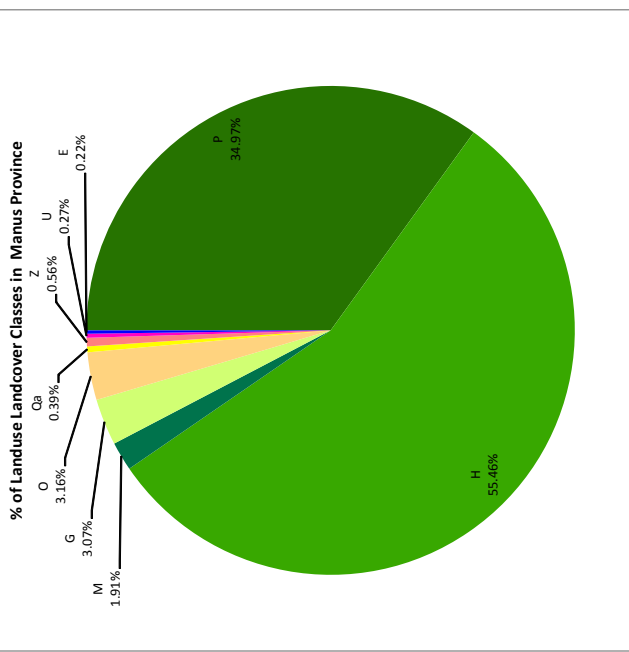
- P: Low Altitude Forest on Plains & Fans
- H: Low Altitude Forest on Uplands
- M: Mangrove
- G: Grassland
- O: Agriculture Land Use
- Qa: Agriculture Plantation
- Z: Bare areas
- U: Settlement & larger urban centres
- E: Lakes & larger rivers

1200000
1100000

0 11 22 33 Kilometers

1 cm = 11 km

N

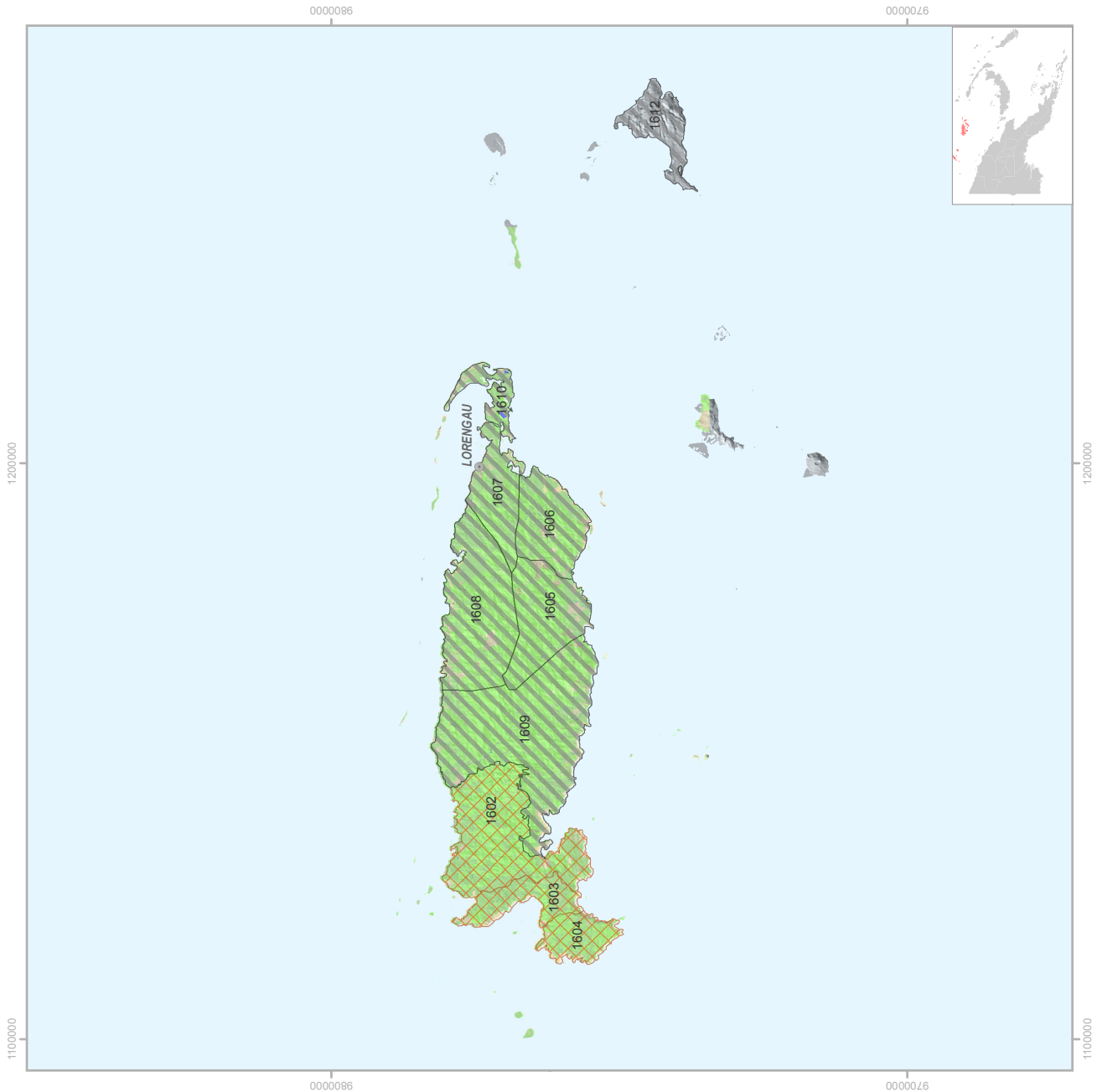


Pie Chart showing percentage in Landuse, Landcover of Manus Province.

Code	Manus
P	34.97%
H	55.46%
L	0.00%
Mo	0.00%
D	0.00%
B	0.00%
Fri	0.00%
Fsw	0.00%
M	1.91%
W	0.00%
Sa	0.00%
Sc	0.00%
G	3.07%
Ga	0.00%
Gi	0.00%
O	3.16%
Qa	0.39%
Qf	0.00%
Z	0.56%
U	0.27%
E	0.22%
Land Area (ha)	193,143.99

Table showing percentage in Landuse, Landcover of districts in Manus Province. Percentage calculated from area in hectares.

TIMBER CONCESSION MAP OF MANUS PROVINCE





REPUBLIC OF INDONESIA
PAPUA NEW GUINEA



1 cm = 11 km

0 11 22 33 Kilometers

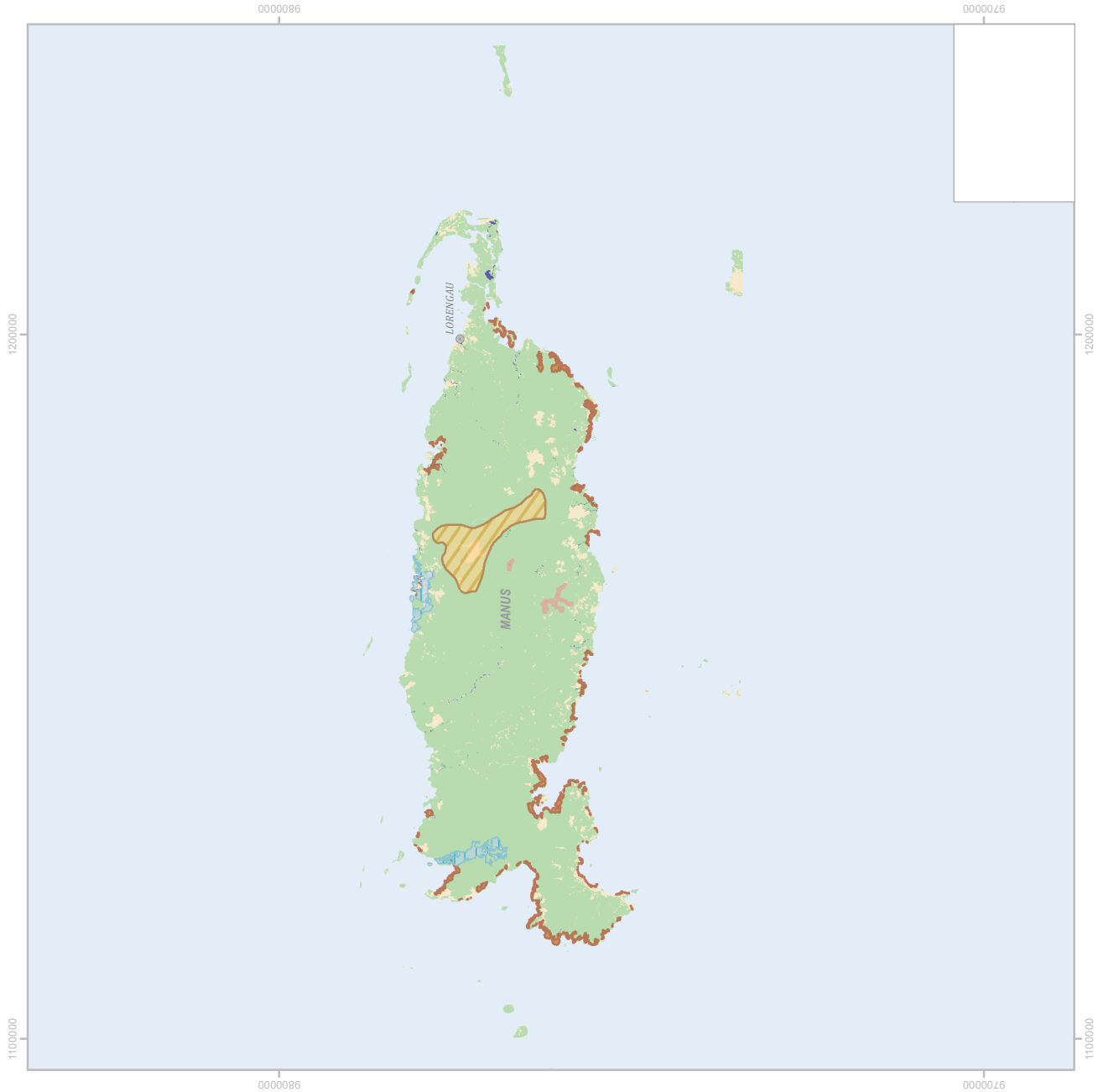
Land Use and Land Cover Classes

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

PLAN_ID	NAME	AREA (ha)	CONCESSION TYPE	STATUS
1602	Manus West Coast	32,296.15	TRP	Concession
1603	Jaha	10,068.86	LFA	Concession
1604	Kali Bay	8,713.70	LFA	Concession
1609	BLOCK 7	51,545.67		Proposed
1608	BLOCK 6	30,926.96		Proposed
1607	BLOCK 5	13,070.44		Proposed
1606	BLOCK 4	16,409.85		Proposed
1605	BLOCK 3	19,999.22		Proposed
1610	Los Negros Island	5,482.25		Proposed
1612	Rambutyo Island	9,735.34		Proposed

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

CONSTRAINTS TO COMMERCIAL TIMBER PRODUCTION, MANUS PROVINCE



Key

- Serious Slope
- Serious Inundation
- Mangrove
- Forest including Forest Plantations
- Extreme Karst
- Other Landuse & Land Cover
- Lake & Larger Rivers

1 cm = 9 km

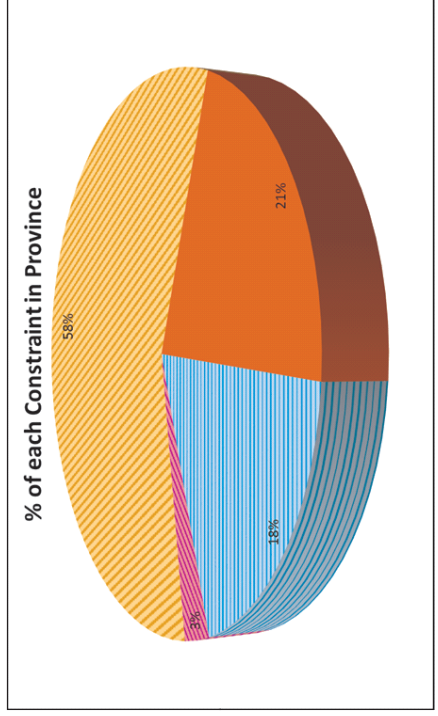
0 9 18 27 Kilometers

Brief Report on Logging Constraints of Manus Province

Constraint	Area (Ha)
Extreme Karst	7880
Mangrove	2828
Serious Inundation	2463
Serious Slope	374

The dominant constraint in the province is 'Extreme Karst', it is situated primarily in the centre of the province and constitutes to about 58% of all constraints. The province is abundantly surrounded by Mangroves; most cases, these mangroves exist naturally, however, in more recent times, as a countermeasure to face the threat of coastal flooding, some areas along the southern coast of the province have undergone mangrove seedling plantation projects, for this reason, 'Mangroves' is the second largest constraint to commercial timber production in the province, as it constitutes to 21%.

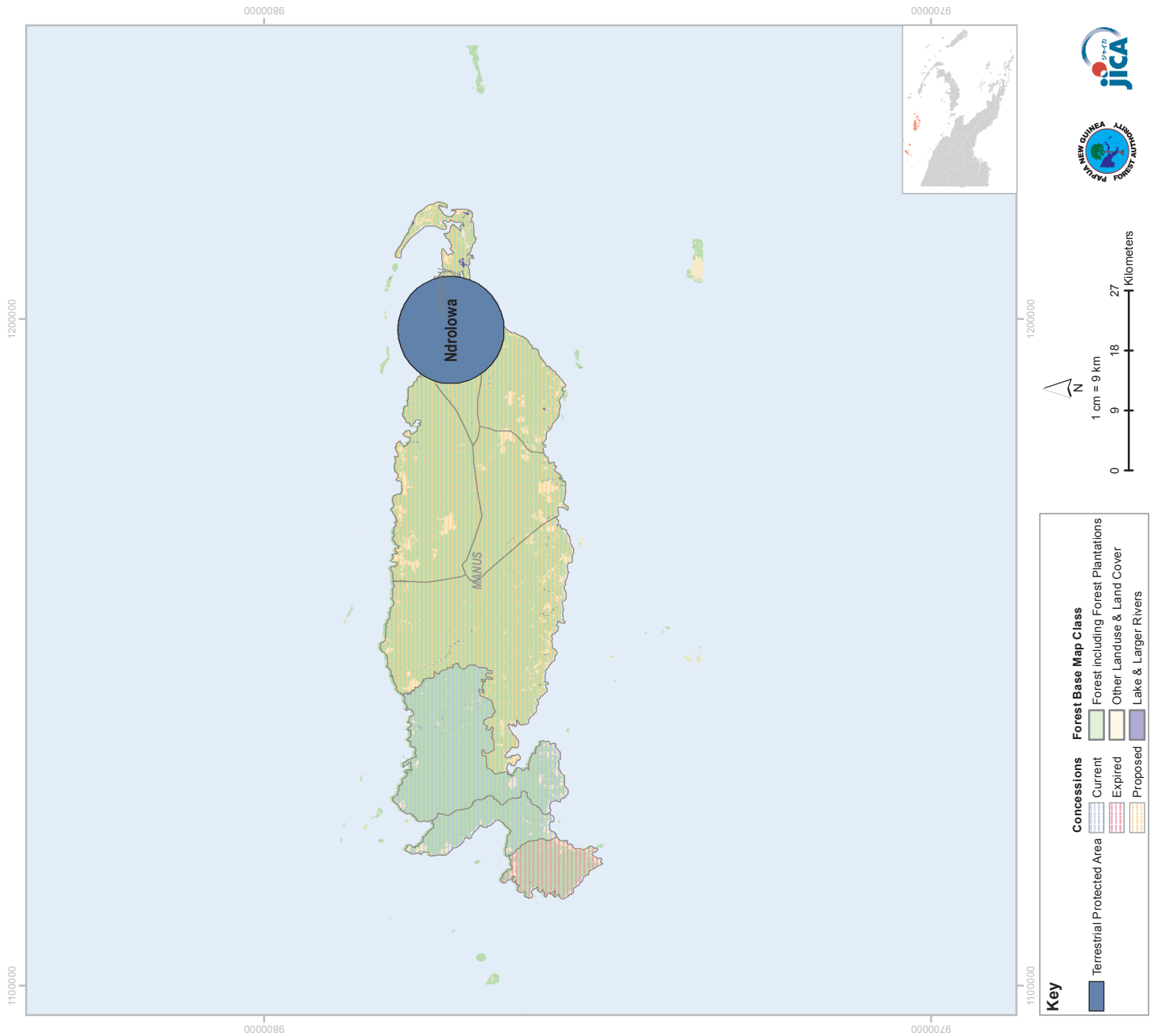
Source (<https://png.wcs.org/initiatives/mangrove-rehabilitation-and-protection.aspx>)



TERRESTRIAL PROTECTED AREAS, MANUS PROVINCE

Information on Terrestrial Protected Areas in Manus Province

Name	Ndrolowa WMA
Protected Area ID	33
Protected Area Type	Wildlife Management Area
Province	Manus
Location	Ndrolowa
Area (ha)	19, 887
Longitude	147° 16' 0" E
Latitude	3° 57' 0" S



19. Enga Province



General information/Overview

1. Location

Enga Province is located in the highlands of PNG and consists of mountain ranges, valleys and large swamp areas. The Lagaip River links into the Fly River and Coral Sea of Western Province and Lai River into the Sepik River of East Sepik province and the Bismarck Sea.

Provincial Administration Centre: Wabag

Land area: 1, 173, 438 ha

Population: 432, 045 (2011)

Number of District: 5 (Kandep, Kompiam, Lagaip-Porgera,
Wapenamanda, Wabag)

Number of Local Level Governments (LLGs): 14 LLGs

2. Forest Information




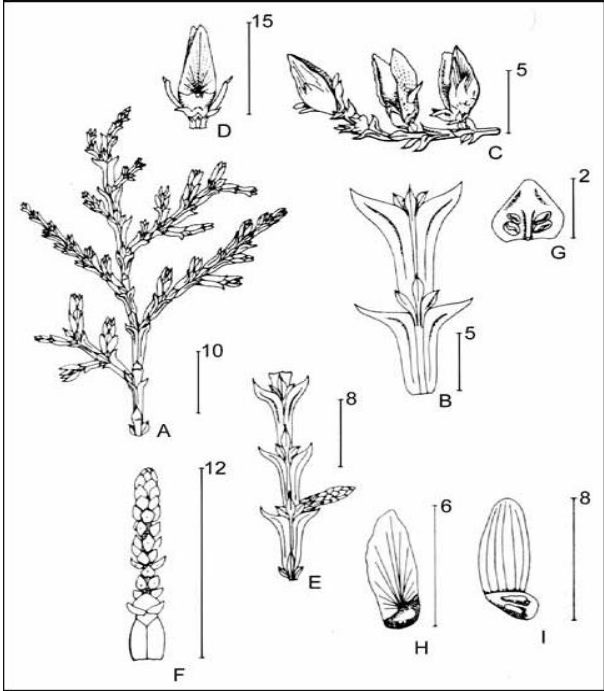
Forest Area: 640, 090 ha

Provincial Tree

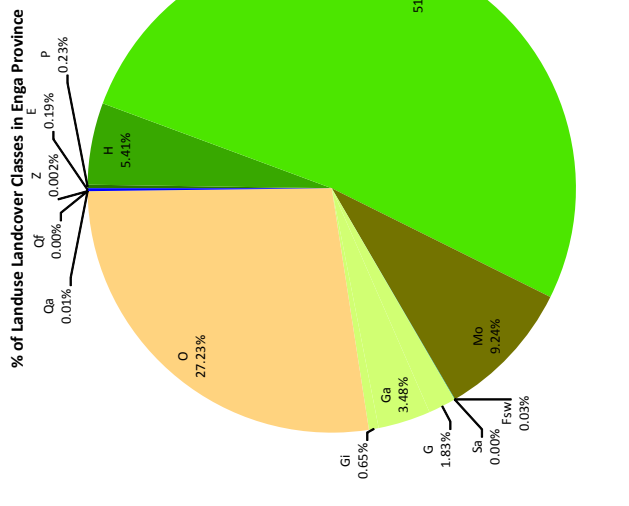
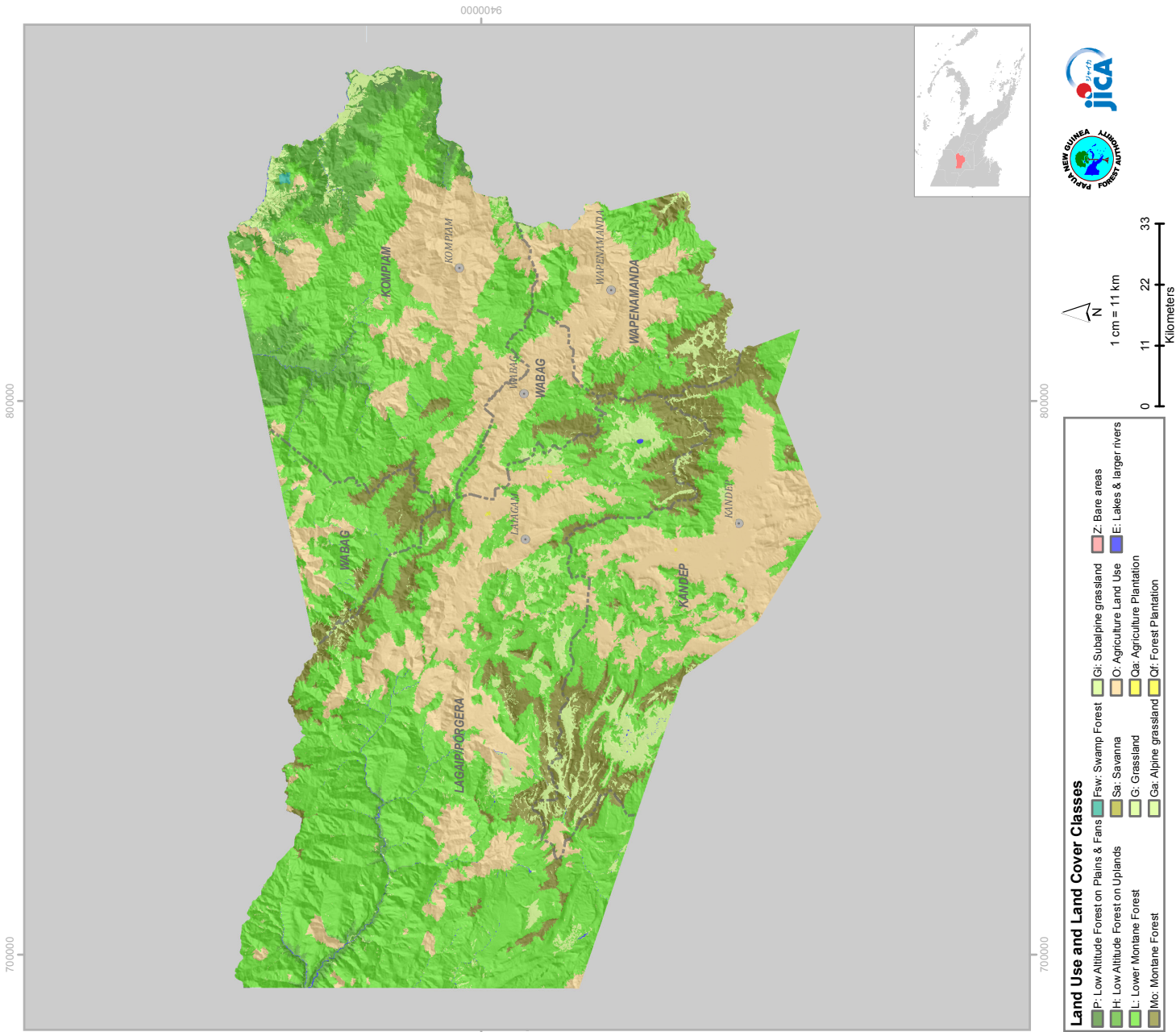
The provincial tree is '*Papuacedrus*' (scientifically known as *Papuacedrus papuana* formerly known as *Librocedrus papuanus*) and is commonly found in Lower Montane forest and Montane forest.

Significance of Provincial tree:

It is one of the soft wood species and is an important tree to the people of Enga because of its various cultural and other uses for instance, timber for homes, furniture, fences, etc. The leaves are used as decorations in special occasions such as cultural dances or other traditional ceremonies and as well the leaves are burnt to repel insects, the bark of the tree is prepared and used as flooring for homes. It is commonly grown as ornaments around homes of many rural communities.

<p>Scientific name: <i>Papuacedrus papuana</i></p>	<p>Family: <i>Cupressaceae</i></p>	<p>Common Name/Trade name: <i>Papuacedrus</i></p>
<p>Description A large to sub-canopy tree with straight cylindrical bole. Outer bark is grey or brown to black, texture is rough, fissured to peeling. Inner bark white, pink or pale brown, fibrous and has sticky pale brown exudate. Leaves (modified – non true leaves) clustered, opposite, simple, upper surface dull green and under surface blue-green or dull green. Flowers: male and female flowers on different plants, small green. Fruit/Seed- reddish brown or bluish green containing 1- 2 seeds.</p>		
<p>Tree</p>	<p>Bark</p>	<p>Leaf/Leaves</p>
	 <p>Source: http://www.pngplants.org/PNGtrees/Tree/Descriptions/Papuacedrus_papuana_F_Mueller_Li_var_papua.html</p>	 <p>Source: https://pngng.com/media/PNG-LNG-Media/Files/Environment/Identification-Guide-to-Flora-and-Fauna-of-Hides-Ridge_FINAL.pdf</p>
<p>Note:</p> <p>Short description was from the PNG Plant database website (link below)</p> <p>http://www.pngplants.org/PNGtrees/Tree/Descriptions/Papuacedrus_papuana_F_Mueller_Li_var_papua.html</p> <p>Flower, fruit/seed "Papuacedrus papuana (F. Mueller) Li. A- B. part of branchlet, C. part of branchlet with fruit, D. fruit, E. part of branchlet with male cone, F. male cone, G. microsporophyll, H-I. seeds." (van Royen 1979</p> <p>Source: https://www.conifers.org/cu/Papuacedrus.php</p>	<p>Flower</p> <p>Fruit/Seed</p> 	

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

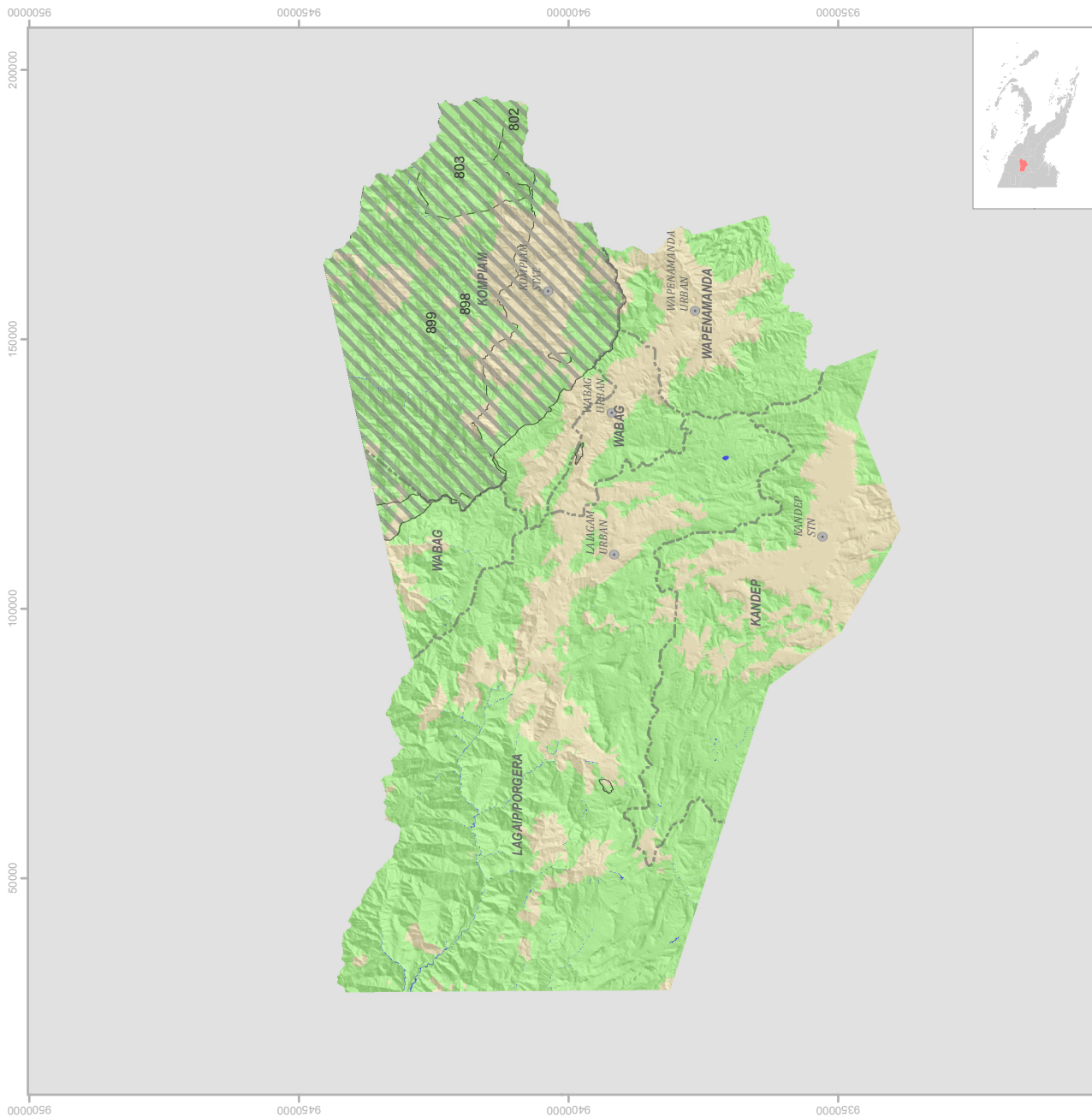


Pie Chart showing percentage in Landuse, Landcover of Enga Province.

Code	% of Landuse Lancrover		
	Kandeep	Lagailp Pogera	Wabag Wapenamanda
P		0.02%	
H		1.68%	0.05%
L	34.48%	71.22%	52.85%
Mo	16.37%	10.02%	14.09%
Fsw	0.01%		
G	0.41%	1.35%	0.97%
Ga	7.87%	4.71%	1.37%
Gi	1.60%	0.63%	0.51%
O	39.20%	10.02%	30.01%
Qa		0.03%	
Qf	0.01%		
Z			0.02%
E	0.05%	0.32%	0.14%
Land Area (ha)	201,994.16	433,750.92	94,852.04
			101,647.87

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

TIMBER CONCESSION MAP OF ENGA PROVINCE



Key

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

1 cm = 10 km

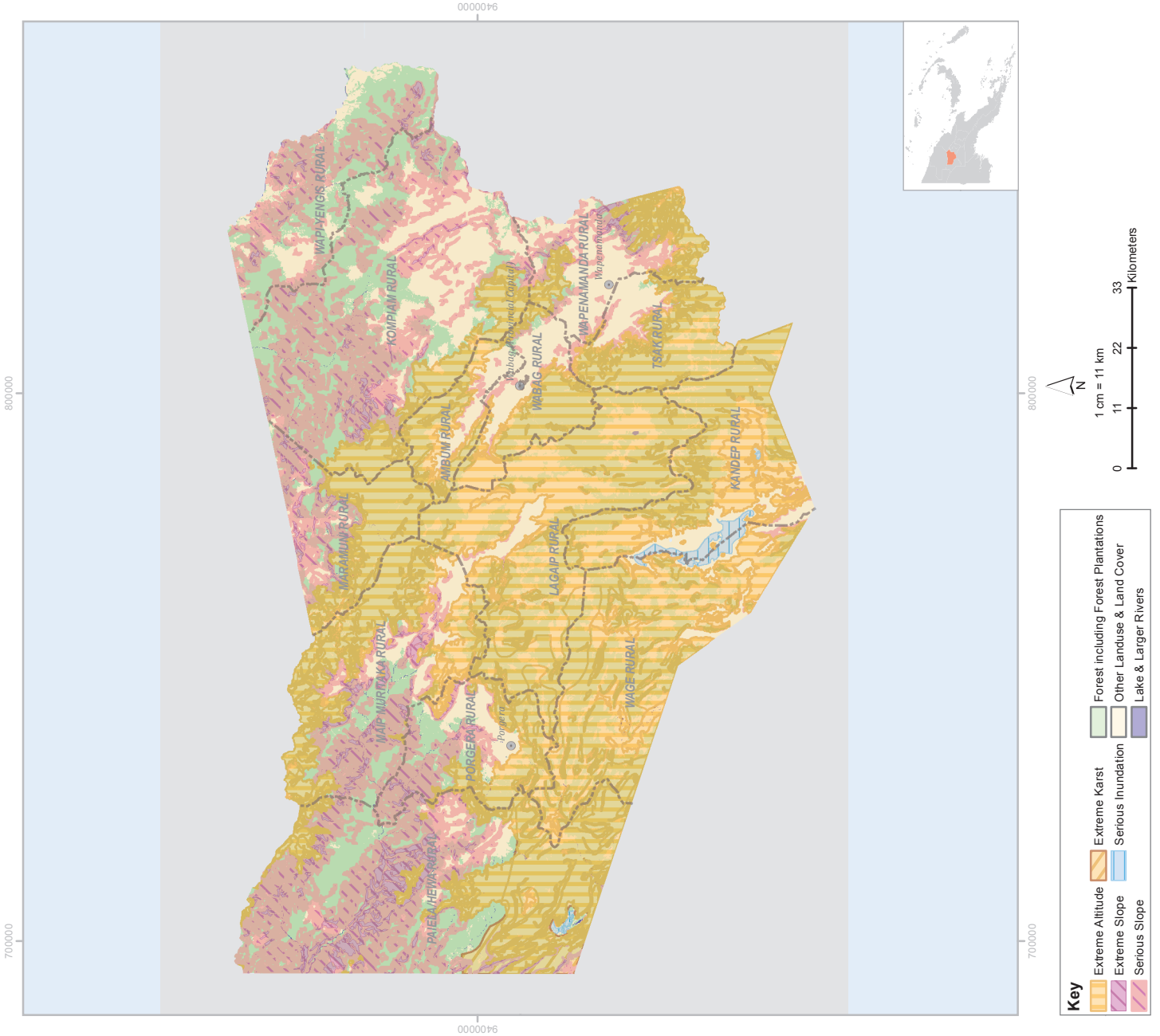
0 10 20 30 Kilometers



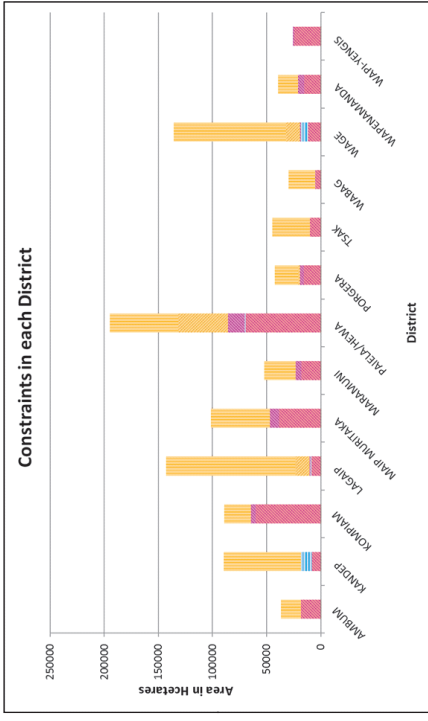
PLAN_ID	NAME	AREA (ha)	CONCESSION TYPE	STATUS
805	Pogera	387.37	TRP	Proposed
800	Meriamanda	620.12	TRP	Proposed
803	Waripa	29,668.63	TRP	Proposed
802	Domisau	9,341.83	TRP	Proposed
801	Kaimanda	281.09	TRP	Proposed
899	Sautaru	165,431.53	TRP	Proposed
898	KOMPIAM	273,038.08		Proposed

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

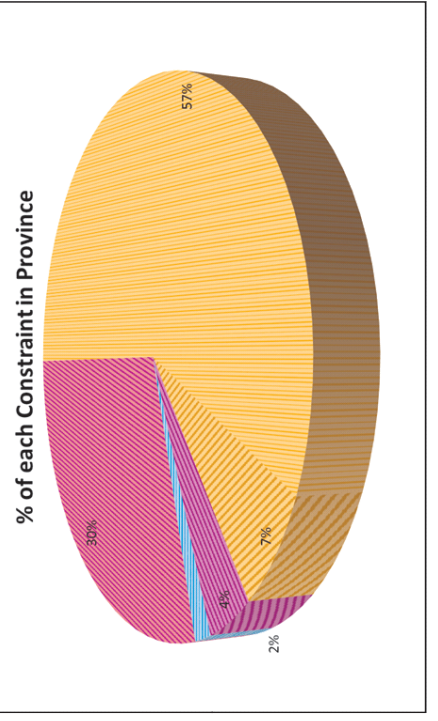
CONSTRAINTS TO COMMERCIAL TIMBER PRODUCTION, ENGA PROVINCE



Brief Report on Logging Constraints of Enga Province



Enga Province, being located in the Highlands Region, has a lot of its constrained areas classified as 'Extreme Altitude' and 'Serious Slope'. This can be seen right through out all the districts in the province. There are a few 'Extreme Slope' constrained areas in the Kompam, Maip-Muritaka, Maramuni, Paeila-Hewa, Pogera, and Wapenamanda Districts. The province also has some 'Extreme Karst' and 'Serious Inundation' constrained areas in the Kandep and Wage Districts.



20. National Capital District



General information/Overview

1. Location

National Capital District (NCD) is located on the southern coast of mainland PNG. The landform is relatively flat with scattered hills. It is located completely within Central Province and does not share a common border with any other province.

National Capital: Port Moresby

Land area: 26, 114 ha

Population: 364, 125 (2011)

Number of District: 3 (Moresby North-East, Moresby North-West,
Moresby South)

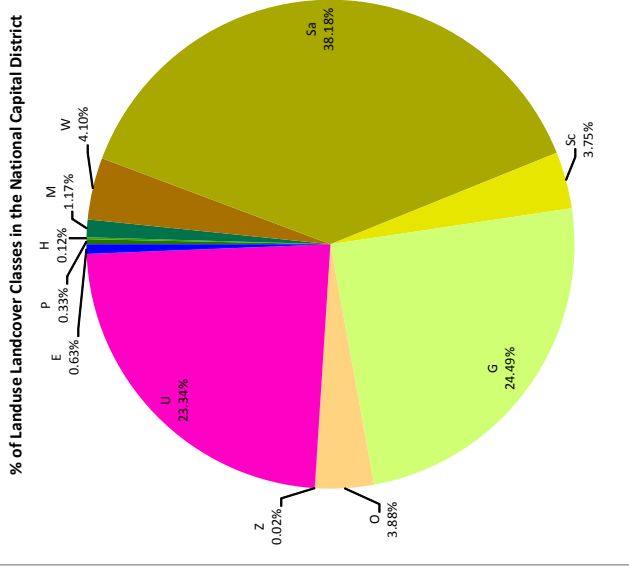
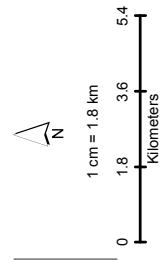
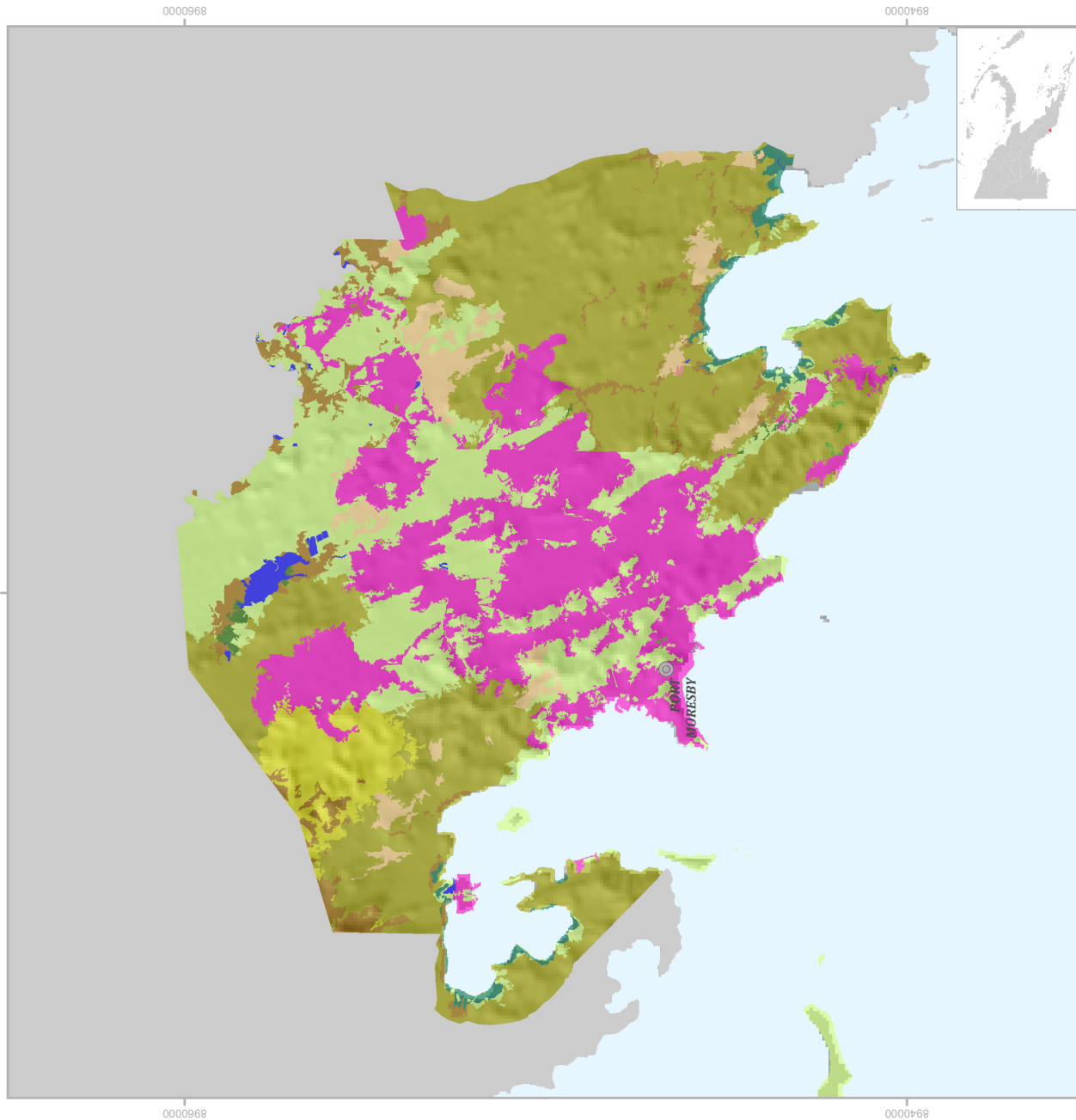
Number of Local Level Governments (LLGs): 8 LLGs

2. Forest Information

Forest Area: 12, 442 ha

Note: NCD has not selected a Provincial Tree.

VEGETATION AND LAND COVER MAP OF NATIONAL CAPITAL DISTRICT (2012 FOREST BASEMAP VERSION 1.1)



Pie Chart showing percentage in Landuse, Landcover of National Capital District.

% of Landuse Landcover	
Code	National Capital District
P	0.33%
H	0.12%
M	1.17%
W	4.10%
Sa	38.18%
Sc	3.75%
G	24.49%
O	3.88%
Z	0.02%
U	23.34%
E	0.63%
Land Area (ha)	26,114.30

Table showing percentage in Landuse, Landcover of National Capital District. Percentage calculated from area in hectares.

21. Hela Province



General information/Overview

1. Location

Hela Province is located in the highlands of PNG and consists of mountain ranges and valleys. The province was once under the provincial administration of the Southern Highlands province.

Provincial Administration Centre: Tari

Land area: 1,055,593 ha

Population: 249, 449 (2011)

Number of District: 3 (Komo-Magarima, Koroba-Kopiago, Tari-Pori)

Number of Local Level Governments (LLGs): 11 LLGs

2. Forest Information







Forest Area: 633, 156 ha

Provincial Tree

The provincial tree is 'Brown Pine' (scientifically known as *Podocarpus nerifolius*) and is commonly found in the Altitude forest on uplands, Lower Montane forest and Montane forest.

Significance of Provincial tree:

It is soft wood species and the people of Hela used brown pine for various uses such as timber for the construction of homes. Culturally, the leaves are used for dressing/decorations by the men during cultural dances or ceremonies and as well burnt to repel insects.

Scientific name: <i>Podocarpus neriifolius</i>	Family: <i>Podocarpaceae</i>	Common Name/Trade name: <i>Brown Pine</i>
<p><u>Description</u></p> <p>A large canopy tree with straight cylindrical bole. Outer bark is grey, pale brown, or black with rough, scaly or flaky, peeling texture. Inner bark red or brown, fibrous with non-sticky colourless exudate. Leaf is simple, long narrow, spirally arranged, upper surface green and lower surface pale green. Flowers: male and female flowers on different plant. Flowers: small. Fruit/Seed: a green nut (immature) turns bluish when mature and contains a single seed.</p>		
Tree	Bark	Leaf/Leaves
 <p>Source: http://tropical.theferns.info/viewtropical.php?id=Podocarpus+neriifolius </p>	 <p>Inner bark</p> <p>Source: http://www.pngplants.org/PNGtrees/TreeDescriptions/Podocarpus_neriifolius_D_Don.html </p>	 <p>Source: http://www.pngplants.org/PNGtrees/TreeDescriptions/Podocarpus_neriifolius_D_Don.html </p>
Note:	Flower	Fruit/Seed
<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> <p>Male Cones Source: http://tropical.theferns.info/viewtropical.php?id=Podocarpus+neriifolius </p>	 <p>Female cones</p> <p>Source: https://florafaunaweb.nparks.gov.sg/Special-Pages/plant-detail.aspx?id=3076 </p>  <p>Male cones</p>	 <p>Source: https://www.flowersofindia.net/catalog/slides/Brown%20Pine.html </p>