

# **ANNUAL REPORT 2007**

**TANGKULAP-SG. PINANGAH FOREST  
RESERVE – FMU 17A**

## 1.0 INTRODUCTION

Tangkulap Forest Reserve and part of Sg. Pinangah Forest Reserve forms FMU 17A and covers an area of 50,020 hectares. FMU 17A is a degraded forest due to intensive and unplanned harvesting in the past. It is envisaged that they will be no harvesting for the next 20 years. Human intervention is inevitable. Aggressive tending (silviculture) and enrichment planting is needed to speed up the recovery of the forest and make it productive again.

FMU 17A is managed by the management of Deramakot Forestry District. It is made up of 91 compartments of manageable sizes and prescribed with the following forest functions.

<input checked="" type="checkbox"/> Conservation	1,909 ha (5 compartments)
<input checked="" type="checkbox"/> Production (NFM)	37,396 ha (66 compartments)
<input checked="" type="checkbox"/> Production (Intensive Forest Restoration)	10,715 ha (20 compartments)

The management of FMU 17A is concurrent to an approved 10-year Forest Management Plan (2006 – 2015), and prescription of these management activities is operationalised according to a Annual Work Plan, prepared by the management of Deramakot Forestry District.

The major forest management activities are:

- Silviculture Tending
- Forest Rehabilitation
  - Intensive Forest Restoration involving harvesting for site preparation
  - Enrichment Planting

2 private companies have been awarded licences to carry out Intensive Forest Restoration and 1 private company, a contract to do tending (silviculture) and enrichment planting. They are:

- Lebihasil S/B (SFMLA 01/2005)  
Compartments 55 (545 ha) and 56 (627 ha)
- Maxland S/B (SFMLA 01/2007)  
Compartments 70 (655 ha) and 71 (322 ha)
- Bumi Hijau S/B  
4,000 ha annually (tending)  
250 ha annually (enrichment planting)

Under the 9th Malaysia Plan (2006 – 2010), the State Government of Sabah has allocated RM18,998,600 to manage FMU 17A under SFM. For the year 2007, a budget of RM3,929,000 was approved. It is also planned for FMU 17A to be certified under the Forest Stewardship Council (FSC) in 2008. Pre-assessment is now on-

going to address all gaps prior to major assessment by SGS (a FSC accredited auditing agency) for certification.

## FOREST OPERATION

### 1. HARVESTING

Although there is no harvesting as stated in the FMP, site preparation for Intensive Forest Restoration which involves harvesting are carried out in compartments 55, 56, 70 and 71. For the year 2007, only compartment 55 has been harvested. Detail of harvest is provided below

**TABLE 1. HARVESTING OF COMPARTMENT 55 BY LEBIHASIL S/B (SFMLA 01/2005)**

Compt.	Sub-block	Size (ha)	Volume (m <sup>3</sup> )	Royalty (RM)	Status
55	A	104	4,073.05	219,592.41	Completed
	B	156	2,778.34	152,852.80	
	C	63	1,672.57	97,501.70	
	D	80	1,034.60	52,210.78	
	E	69	1,858.82	97,768.33	
	F	54	1,660.07	91,181.10	
		<b>545</b>	<b>13,077.45</b>	<b>711,107.12</b>	

### 2. TENDING (SILVICULTURE)

The objective of silviculture tending is to liberate and enhance growth of future crop trees and bring them to harvestable size at the shortest time possible.

As of 2007, **11,438 ha** have been tended at a cost of **RM4,003,250**.

**TABLE 2. SILVICULTURE TENDING BY BUMI HIJAU S/B**

Year	Compartment No	Area Treated (ha)	Contract Fee (RM)
2004	12	143	50,000
2005	12,13,14,15	2,000	700,000
2006	1,2,3,16,32,33,49	4,000	1,400,000
2007	32,33,49,50,60,51,48,52 (AWP 2007)	4,000	1,400,000
	52,36,46 (addition)	1,295	453,250
<b>TOTAL</b>		<b>11,438</b>	<b>4,003,250</b>

### 3. FOREST REHABILITATION

Forest rehabilitation is deemed necessary because about 10,000 ha of the forest is highly degraded with insufficient stocking and natural regeneration. There are two approach to forest rehabilitation in FMU 17A.

- Intensive Forest Restoration
- Enrichment planting

#### 3.1 INTENSIVE FOREST RESTORATION

Four compartments totaling about 2,000 ha have been identified. They are compartments 55 (545 ha), 56 (627 ha), 70 (655 ha) and 71 (322 ha). Fast growing indigenous tree species such as Laran, Binuang, Batai and Sepat is used for planting.

Only compartment 55 with a hectarage of 399 ha has been planted by the licensee, Lebihasil S/B in 2007.

**TABLE 3. INTENSIVE FOREST RESTORATION PLANTING**

Compt.	Sub-block	Area (ha)	Species	Status
55	A	97	Batai	Planted
	B	134		Not planted (Nursery/Saw mill/Camp)
	C	56	Binuang	Planted
	D	53	Bnuang, Laran & Magas	Planted
	E	59	Batai	Planted
	F	50		Not planted (research)

#### 3.2 ENRICHMENT PLANTING

According to the FMP, a total area of 2,400 ha is required to be enriched with mixed dipterocarps, fruit trees and fast growing indigenous species. For the year 2007, a total area of 53 ha has been planted.

**TABLE 4. ENRICHMENT PLANTING**

Compt.	Sub-block	Area (ha)	Species	Date Planted
47	A	37	Campuran (Dipterocarps & fast growing indigenous)	Feb., 2007
15		4	Sentul, Bako-bako, Keranji, Obah, Mata kucing, Kayu malam, Kerudung dan Sengkuang	Nov., 2006
22		12	Bnuang, Laran & Sepat	Nov., 2006
		<b>53</b>		

#### 4. "OCCUPATION PERMIT"

17 occupation permits were issued for the year 2007. Roads for log extraction and log yards for temporary log storage are the two main purpose for application of OPs in FMU 17A. A total fee of **RM 260,164.08** was collected from the year 2005 to 2007.

**TABLE 5. REVENUE COLLECTED FROM "OCCUPATION PERMIT"**

<i>Year</i>	<i>Fees (RM)</i>
2005	86,914.08
2006	81,500.00
2007	91,750.00
<b>Total</b>	<b>260,164.08</b>

**TABLE 6. OCCUPATION PERMIT ISSUED (2007)**

<i>No.</i>	<i>OP #</i>	<i>OP OWNER</i>	<i>EFFECTIVE PERIOD</i>	<i>PURPOSE</i>	<i>AREA (ha)</i>
1.	JP(DFR) OP 04/2005	Rakyat Berjaya Sdn. Bhd.	01.09.2007-31.08.2009	Camp Site	0.436
2.	JP(DFR) OP 02/2004	Rakyat Berjaya Sdn. Bhd.	19.08.2007-18.08.2008	Log yard	3.54
3.	JP(DFR) OP 01/2004	Rakyat Berjaya Sdn. Bhd.	12.03.2007-11.03.2008	Log extraction	37
4.	JP(DFR) OP 02/2005	Kontraktor Malaysia	01.04.2007-31.03.2008	Saw mill/log yard	2.177
5.	JP(DFR) OP 01/2005	Rakyat Berjaya Sdn. Bhd.	01.01.2007-31.12.2007	Log extraction	79.5
6.	JP(DFR) OP 08/2005	Rakyat Berjaya Sdn. Bhd.	01.09.2007-31.08.2008	Log yard	1.01
7.	JP(DFR) OP 01/2006	Kontraktor Malaysia	21.03.2007-20.03.2008	Nursery	1.26
8.	JP(DFR) OP 03/2005	Wajakaya Sdn. Bhd.	04.03.2007-03.03.2008	Extraction of oil palm produce	24
9.	JP(DFR) OP 05/2005	Rakyat Berjaya Sdn. Bhd.	01.09.2006-31.08.2008	Log yard	1.197
10.	JP(DFR) OP 02/2006	Bumi Hijau	23.03.2007-22.03.2008	Office/Nursery	1.0
11.	JP(DFR) OP 03/2006	Rakyat Berjaya Sdn. Bhd.	20.04.2007-19.04.2008	Workshop/Camp	1.7
12.	JP(DFR) OP 04/2006	Rakyat Berjaya Sdn. Bhd.	23.03.2007-22.03.2008	G/keeper's house	1.08
13.	JP(DFR) OP 01/2007	Lebihasil S/B	11.04.2007-10.04.2008	Saw mill/Camp/Log yard	1.99
14.	JP(DFR) OP 02/2007	Lebihasil S/B	11.04.2007-10.04.2008	Nursery	0.99
15.	JP(DFR) OP 02/2007	Rakyat Berjaya Sdn. Bhd.	22.05.2007-21.05.2008	Log yard	1.80
16.	JP(DFR) OP 04/2007	Maxland S/B	28.05.2007-27.05.2008	Camp/Nursery	2.4
17.	JP(DFR) OP 05/2007	GRM Engineering S/B	01.11.2007-31.10.2008	Camp	0.53
<b>TOTAL</b>					<b>161.61</b>

## 5. WILDLIFE CONSERVATION AND HCVF

### 5.1 OPPORTUNISTIC SIGHTINGS

FMU 17A supports a variety of wildlife as evident in records of sightings (Opportunistic Sightings) camera trappings and Orang utan census. Record of sightings for the year 2007 show that the most common mammalian species are the Pygmy elephants, Bearded pig, Samba deer and Malay civet. The long tail macaque and pig tailed macaque are the most commonly sighted primates. There were also sightings of Orang utans (S. Suparlan, P. Lagan & A. Ahmad, 2007) and Proboscis monkeys (B. Taraan, 2007). As for raptors, the Crested Serpent Eagle and the Black Eagle are most common. The Brahminy Kite was also sighted (M. Salutan, 2007). Refer to Table 7, Opportunistic Sightings 2007.

TABLE 7. OPPORTUNISTIC SIGHTINGS (2007)

<b>SPECIES AND FREQUENCY OF SIGHTINGS/ENCOUNTERS</b>	
<b>LOCALLY THREATENED</b>	
Orangutan ( <i>Pongo pygmaeus</i> )	10
Pygmy Elephant	205
Tembadau / Banteng ( <i>Bos javanicus</i> )	1
Clouded Leopard ( <i>Neofelis nebulosa</i> )	2
Proboscis Monkey ( <i>Nasalis larvatus</i> )	1
Borneon Gibbon ( <i>Hylobates muelleri</i> )	3
Red Leaf Monkey ( <i>Presbytis rubicunda</i> )	2
Helmeted Hornbill ( <i>Rhinoplax vigil</i> )	23
<b>COMMON</b>	
Sambar deer ( <i>Cervus unicolor</i> )	150
Bornean yellow muntjac ( <i>Muntiacus atherodes</i> )	29
Bearded pig ( <i>Sus barbatus</i> )	198
Lesser mouse-deer ( <i>Traulus javanicus</i> )	67
Greater mouse-deer ( <i>Tragulus napu</i> )	60
Flat-headed cat ( <i>Felis planiceps</i> )	10
Leopard cat ( <i>Felis bengalensis</i> )	23
Bay cat ( <i>Felis badia</i> )	2
Malay civet ( <i>Viverra zangha</i> )	146
Common palm civet ( <i>Paradoxurus hermaphroditus</i> )	78
Malay badger ( <i>Mydaus javanensis</i> )	55
Oriental small-clawed otter ( <i>Aonyx (Amblonyx) cinerea</i> )	11
Long-tailed macaque ( <i>Macaca fascicularis</i> )	41
Pig-tailed macaque ( <i>Macaca nemestrina</i> )	48
Moonrat ( <i>Echinosorex gymnurus</i> )	7
Thick-spined porcupine ( <i>Thecurus crassispinis</i> )	15
Pangolin ( <i>Manis javanica</i> )	21
Rhinoceros Hornbill ( <i>Buceros rhinoceros</i> )	46
Pied Hornbill ( <i>Anthracoceros coronatus</i> )	35
Argus Pheasant	30
Reticulated Python	5
Flying Lemur ( <i>Cynocephalus variegates</i> )	6
Crested Serpent-Eagle ( <i>Spirionis cheela</i> )	37
Black Eagle ( <i>Ictinaetus malayensis</i> )	8



Buffy Fish-owl ( <i>Ketupa ketupu</i> )	17
Oriental darter	22
Hill Myrna ( <i>Gracula religiosa</i> )	10
Flying fox ( <i>Pteropus vampyrus</i> )	27
Crested Fireback	5
Black cobra	3
Monitor lizard	66
Binturong or Bear cat ( <i>Arctictis binturong</i> )	1

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## 5.2 ORANG UTAN

The aerial census methodology (M. Ancrenaz, 2005) by counting Orang utan nests along pre-determined transects, is being used in FMU 17A. This exercise is carried out twice a year and the results are shown in **Table 8**.

**TABLE 8. ORANG UTAN POPULATION (AERIAL ORANG UTAN NEST CENSUS)**

Date of Census	# of Individuals/km <sup>2</sup>	# of Orang-utan in Tangkulap FR
Jun-05	0.84	189
Nov-05	0.93	210
Jun-06	1.01	228
Nov-06	0.9	203
Aug-07	0.83	187
Nov-07	1.16	262

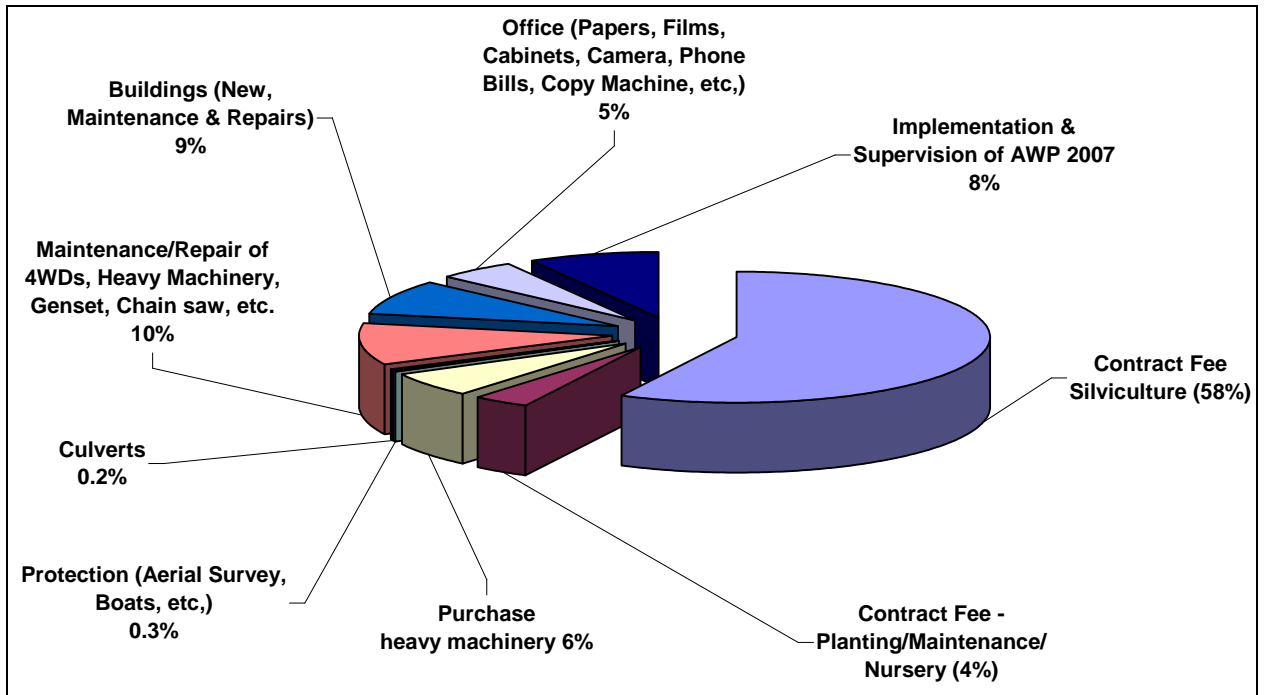
## 5.3 MALAYSIAN PALM OIL COUNCIL (MPOC) AND MOBILE WILDLIFE MONITORING UNIT

With the participation of the Sabah Forestry Department in the Malaysian Palm Oil Promotional Council Seminar in London, MPOC has pledged a sum of RM300,000 for funding the setting up of a Mobile Wildlife Monitoring Unit in FMU 17A. This include the purchase of 1 unit 4WD vehicle and employment of supporting staff.

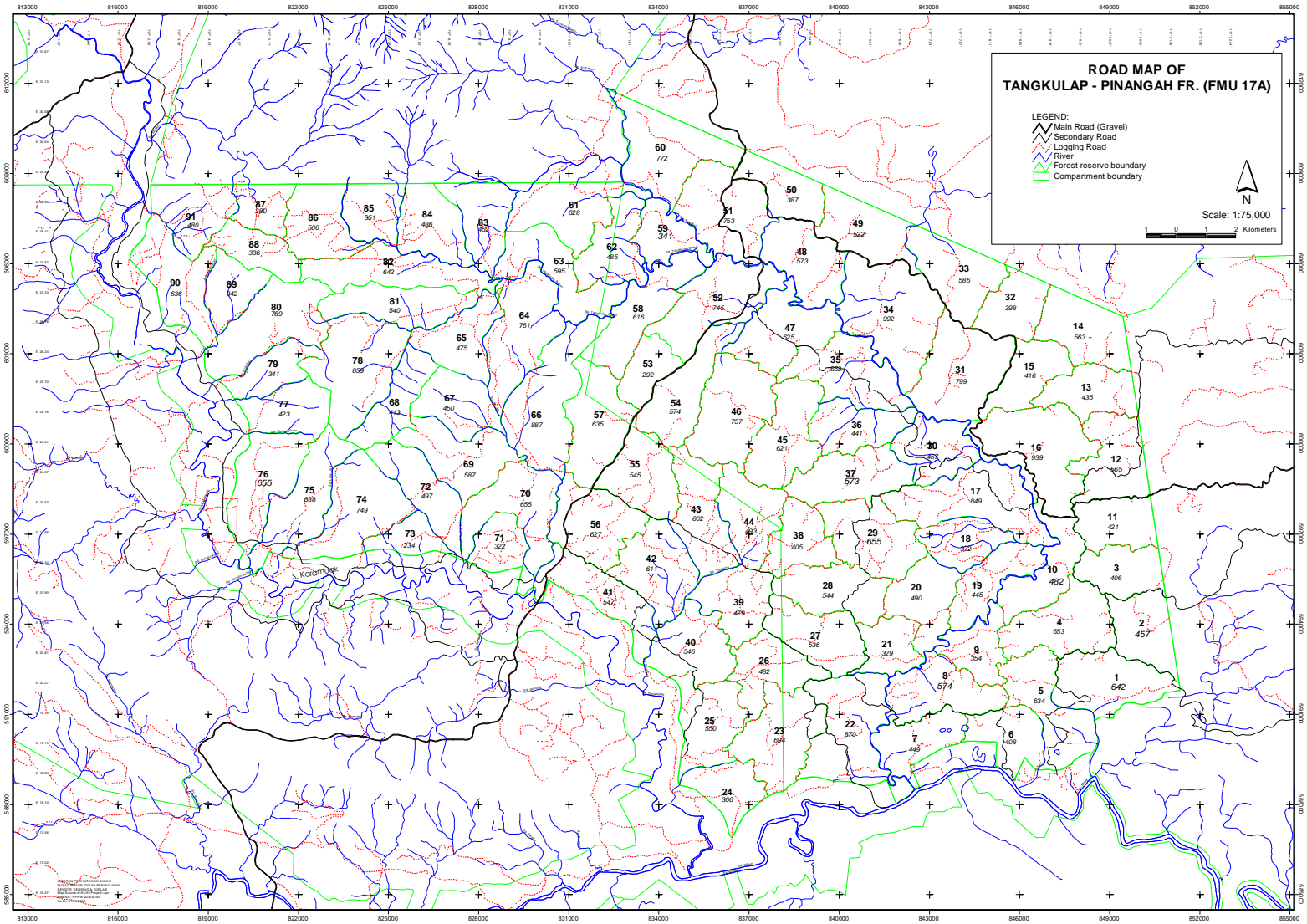
The main logging road (Yayasan Sabah/Maxland OP) which runs through Tangkulap Forest Reserve provide easy access to poachers. To curb illegal hunting, scheduled ground patrolling is carried out by the management of Deramakot Forestry District and FMU 17A range office.

## 6. COST AND PROFIT

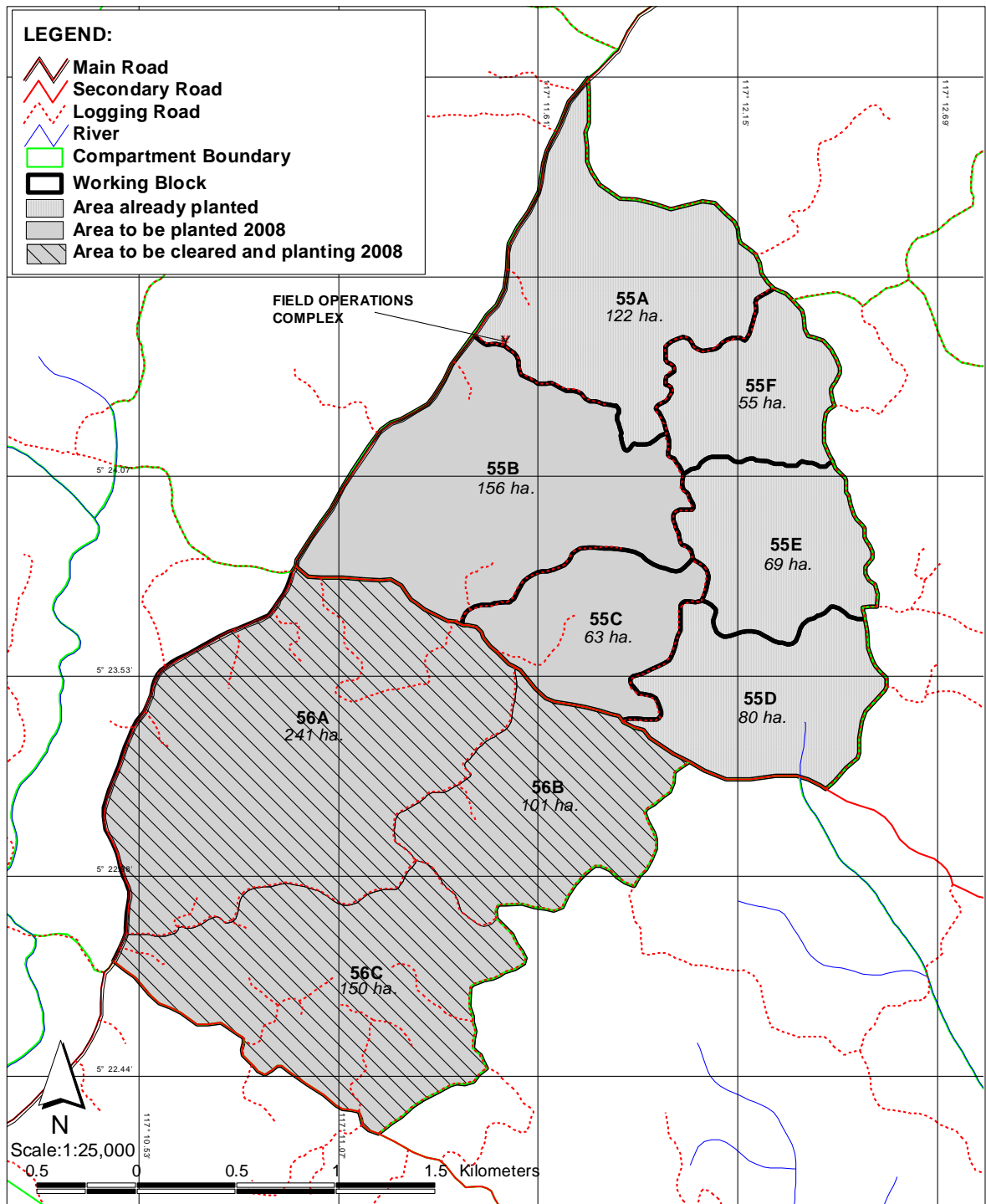
The actual costs of maintaining all forest management activities in FMU 17A for the year was RM3,162,361.65 (refer Pie Chart). The government allocated budget for the year was RM3,929,000, indicating a surplus of RM743,138.35. Returns from Occupation Permit fees and royalties stood at RM802,857.12.



# COMPARTMENT MAP OF TANGKULAP-PINANGAH FOREST RESERVE (FMU 17A)



## INTENSIVE FOREST RESTORATION (COMPARTMENT 55 & 56-LEBIHASIL S/B-SFMLA1/2005)



## INTENSIVE FOREST RESTORATION (COMPARTMENT 70 & 71-MAXLAND S/B-SFMLA1/2005)

