

AUSTHAI GEOPHYSICAL CONSULTANTS LIMITED

Teak Tree Audit Report

Conducted For

Asia Teak Group

At

U-Thong Estate, Suphanburi Province

Chon Daen Estate, Phetchabun Province

Thailand

February 2017

Tree Audit Report

Date: 27 – 28 February 2017

Area 1: U-Thong plantation, Thailand.

1. U-Thong 2 – Block 1, located at N14.44008/E99.85665
2. U-Thong 2 – Block 2, located at N14.43884/E99.85629
3. U-Thong 2 – Block 3, located at N14.43898/E99.85652
4. U-Thong 3, located at N14.44287/E99.85392
5. U-Thong 4, located at N14.44125/E99.85638

Date: 1 – 2 March 2017

Area 2: Chon Dan plantation, Thailand.

1. Chon Dan1, located at N16.15928/E100.84883
2. Chon Dan2, located at N16.16283/E100.85193
3. Chon Dan3, located at N16.16239/E100.85226
4. Chon Dan4, located at N16.15803/E100.85280
5. Chon Dan5, located at N16.15730/E100.85362
6. Chon Dan6, located at N16.15696/E100.85129
7. Chon Dan7, located at N16.15687/E100.85425
8. Chon Dan8, located at N16.15451/E100.85524
(Remark; Location is in Lat/Long)

Audit teams consist of:

- Asia Teak Team:
 1. JMP Jayalath
- Thai Orchids Lab Team:
 1. Field Officer
 2. Field worker
- Austhai Geophysics Team
 1. Channon Chueajiw
 2. Juthamard Mhardsen
 3. Jukraphan Prakodkla

Audit procedure:

1. Full tree count to be recorded against the current grid mapping and identified on the record as follows.

- a) Tree present: ✓
- b) Tree not present : ✕
- c) Very poor, small tree to be removed and Tree designated for retention by TOL: S
- d) Marked for thinning: O

The data of both areas present on table 1.

Comparison Tree Audit 2016 and 2017

Estate Name	Block Number	Geophysics Count Trees 2016			Geophysics Count Trees 2017				Difference
		Total Good Trees	Small/Poor Trees	Total Trees	Total Good Trees	Small/Poor Trees	Marked for thinning	Total trees	
U - THONG	U Thong2 - 1	624	6	630	595	1		596	34
	U Thong2 - 2	1,277	104	1,381	1,181	31	-	1,212	169
	U Thong2 - 3	735	117	852	692	7	-	699	153
	U Thong3	753	3	756	755	13	17	785	(29)
	U Thong4	316	48	364	303	1	-	304	60
	Total All Blocks	3,705	278	3,983	3,526	53	17	3,596	387
CHON DAN	1	3,160	9	3,169	2,531	-	319	2,850	319
	2	260	0	260	260	-	19	279	19
	3	1,218	2	1,220	991	-	72	1,063	157
	4	2,540	15	2,555	2,004	-	212	2,216	339
	5	292	0	292	243	5	16	264	28
	6	1,144	0	1,144	951	-	28	976	165
	7	1,486	2	1,488	1,272	-	71	1,343	145
	8	822	59	881	712	20	14	749	135
Total All Blocks	10,922	87	11,009	8,964	25	751	9,740	1,269	
Total	All plantations in Thailand	14,627	365	14,992	12,490	78	768	13,336	1,656

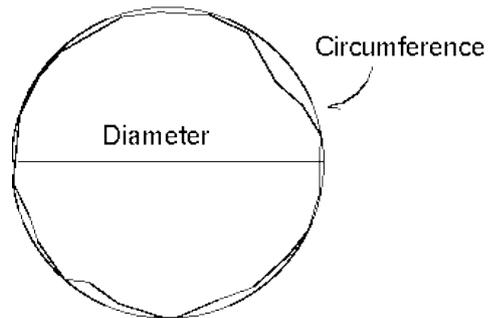
Table 1: Comparison Tree Audit 2016 and 2017

2. Sample plot Data Collection

2.1 Diameter at Breast Height (DBH)

Diameter Tape

Diameter tapes are the most common diameter measurement tool. It is a flexible tape which is used to measure circumference, but reads in units of diameter (*Figure 1*).



(*Figure 1. Diagram of measuring diameter with a diameter tape.*)

This conversion is accomplished by dividing the circumference by π (3.1415).

$$D = \frac{C}{\pi}$$

where D is the diameter, C is the circumference and π is (3.1415).

Diameter should be measured every tree in sample plot excluding trees not present, small/poor trees, using diameter tape (*Figure 2*) at the 1.3 m. height from the ground.



(*Figure 2. diameter tape*)

The data of both areas present on table 2, 3.

Comparison Diameter at Breast Height 2016 - 2017

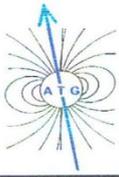
Estate	Block no.	Plot No.	2016					2017				
			No. of trees measured	Average DBH (cm)	Variance in DBH 2015 vs. 2016	Average GBH (cm)	Variance in GBH 2015 vs. 2016	No. of trees measured	Average DBH (cm)	Variance in DBH 2016 vs. 2017	Average GBH (cm)	Variance in GBH 2016 vs. 2017
U-Thong - 02	1	Block Average	51	21.7	0.53	68.25	1.65	48	22.6	0.86	70.96	2.71
	2	Block Average	113	22.0	1.27	69.08	3.98	103	22.0	-	69.08	-
	3	Block Average	67	22.7	0.85	71.28	2.68	62	22.9	0.20	71.91	0.63
	Avg	Block Average	-	22.1	0.88	69.54	2.77	-	22.5	0.35	70.65	1.11
U-Thong - 03	4	Block Average	70	20.1	0.37	63.05	1.15	67	20.1	0.02	63.11	0.07
U-Thong - 04	5	Block Average	49	20.1	0.71	63.03	2.23	43	20.4	0.33	64.06	1.03
Estate Average				21.3	0.74	66.94	1.98	-	21.6	0.28	67.82	0.89
Total			350					323				

Table2: Comparison diameter at breast height 2016 and 2017 in U-Thong estate.

Estate	Block no.	Plot No.	2016					2017				
			No. of trees measured	Average DBH (cm)	Variance in DBH 2015 vs. 2016	Average GBH (cm)	Variance in GBH	No. of trees measured	Average DBH (cm)	Variance in DBH 2016 vs. 2017	Average GBH (cm)	Variance in GBH
Chon Dan	1	Block Average	294	20.7	0.11	65.15	0.35	263	22.2	1.45	69.71	4.55
	2	Block Average	36	18.9	(0.06)	59.42	(0.18)	29	21.1	2.18	66.25	6.83
	3	Block Average	139	19.5	0.08	61.36	0.26	123	21.2	1.66	66.57	5.21
	4	Block Average	246	21.5	0.20	67.64	0.64	217	23.3	1.76	73.16	5.53
	5	Block Average	31	21.5	0.36	67.63	1.13	30	22.7	1.16	71.28	3.65
	6	Block Average	127	20.5	0.16	64.50	0.50	106	22.6	2.06	70.96	6.46
	7	Block Average	174	21.1	0.32	66.20	1.00	156	22.8	1.72	71.59	5.39
	8	Block Average	112	24.7	0.31	77.46	0.96	94	27.2	2.53	85.41	7.95
Estate Average			-	21.1	0.19	66.17	0.58	-	22.9	1.81	71.87	5.70
Total			1,159					1,018				

Table3: Comparison diameter at breast height 2016 and 2017 in Chon Dan estate

Appendix



Austhai Geophysical Consultants (Thailand) Co., Ltd.

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Teak Tree Count Report at U-Thong Plantation Thailand

Section number & Subsection: Block 01 Date of data collection: 27/02/2017 - 28/02/2017

Start location: South of Row A

End location: North of Row BT

Person completing this form: Charnon Chueajiw Contact number: (+66) 061 381 5509

Other team members: _____

Trees Count Detail: Physical tree count = 595, Poor or Small tree count = 1

Number of teak trees: 596

Estimate of trail distance with visibility less than 15 ft. on each side:

_____ % on right _____ % on left

Estimate of average visible distance from trail where less than 15 ft.

_____ ft. to right _____ ft. to left

Direction of travel for above estimates: _____ South to North

_____ North to South

Other observations: _____

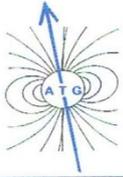
Charnon Chueajiw
(Austhai Geophysical Consultants)

Date: 19/03/2017

Asia Teak
(Asia Teak Supervisor)

Date: 02/03/2017

Figure 3: Field report at U-Thong 02 block 01



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Teak Tree Count Report at U-Thong Plantation Thailand

Section number & Subsection: Block 02 Date of data collection: 27/03/2017-28/03/2017

Start location: South of Row B

End location: North of Row B

Person completing this form: Juthamard Mhardsen Contact number: 661096-784412

Other team members: -

Trees Count Detail: Physical tree count = 1,181

Poor or small tree count = 31

Number of teak trees: 1,212

Estimate of trail distance with visibility less than 15 ft. on each side:

_____ % on right _____ % on left

Estimate of average visible distance from trail where less than 15 ft.

_____ ft. to right _____ ft. to left

Direction of travel for above estimates: _____ South to North

_____ North to South

Other observations: _____

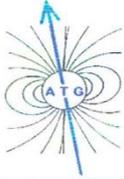
(Austhai Geophysical Consultants)

Date: 15/02/2017

(Asia Teak Supervisor)

Date: 02/02/2017

Figure 4: Field report at U-Thong 02 block 02



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Teak Tree Count Report at U-Thong Plantation Thailand

Section number & Subsection: Block 3 Date of data collection: 27/02/2017 - 28/02/2017

Start location: South of Row A

End location: North of Row CH

Person completing this form: Jukraphan Prakodkha Contact number: (+66) 085 812 9923

Other team members: -

Trees Count Detail: Physical tree count = 755, poor or small tree count = 13, Marked for thinning tree count = 17

Number of teak trees: 785

Estimate of trail distance with visibility less than 15 ft. on each side:

_____ % on right _____ % on left

Estimate of average visible distance from trail where less than 15 ft.

_____ ft. to right _____ ft. to left

Direction of travel for above estimates: _____ South to North

_____ North to South

Other observations: _____

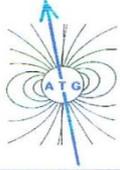
Jukraphan Prakodkha
(Austhai Geophysical Consultants)

Date: 16/03/2017

[Signature]
(Asia Teak Supervisor)

Date: 02/03/2017

Figure 5: Field report at U-Thong 02 block 03



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Teak Tree Count Report at U-Thong Plantation Thailand

Section number & Subsection: Block 3 Date of data collection: 27/03/2017
Start location: South of Row B
End location: North of Row CC
Person completing this form: Jukrapon Prakodklo Contact number: (+66) 085 812 9923
Other team members: -

Trees Count Detail: Physical tree count = 692, poor or small
tree count = 7

Number of teak trees: 699

Estimate of trail distance with visibility less than 15 ft. on each side:

_____ % on right _____ % on left

Estimate of average visible distance from trail where less than 15 ft.

_____ ft. to right _____ ft. to left

Direction of travel for above estimates: _____ South to North

_____ North to South

Other observations: _____

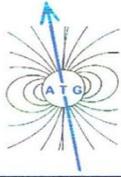
Jukrapon Prakodklo
(Austhai Geophysical Consultants)

Date: 16/03/2017

[Signature]
(Asia Teak Supervisor)

Date: 02/03/2017

Figure 6: Field report at U-Thong 03



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Teak Tree Count Report at U-Thong Plantation Thailand

Section number & Subsection: Block 4 Date of data collection: 28/02/2017
Start location: South of Row A
End location: North of Row AU
Person completing this form: Jukraphan Prakodkla Contact number: (+66)0858129923
Other team members: Juthamard Mhardsen

Trees Count Detail: Physical tree count = 303, poor or small tree count = 1

Number of teak trees: 304

Estimate of trail distance with visibility less than 15 ft. on each side:

_____ % on right _____ % on left

Estimate of average visible distance from trail where less than 15 ft.

_____ ft. to right _____ ft. to left

Direction of travel for above estimates: _____ South to North

_____ North to South

Other observations: _____

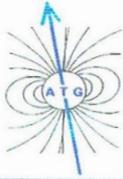
Jukraphan Prakodkla
(Austhai Geophysical Consultants)

Date: 16/03/2017

[Signature]
(Asia Teak Supervisor)

Date: 09/03/2017

Figure 7: Field report at U-Thong 04



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Teak Tree Count Report at Chon Dan Plantation Thailand

Section number & Subsection: Block B1 Date of data collection: 01/03/2017 - 02/03/2017

Start location: East of Row AH

End location: West of Row G

Person completing this form: Chamon chuejiiw Contact number: (+66) 061 3813509

Other team members: _____

Trees Count Detail: Physical tree count = 2,531, Marked for
thinning tree count = 319

Number of teak trees: 2,850

Estimate of trail distance with visibility less than 15 ft. on each side:

_____ % on right _____ % on left

Estimate of average visible distance from trail where less than 15 ft.

_____ ft. to right _____ ft. to left

Direction of travel for above estimates: _____ South to North

_____ North to South

Other observations: _____

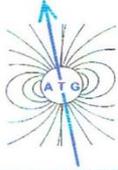
Chamon chuejiiw
(Austhai Geophysical Consultants)

Date: 16/03/2017

Chamon chuejiiw
(Asia Teak Supervisor)

Date: 02/03/2017

Figure 8: Field report at Chon Dan 01 block 01



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Teak Tree Count Report at Chon Dan Plantation Thailand

Section number & Subsection: Block 02 Date of data collection: 01/03/2017 - 02/03/2017

Start location: South of row B

End location: North of row AA1

Person completing this form: J. Thammadit Phardsen Contact number: +6686-784412

Other team members: -

Trees Count Detail: Physical tree count = 260

Marked for thinning tree count = 19

Number of teak trees: 279

Estimate of trail distance with visibility less than 15 ft. on each side:

_____ % on right _____ % on left

Estimate of average visible distance from trail where less than 15 ft.

_____ ft. to right _____ ft. to left

Direction of travel for above estimates: _____ South to North

_____ North to South

Other observations: _____

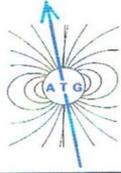
[Signature]
(Austhai Geophysical Consultants)

Date: 17/03/2017

[Signature]
(Asia Teak Supervisor)

Date: 02/03/2017

Figure 9: Field report at Chon Dan 01 block 02



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Teak Tree Count Report at Chon Dan Plantation Thailand

Section number & Subsection: Block 03 Date of data collection: 01/03/2017
Start location: South of Row B
End location: North of Row AK
Person completing this form: Juthamard Mhardsen Contact number: +6686-7844112
Other team members: -

Trees Count Detail: Physical tree count = 991
Marked for thinning tree count = 72

Number of teak trees: 1063

Estimate of trail distance with visibility less than 15 ft. on each side:

_____ % on right _____ % on left

Estimate of average visible distance from trail where less than 15 ft.

_____ ft. to right _____ ft. to left

Direction of travel for above estimates: _____ South to North

_____ North to South

Other observations: _____

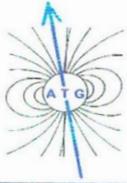
[Signature]
(Austhai Geophysical Consultants)

Date: 17/03/2017

[Signature]
(Asia Teak Supervisor)

Date: 02/03/2017

Figure 10: Field report at Chon Dan 01 block 03



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Teak Tree Count Report at Chon Dan Plantation Thailand

Section number & Subsection: Block 4 Date of data collection: 01/03/2017

Start location: South of Row B

End location: North of Row BM

Person completing this form: Jukraphan Prakodkla Contact number: (+66) 085 812 9923

Other team members: -

Trees Count Detail: Physical tree count = 2,004 Marked for
thinning tree count = 212

Number of teak trees: 2,216

Estimate of trail distance with visibility less than 15 ft. on each side:

_____ % on right _____ % on left

Estimate of average visible distance from trail where less than 15 ft.

_____ ft. to right _____ ft. to left

Direction of travel for above estimates: _____ South to North

_____ North to South

Other observations: _____

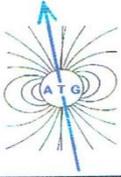
Jukraphan Prakodkla
(Austhai Geophysical Consultants)

Date: 17/03/2017

[Signature]
(Asia Teak Supervisor)

Date: 02/03/2017

Figure 11: Field report at Chon Dan 01 block 04



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Teak Tree Count Report at Chon Dan Plantation Thailand

Section number & Subsection: Block 05 Date of data collection: 02/03/2017
Start location: South of Row C
End location: North of Row BA.
Person completing this form: Juthamard Mhardsen Contact number: +6686-7844112
Other team members: _____

Trees Count Detail: Physical tree count = 243 , poor or small
tree count = 5 , Marked for thinning tree count = 16
Number of teak trees: 264

Estimate of trail distance with visibility less than 15 ft. on each side:

_____ % on right _____ % on left

Estimate of average visible distance from trail where less than 15 ft.

_____ ft. to right _____ ft. to left

Direction of travel for above estimates: _____ South to North

_____ North to South

Other observations: _____

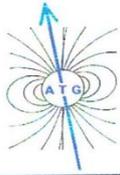
Juthamard Mhardsen
(Austhai Geophysical Consultants)

Date: 16/03/2017

Juthamard Mhardsen
(Asia Teak Supervisor)

Date: 02/03/2017

Figure 12: Field report at Chon Dan 01 block 05



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Teak Tree Count Report at Chon Dan Plantation Thailand

Section number & Subsection: Block 06 Date of data collection: 02/03/2017
Start location: South of Row B
End location: North of Row AV
Person completing this form: Johannard Mhardsen Contact number: +6686-784412
Other team members: -

Trees Count Detail: Physical tree count = 979, Marked for
thinning tree count = 28

Number of teak trees: 979

Estimate of trail distance with visibility less than 15 ft. on each side:

_____ % on right _____ % on left

Estimate of average visible distance from trail where less than 15 ft.

_____ ft. to right _____ ft. to left

Direction of travel for above estimates: _____ South to North

_____ North to South

Other observations: _____

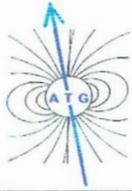

(Austhai Geophysical Consultants)

Date: 16/03/2017


(Asia Teak Supervisor)

Date: 02/03/2017

Figure 13: Field report at Chon Dan 01 block 06



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Teak Tree Count Report at Chon Dan Plantation Thailand

Section number & Subsection: Block 7 Date of data collection: 02/03/2017
Start location: South of ROW C
End location: North of ROW BB
Person completing this form: Jitraphan Rakodkla Contact number: (+66) 085812 9923
Other team members: -

Trees Count Detail: Physical tree count = 1,272 , Marked for
thinning tree count = 71

Number of teak trees: 1,343

Estimate of trail distance with visibility less than 15 ft. on each side:

_____ % on right _____ % on left

Estimate of average visible distance from trail where less than 15 ft.

_____ ft. to right _____ ft. to left

Direction of travel for above estimates: _____ South to North

_____ North to South

Other observations: _____

Jitraphan Rakodkla

(Austhai Geophysical Consultants)

Date: 17/03/2017

[Signature]

(Asia Teak Supervisor)

Date: 02/03/2017

Figure 14: Field report at Chon Dan 01 block 07



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Teak Tree Count Report at Chon Dan Plantation Thailand

Section number & Subsection: Block 08 Date of data collection: 02/03/2017
Start location: South of Row AL, South of Row AK
End location: North of Row CM, North of Row B
Person completing this form: Juthumard Mhardsen Contact number: +6686-7844112
Other team members: -

Trees Count Detail: Physical tree count = 712, poor or small tree
count = 20, Marked for thinning tree count = 14

Number of teak trees: 746

Estimate of trail distance with visibility less than 15 ft. on each side:

_____ % on right _____ % on left

Estimate of average visible distance from trail where less than 15 ft.

_____ ft. to right _____ ft. to left

Direction of travel for above estimates: _____ South to North

_____ North to South

Other observations: _____

[Signature]
(Austhai Geophysical Consultants)

Date: 15/03/2017

[Signature]
(Asia Teak Supervisor)

Date: 02/03/2017

Figure 15: Field report at Chon Dan 01 block 08