

**THE ETHNOBOTANY OF THE *SEMELAI* COMMUNITY AT
TASEK BERA, PAHANG, MALAYSIA:
AN ETHNOGRAPHIC APPROACH FOR RE-SETTLEMENT**

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**Thesis submitted for the degree of
Doctor of Philosophy**

**School of Architecture,
Landscape Architecture and Urban Design**



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Table A: Research Schedule

Research Activities	Year 1												Year 2												Year 3												Year 4																									
	Quarter 1			Quarter 2			Quarter 3			Quarter 4			Quarter 1			Quarter 2			Quarter 3			Quarter 4			Quarter 1			Quarter 2			Quarter 3			Quarter 4																												
	2005												2006												2007												2008												2009												2010	
	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	J	F	M	A	M	Jn	Jy	A	S	O-D	J-M	Jn	Jy									
Semester 1				Semester 2				Semester 3				Semester 4				Semester 5				Semester 6				Semester 7				Semester 8																																		
Identifying Research Gap	[Green]																																																													
Literature Search: Developing the Project Background	[Green]																																																													
Writing A Research Proposal	[Green]																																																													
Research Proposal Submission..CCSP	28th Feb 2006												★ Formal Assessment (Progress Report)																								1st Extension																									
Initial Visit													[Green]																								2nd Extension																									
Write Up	Appropriate methods selected for testing the hypothesis/ idea												Ch 1 - 5 (Lit Rev & RM)																																																	
	Submit Major Review.. 31st Aug 2006												★ Formal Assessment (Progress Report)																																																	
Preparatory for Fieldwork													Review Ch 1-5																																																	
Fieldwork													Field Survey Chap. 3 & 4																																																	
	Submit Annual Review...31st Oct 2006												★												★ Formal Assessment (Progress Report)																																					
Data Analysis	Testing the relationship expressed by idea/ hypothesis is tested experimentation - data collection, analyzed and interpreted												Ch 6-7																																																	
Checking Data													2nd Field Study 6-7												Review Ch 6-7												★ Formal Assessment (Progress Report)																									
Research Findings & Evidence	Ideas/ hypothesis/ design accepted, rejected or modified												Conclusion and Recommendation												Review Ch 1-7																																					
	Submit Annual Review...31st Oct 2007												★												★ Formal Assessment (Progress Report)																																					
Preparation of Final Drafts	Finishing Data Management: Field Notes & transcription												[Green]												[Purple]																																					
	Submitting Chapter 8 & 9 drafts												[Green]												[Purple]																																					
	Ammendments (Editing) all chapters												[Green]												[Purple]												[Green]																									
	CompilationsCh 1-9 & Appendices (Self Editing)												[Green]												★ Formal Assessment (Progress Report)																																					
	2nd draft CompilationsCh 1-9 & Appendices (Self Editing)												[Green]												[Purple]																																					
	Submit Annual Review...31st Oct 2008												★																																																	
Final Submission for External	Final Editing and Proof Reading												[Green]												[Purple]												[Green]																									
	Final Submission to Graduate Centre - 26th September 2009																																				★																									
Thesis Review and Amendment	Thesis submission to External Examiners												[Yellow]												[Green]												[Yellow]																									
	Review and Feedback from External Examiners -												[Yellow]												[Green]												[Yellow]																									
Final Thesis Submission	Thesis Amendment												[Yellow]												[Green]												[Yellow]																									
	Submission Hard-bound copy to Graduate Centre for Graduation																																				★																									

Source: composed and amended by the Author

Table B : Population of Indigenous People in Malaysia

	Main Groups	POPULATION										Sub-Groups	Sub-ethnic Groups
		1947	1960	1965	1969	1990	1991	1995	1999	2000	2003		
PENINSULAR MALAYSIA	SENOI				30,370		15,122	49,440	17,706	72,871 (54.84%)	81,826 (55%)	Temiar	Temiar
							26,049		34,248			Semai	Semai
							403		234			Che Wong	Other Senoi
							3,193		2,594			Jah Hut	
							2,488		2,348			Semoq Beri	
							2,185		3,503			Mah Meri	
	PROTO MALAYS				20,830		16,637	40,117	21,484	55,852 (42.03%)	61,585 (42%)	Jakun	Jakun
							16,020		18,560			Temuan	Temuan
							4,103					Semelai	Semelai
							64		73			Orang Kanaq	Other Proto Malays
							801		1,037			Orang Seletar	
							2,492		3,221			Orang Kuala	
	NEGRITO				1,820		960	2,972	1,519	4,150 (3.12%)	4,001 (3%)	Bateq	Bateq
							224		254			Kensiu	Kensiu
							235		150			Kintaq	Kintaq
							1,049		1,244			Jahai	Jahai
						359	173		Lanoh			Lanoh	
							167		Mendriq			Mendriq	
TOTAL		34,737	40,291	45,985	53,000	92,529	92,529	113,541	132,873	147,412	18 ethnics		
SABAH	DUSUNIC					476,981					Dusunic	Dusun, Coastal Kadazan, Kimaragang, Eastern/ Labuk, Kadazan, Lotud, Kujiau, Tatana, Tenggara, Bisaya, Rungus, Dumpas	
	PAITANIC					52,751						Tambanua, Upper Kinabatangan, Sinabu, Lobuu/Rumanau, (Abai) Sungai, Lingkabau	
	MURUTIC					166,843						Kolod/ Okolo, Gana, Kalabakan, Sebangkung, Serudung, Tagal/ Sumambu, Baukan, Nabay, Timugon	
	BAJAU					25,062							
	SULUK/ TAUSUG					23,865							
	SINO-NATIVE					377,895							
	OTHER INDIGENOUS												Bonggi, Illanun, Bengkahak/Mangkaak, Malayic (Cocos, Kedayan), Tidung, Dayak, Lundayeh, Bugis, Ida'an
TOTAL						1123,397						39 ethnics	
SARAWAK	IBAN					493,000							
	BIDAYUH					140,000							
	MELANAU					96,000							
	OTHER INDIGENOUS					91,000							Kenyah, Kayan, Ukit, Penan, Sekapan, Lahanan, Lun Bawang, Kelabit, Berawan and Punan Bah
TOTAL						820,000						37 ethnics	
<p><i>Combined Sources: Wurm and Hattori, 1983 source from internet http://www.temiar.com/oa.html; (Carey, 1976, p. 11; JHEOA, 1992, p. 4); Nicholas 1996: 158, Lasimbang 1996: 178-9 and Phoa 1996: 198 as stated in (Anonymous, 2005)</i></p> <p><i>Note:1. the figure for Sabah in 1990 is from the 1970 Population Census using annual growth rate; 2. The figure for Sarawak in 1990 (All figures are rounded-off to the nearest ten)</i></p>													

Table C: Chronology of Ethnobotanical Expansion in General

Year Pub.	Scholars	Details	References
1492	-	The discovery of the New World initiates the identification of several plants of considerable economic value and is based on observation of native people	http://www.plantinteractions.co.uk/ethnobiology/ethnobotany.shtml
1511	-	Literature of modern botany starts after the Portuguese landed	nil
	F.L.Dunn	Utilized Botanical and ecological discoveries where the botanical data has been used in the reconstruction of prehistoric and protohistoric commercial era using ethnobotany and ethnoecology approaches	(Rahman, Heng, Hassan, & Taha, 1994).
1612	-	<i>Sejarah Melayu</i> (Malay History); did not explain individuals who contributes to the literature in Malay history but only mention their existence. Malay Manuscripts of Science and Technology in Malaysia and Sumatera are very less compared to Malay Manuscript of other subjects	-
1663	John Josselyn	Begins his study of the natural history of New England, later publishing his text on native herbal medicine, New England realities discovered.	http://www.plantinteractions.co.uk/ethnobiology/ethnobotany.shtml
1786	Lt. Col. R. Kyd.	In charged of experimental cultivation of teak, for ship building. The principle garden was established at Calcutta, India.	(Holttum, 1970)
1817	-	The principle garden was established at Bogor, Java, Indonesia	(Holttum, 1970)
1821	-	The principle garden was established at Peradeniya, Ceylon, Sri Lanka	(Holttum, 1970)
1859	-	Local Agri-Horticultural Society found a garden	
1871-1878	-	Seminal works by botanists Palmer and Power is published. A period of 25 years dominated by economic botanists.	http://www.plantinteractions.co.uk/ethnobiology/ethnobotany.shtml
1873	-	Ethnobotany is called Botany Aborigine (Aboriginal Botany) by Power of Aborigine; manifestation of plants by locals for medicine, food, and material	-
1874	H. J. Murton	Was in charged of the principle garden which was established at Singapore, taken over by the Government of the Straits Settlements.	(Holttum, 1970)
1880	N. Cantley	Replacing H. J. Murton, as well as being the Director of both Gardens and Forests in the Straits Settlements (Singapore, Malacca and Penang).	(Holttum, 1970)
1886	Munshi Ismail	Translated the manuscript of Malay traditional medicine into English. The manuscript then was sent to London to the 'pharmaceutical Society of Great Britain'.	(Salleh, Kusalah, & Latiff, n.d)

Source: Author's collection

Table C: Chronology of Ethnobotanical Expansion in General (cont.)

Year Pub.	Scholars	Details	References
1888	Henry Nicholas Ridley	Replacing Cantley who has been working in the Natural History Museum in London. Great botanical explorations, especially on Peninsula flora has a large collection of information about local plants (timber, rattans, rubber-producers, fibres, dyes, drug etc) and published in <i>Agricultural Bulletin</i>	(Holttum, 1970)
1892	E.M. Holmes	Documented the medicinal plants with his notes and records and has been published as ' <i>Malay Materia Medica</i> '	
1893	-	Anthropological interest in aboriginal botany lays more emphasize on cultural significance	http://www.plantinteractions.co.uk/ethnobiology/ethnobotany.shtml
5 Dec 1895	John Harshberger	An American botanist, started the science of ethnobotany. He first introduced the term in his lecture as " <i>the study of plants used by the primitive and Aboriginal people</i> " The first official ethnobotany term being used in article anonym, published by the "evening telegram"	(Benthall, 1993; Gary, 1995).
1986	Fewkes	introduces the term ethnobotany in Anthropological literature	http://www.plantinteractions.co.uk/ethnobiology/ethnobotany.shtml
1898	-	Ethnology Department of US National Museum endeavours to document all useful plants of North American Indians	http://www.plantinteractions.co.uk/ethnobiology/ethnobotany.shtml
1900	-	<i>The first PhD in Ethnobotany is awarded to David Barrow for his doctoral dissertation in ethnobotany</i>	-
1901 - 1912	H. N. Ridley	<i>a popular name in rubber industry in Malay Peninsula. He was the director of the Singapore Botanic Garden and then replaced by Isaac Henry Burkill</i>	-
1912	Isaac Henry Burkill with George Watt	Wrote the " <i>Dictionary of Economic Products of India</i> " in Calcutta.	-
1912	Edward Sapir	Wrote about the influence of environment on language	(Rambo, 1979)
1915	Dr J.D. Gimlett	Published book entitled: ' <i>Malay Poison and Charm Cures</i> '. He is the expert in traditional medicine especially from local Kelantanese.	-
1916	Robbins <i>et al.</i>	Introduced some new theoretical notions and methodologies stating "ethnobotany is a scientific work that should resemble the deep understanding of the Indigenous people's relationships with plants, which is more than just collecting plants and procuring native names"	Robbins <i>et al.</i> , 1916, pg

Source: Author's collection

Table C: Chronology of Ethnobotanical Expansion in General (cont.)

Year Pub.	Scholars	Details	References
1919	Gilmore	Pioneers into research in traditional peoples resource management	http://www.plantinteractions.co.uk/ethnobiology/ethnobotany.shtml
1920	-	Ethnobotany terminology was introduced in Asia started with India as medicinal plants that have been used also in rituals, arts and other local living culture, followed by other countries like China, Vietnam and Malaysia	Tinjauan Pustaka
	Dr J.D. Gimlett with Thomson	Published book entitled: ' <i>A Dictionary of Malayan Medicine</i> '.	Rambo, 1979
1922-1925	H. N. Ridley	After his retirement, he wrote five volumes of " <i>Flora of the Peninsula</i> "	Hottum, 1970
1930		The manuscript was edited by Dr J.D. Gimlett and botanized by I.H. Burkill and was published by Garden Bulletin as ' <i>the Medical Book of Malayan Medicine</i> '. It described 696 species and 113 families of medicine plants since 1675 of specimens that were collected by them.	Rambo, 1979
	Castetter	Establishes a masters programme in ethnobotany at the University of New Mexico	http://www.plantinteractions.co.uk/ethnobiology/ethnobotany.shtml
1935	Mohamed Haniff, Isaac Henry Burkill	Compilation of book called ' <i>A Dictionary of Economic Product of the Malay Peninsula</i> ' which listed 14,400 local names from about 4,700 species of plants, animal and mineral in Malay Peninsula. Burkill had discussed about 4656 plant species from 1630 genus in 223 family but only managed to described about 1,219 species from 699 genus that can be found in Malay Peninsula	Salleh, et.al., n.d
1941	Volney Jones	Published <i>The Nature and Status of Ethnobotany</i> . In that publication, Jones emphasized how ethnobotanical research should be more concerned and focused upon native people and plant relationships for their sole benefits rather than for their economic purposes	Jones, 1941
1958	Van Steenis	Listed a few magic plants that used by the group people of Dayak	

Source: Author's collection

Table D: Chronology of Ethnobotanical Publications and Expansion in Malaysia

Ethnics	Year	Authors	Aspect
Malay	1886	Munshi Ismail	translating the Malay Traditional Medicine manuscripts into English
Malay	1892	Holmes	<i>Materia Medica Melayu, Johor</i>
Malay	1894	Ridley	<i>Materia Medica Melayu</i>
Malay	1913	Gimlett	<i>Kepercayaan Kuno dlm perubatan Melayu</i>
Malay	1920	Gimlett	<i>Racun dan jampi dlm budaya Melayu</i>
Malay	1930	Burkill & Haniff	Traditional medicinal of the Malays (<i>Perubatan Tradisi amalan Melayu</i>)
Malay	1930	Gimlett & Burkill	Translation of Malay Medicine Book (<i>Terjemahan Kitab Perubatan Melayu</i>)
Malay	1939	Gimlett & Thomson	<i>Kamus Perubatan Melayu</i>
Orang Asli	1953	Polunin	<i>Sejarah Semulajadi perubatan tradisi Orang Asli Malaya</i>
Sabah Societies	1954	Arthur	Documenting botanical information directly related to sociological and anthropological studies of the Sabah societies
Indigenous people of Dayak	1958	Van Steenis	Listed a few magic plants of the Indigenous people of Dayak
General	1980s	Kamarudin Mat Salleh	The establishment of Universiti Kebangsaan Malaysia stimulates research by local researchers
Orang Asli	1972	Lee	<i>Etnobotani tanaman sumber makanan</i>
Malay	1978	Hamir	<i>Perubatan Melayu Tradisional: Satu Tinjauan Umum</i>
Malay	1978	Nurhayati	<i>Sirih Pinang dalam istiadat dan perubatan Melayu Mukim</i>
General	1980s	KUBATRA	Traditional Medicine Research Group 'Kumpulan Penyelidikan Ubatan Tradisional' (KUBATRA) had established with multi-discipline members.

Source: Author's collection and (Salleh, Kusalah & Latiff, n.d)

Table D: Chronology of Ethnobotanical Publications and Expansion in Malaysia (cont.)

Ethnics	Year	Authors	Aspect
Malay	1980	Daud	<i>Daun Kayu & Perubatan Tradisional Melayu Tumpat, Kelantan</i>
Malay	1982	Jaafar	<i>Perubatan tradisi di kalangan masyarakat Melayu Kelantan</i>
Sabahan	1983	Guntavid, Dr. Kamarudin Mat Salleh	Listed 73 species from 54 families of plants were reported can cure 98 types of diseases in Sabah
Malay	1984	Mohd Taib Osman	<i>Bunga Rampai dan Budaya Melayu</i>
General	1984	Yusali	Had listed 51 species from 17 genus and 10 families of poisonous plants that caused dermatitis
Bidayuh, Iban, Sarawakian Malay	1986	Saigol	Studied a few species plant that used by the Bidayuh, Iban and Melayu in Sarawak as medicine plant.
General	1986	Local University students	Local Ethnobotanical Study on local people. (Medicinal plants)
Malay	1987	Hazidah and Daud	<i>Unsur Botani dalam Pantun</i> (Botanical aspects in Malay Phoem)
Malay	1987	Ibrahim and Kamaliah	<i>Ulam-ulam tempatan masyarakat Melayu di Semenanjung Malaysia</i> (Malay Condiments of the Peninsular)
Local Terengganu	1990	Mohamad	<i>Ethnobotanical plants for medicinal values of the Dungun, Terengganu</i> (Ethnobotanical plants for medicinal values of Dungun, Terengganu)
Malay	1991	Hassan	<i>Tumbuh-tumbuhan herba yg digunakan di kalangan masyarakat Melayu</i> (Herbals used by the Malays)
Orang Asli	1991	Mohd Kassim	<i>Tumbuhan dan pakaian,perumahan dan perhiasan diri Orang Asli</i>

Source: Author's collection and (Salleh, Kusalah & Latiff, n.d)

Table D: Chronology of Ethnobotanical Publications and Expansion in Malaysia (cont.)

Ethnics	Year	Authors	Aspect
Jah Hut	1991	Othman	<i>Sumber tumbuhan dan masyarakat Jah Hut di Lembah Krau</i>
Malay	1991	Halim	<i>Unsur Tumbuhan dalam Senibina</i>
Temuan	1991	Ong	<i>Perubatan tradisional di kalangan Orang Asli kaum Temuan</i>
Malay	1991	Latif	<i>Unsur Botani dalam Pantun dan peribahasa Melayu</i>
Murut	1991	Fasihuddin & hasmah	<i>Tumbuhan ubatan komuniti Murut, Sabah</i>
Iban	1991	Kedit	<i>Tumbuhan di dalam arkitektur dan hiasan kaum Iban Sarawak</i>
Local Sarawak	1991	Chai	<i>Tumbuhan ubatan tradisi di kalangan kumpulan etnik Sarawak</i>
Kadazan/ Dusun	1991	Lasimbang	<i>Tumbuhan ubatan tradisional yang digunakan oleh Dusun/ Kadazan</i>
Urban Dwellers	1992	Osman	<i>Aspek Kebun Halaman Orang Bandar di Taman Keramat, Selangor</i>
Malay	1994	Muhammad & Mustafa	<i>Beberapa tumbuhan ubatan Melayu Tradisi</i>

Source: Author's collection and (Salleh, Kusalah & Latiff, n.d)

Table E: Fishes of Tasek Bera

No	Names				Description	Habitat				Status
	Semelai	Malay	English	Scientific		Open Water	Peat Swamp Forest	River and streams	Pandanus-Lepironia Swamp	
	Bujuk	Bujuk	Forest Snakehead	<i>Channa lucius</i>	Rests on submerged roots of the Pandanus Plant. Tasek good					rare
	Toman Tarung	Toman	Giant Snakehead	<i>Channa micropeltes</i>	food fish. Most sought-after game fish because it puts up an excellent fight when caught. Rare elsewhere.					abundant
	Aruan	Haruan	Paya/ Common Snakehead	<i>Channa striata</i>	very tasty fish. Hardy species that can inhabit even polluted waters, good medicinal value					common
	Keli Kayu	Keli Kayu	Common Walking Catfish	<i>Clarias batrachus</i>	Popular food fish					
	Kemperas	Temperas	Red-eyed barb	<i>Cyclocheilichthys apogon</i>	very abundant here					abundant
	Sebarau	Sebarau	Hampala	<i>Hampala macrolepidota</i>	One of the most important freshwater sport fish					common
	Baug Kunyit	Baug Kunyit	River Catfish	<i>Hemibagrus nemurus</i>	Popular food fish					common
	Kawan	Kawan	Barb	<i>Labiobarbus festivus</i>	vulnerable to gill netting because it travels in a group					abundant
	Jumung	Tembok Tebing	Pikehead	<i>Luciocephalus pulcher</i>	not suitable for ornamental fish, difficult to keep alive					common
	Belida	Potak	Feather Back	<i>Notopterus notopterus</i>	Bony and not popular food fish					abundant
	Kalui	Kalui	Giant Gouramy	<i>Osphronemus goramy</i>	Excellent aquarium and food fish. Extremely vulnerable because builds its nest (made from plant material) on the water surface					common
	Terbul	Terbuk	Carp	<i>Osteochilus hasseltii</i>	good food fish. Very abundant here. No threats					abundant
	Patung	Patung	Banded Leaf Fish	<i>Pristolepis fasciata</i>	Popular as aquarium fish. Rare elsewhere but common here					common
	Lamparam Sungai	Lampam Sungai	Carp	<i>Puntius schwanenfeldii</i>	popular for its tasty meat. Temporary resident at the lake but common elsewhere in Malaysia					rare
	Setem		Harlequin Rasbora	<i>Rasbora heteromorpha</i>	heavily exploited as aquarium fish, vulnerable to pollution					common
	Seluang Sumatra	Seluang Sumatra	Sumatran Rasbora	<i>Rasbora sumatrana</i>	Not common in Tasek Bera but in great numbers in elsewhere					rare
	Kelisa	Kelisa	Asian Arowana / Bonytongue	<i>Scleropages formosus</i>	green variety					common and threatened
	Biji Durian		Chocolate Gouramy	<i>Sphaerichthys osphromenoides</i>	beautiful aquarium fish					rare
	Sepat Siam	Sepat Siam	Snakeskin Gouramy	<i>Trichogaster pectoralis</i>	Food and aquarium fish. Not common in Tasek Bera but in great numbers in elsewhere					rare
	Tapah	Tapah	Giant Catfish	<i>Wallago leerii</i>	Can grow more than 30Kg. Migrates from Sungai Bera into Tasek Bera in large numbers. Guard their eggs until they hatch. Have decreased substantially throughout Malaysia					common

source: Fishes of Tasek Bera, Wetlands International, 1999

Table F: List of Audio

Date of Audio taken	Audio Code (date & time)	Time Length (minutes)	Remarks/ References
FEBRUARY			
09/02/2007	@jheoa07020801.DVF	00:12:45	
09/02/2007	ronda dgn hj selamat07020802.DVF	00:31:23	
09/02/2007	Pak Engkok07020803.DVF	00:53:28	
09/02/2007	En Hashim07020904.DVF	00:47:23	
09/02/2007	Batin Kasim07020905.DVF	01:22:47	
10/02/2007	1stDayKg.pelawan07020906.DVF	00:23:41	
10/02/2007	penoreh07020907.DVF	00:10:12	
10/02/2007	1stday,KgPutat07020908.DVF	00:09:01	
10/02/2007	Malek 07021000.DVF	00:17:48	
10/02/2007	P.Cik Ni07021009.DVF	00:13:13	
10/02/2007	Pakcik Ni 07021010.DVF	00:15:55	
12/02/2007	Tmn Herba07021200.DVF	00:50:20	
13/02/2007	5 th day Uriday SABOT07021300.DVF	01:21:02	
14/02/2007	6 th day Puyang KAK07021401.DVF	00:58:40	
14/02/2007	6 th day tikar, Kop bt Besen07021402.DVF	01:05:13	Makcik Kop explained about some differences in wood quality for various usage
15/02/2007	ambik rasau07021500.DVF	00:28:55	
15/02/2007	tetawak&rebanak07021501.DVF	00:17:43	
15/02/2007	gambang07021502.DVF	00:20:47	
15/02/2007	Layor mengkuang07021600.DVF	00:43:54	
15/02/2007	Yuhanif 07021601.DVF	00:09:10	
15/02/2007	Tuai padi07021504.DVF	02:00:55	Kak Salmi described one example of sustainable practices among the Semelai in their field/ ladang
16/02/2007	Bersih kubur 07021602.DVF	00:19:08	
16/02/2007	Bersih kubur2 07021603.DVF	00:00:02	
18/02/2007	Bernikahan 07021800.DVF	01:24:49	
19/02/2007	07021900.DVF	03:07:38	
20/02/2007	07022003.DVF	00:22:21	
20/02/2007	07022004.DVF	01:43:35	
20/02/2007	07022005.DVF	00:08:46	

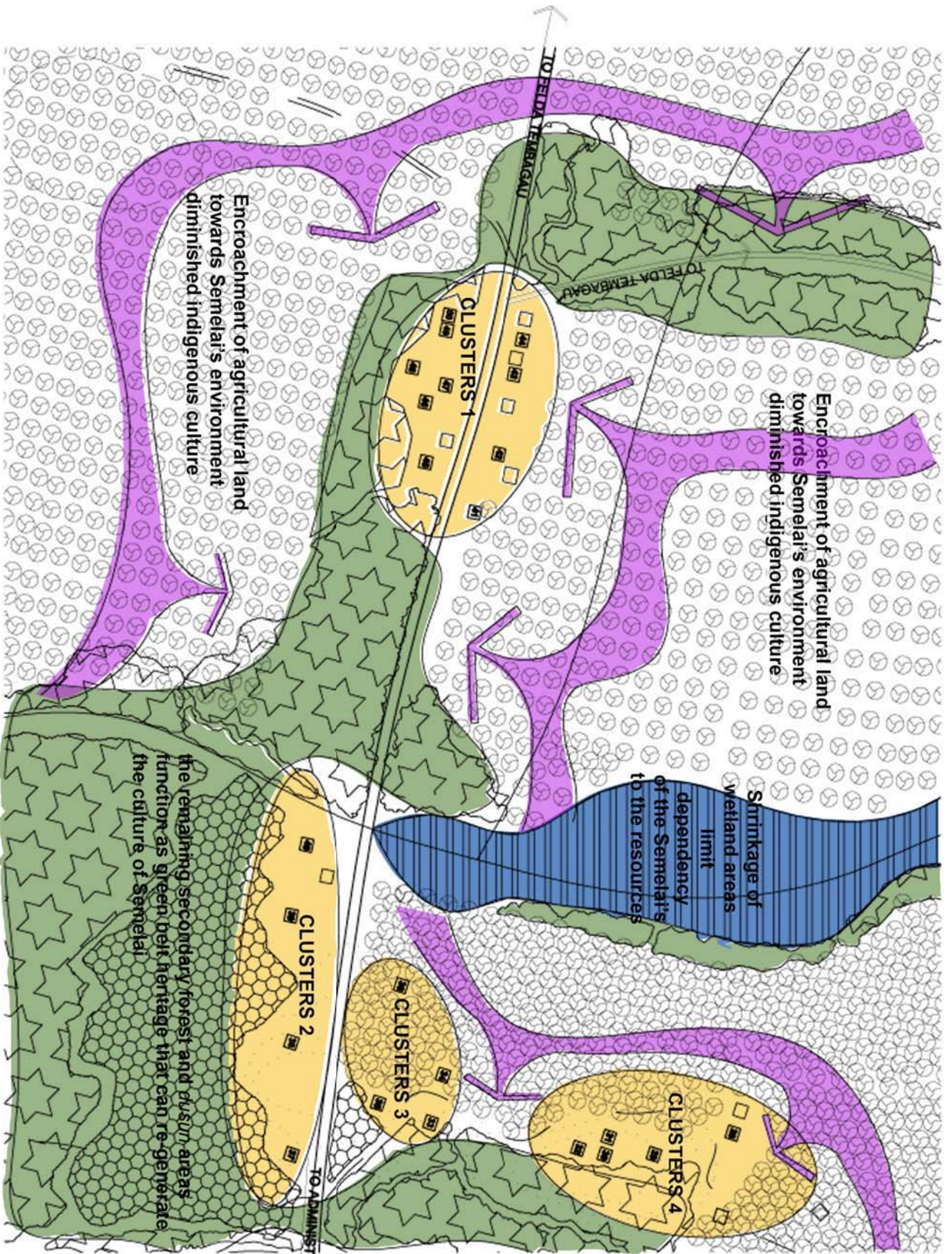
20/02/2007	Buru kancil Z0000004.DVF	00:31:41	
21/02/2007	RAMSAR-Gotong-royong07022100.DVF	00:49:34	
21/02/2007	Bunyi bising je07022101.DVF	08:42:00	
22/02/2007	Buru 070222.DVF	00:06:24	
22/02/2007	Buru 2 22.02.073.DVF	00:01:00	
TOTAL		14	

Date of Audio taken	Audio Code (date & time)	Time Length (minutes)	Remarks/ References
MARCH			
07/03/2007	Sembang Balai Yuhanis Z0000001.DVF	00:06:24	Sembang Balai Yuhanis Z0000001.DVF
08/03/2007	Balai Yuhanis07030700.DVF	01:57:24	Balai Yuhanis07030700.DVF
08/03/2007	Pakcik Leman Balai Yuhanis07030701.DVF	01:08:46	Pakcik Leman Balai Yuhanis07030701.DVF
08/03/2007	Atap buat balai 07030800.DVF	00:09:41	Atap buat balai 07030800.DVF
09/03/2007	Sembang Yuhanis07030801.DVF	00:58:12	
09/03/2007	Belajar bahasa semelai1 07030900.DVF	00:54:12	
09/03/2007	BatinKasim mlm07030900.DVF	02:37:52	
09/03/2007	Pakcik engkok kubur 07030901.DVF	01:01:06	
09/03/2007	notation07030901.DVF	00:06:34	
09/03/2007	9.3.07 Balik dr rmh batin Kasim 07030203.DVF	00:05:01	
10/03/2007	10.3.07 Perjalanan ke Kg Perah 07030200.DVF	00:17:40	
10/03/2007	10.3.07 Rmh Noki b Nulis 07030201.DVF	02:24:59	
10/03/2007	10.3.07 Balik dr rmh Sabu b. Kang 07030200.DVF	00:01:39	Pakcik Sabu explained about the ritual procedures before building a house or settlement
11/03/2007	Kak salmi memijak 110307.DVF	01:38:21	
11/03/2007	Kakak Yuhani melurut.DVF	00:27:56	
16/03/2007	Semelai Trail070316.DVF	02:34:41	
17/03/2007	Noriah170307.DVF Pg 128	01:58:55	He talked on why they turn into rubber plantation/
17/03/2007	Jirin jambul107031701.DVF	00:40:56	a few discrepancies in statements from respondents regarding floor construction of buildings. This variation demonstrates that the

			traditional knowledge has been diluted among the <i>Semelai</i>
17/03/2007	Jirin jambul207031702.DVF	01:05:55	
18/03/2007	Rumah pakcik engkok07031800.DVF	01:05:09	
18/03/2007	Poyang 07031801.DVF	01:31:25	
20/03/2007	Bebelian Puyang shakti 07032000.DVF	00:53:29	Bebelian Puyang shakti 07032000.DVF
20/03/2007	Bebelian puyang shakti(2) 07032001.DVF	00:21:02	bebelian puyang shakti(2) 07032001.DVF
20/03/2007	Bebelian puyang shakti(3) 07032002.DVF	00:02:39	Bebelian puyang shakti(3) 07032002.DVF
20/03/2007	Bebelian puyang shakti(4) 07032003.DVF	00:08:20	Bebelian puyang shakti(4) 07032003.DVF
20/03/2007	Bebelian puyang shakti(5) 07032100.DVF	00:25:05	
22/03/2007	B4 sembang batin pela 07032201.DVF	00:10:08	
22/03/2007	sembang batin pela 07032202.DVF	02:33:31	
23/03/2007	Hunting070323.DVF	01:46:31	
23/03/2007	Rumah pakcik engkok 070323.DVF	00:51:15	
24/03/2007	Kak Salmi menampi 070324.DVF	01:14:53	
24/03/2007	Tarian balai 24 mac07.DVF	00:22:04	
24/03/2007	Bomoh Rodi070324.DVF	01:32:40	
28/03/2007	Sembang balai yuhanif070328.DVF	00:46:11	
TOTAL		13	

Date of Audio taken	Audio Code (date & time)	Time Length (minutes)	Remarks/ References
APRIL			
06/04/2007	rumah pakcik engkok.DVF	00:30:11	a few discrepancies in statements from respondents regarding floor construction of buildings. This variation demonstrates that the traditional knowledge has been diluted among the <i>Semelai</i>
07/04/2007	simen kubur.DVF	00:32:53	a few discrepancies in statements from respondents regarding floor construction of buildings. This variation demonstrates that the traditional knowledge has been diluted among the <i>Semelai</i>
07/04/2007	simen kubur1.DVF	00:04:01	
07/04/2007	simen kubur2.DVF	01:18:44	
07/04/2007	simen kubur3.DVF	00:11:20	

07/04/2007	modelmaking abg leman1.DVF	01:04:42	Detail explanation about Semelai traditional construction method based on model making using sticks.
07/04/2007	modelmaking abg leman2.DVF	00:18:42	
08/04/2007	driving ke hutan.DVF	00:21:43	
08/04/2007	tengok damar.DVF	00:13:38	
08/04/2007	tengok minyak keruing & masuk hutan.DVF	03:53:40	
08/04/2007	driving balik.DVF	01:17:51	
09/04/2007	balai yuhanif07040900.DVF	01:52:48	
10/04/2007	batin pela07041000	00:26:08	
11/04/2007	balai yuhanif07041100.DVF	02:54:58	
13/04/2007	balai yuhanif07041300.DVF	01:35:00	
14/04/2007	Pakcik Rodi sembang1 07041400.DVF	00:51:52	
14/04/2007	Balai yuhanif ptg 1 07041402.DVF	01:00:41	
14/04/2007	Balai yuhanif mlm1 07041401.DVF	01:54:56	
14/04/2007	Bidan sudin07041401.DVF Refer pg 125	02:14:20	Interview with Bidan Sudin, male midwife who talked on the advantages of male midwife compared to female
15/04/2007	07041500.DVF	01:08:03	Tunyuk kراسي demonstration by Pakcik Rodi (ritual belief of dreaming)
15/04/2007	07041501.DVF	02:27:35	07041501.DVF
15/04/2007	07041502.DVF	01:34:02	07041502.DVF
16/04/2007	070416 kedai batin hoken.DVF	00:26:15	070416 kedai batin hoken.DVF
16/04/2007	07041601.DVF	00:03:07	07041601.DVF
16/04/2007	07041602.DVF	00:27:11	07041602.DVF
16/04/2007	07041603.DVF	00:00:06	07041603.DVF
16/04/2007	07041604.DVF	02:25:36	07041604.DVF
18/04/2007	07041800.DVF	02:14:01	07041800.DVF
19/04/2007	07041900.DVF	00:25:22	07041900.DVF
19/04/2007	07041901.DVF	01:00:12	07041901.DVF
19/04/2007	07041902.DVF	00:05:27	07041902.DVF
19/04/2007	07041903.DVF	01:06:31	07041903.DVF
22/04/2007	070422 Batin Pela.DVF	00:32:50	
23/04/2007	070423 tok mudim.DVF	00:59:09	
23/04/2007	070423 Batin Kasim.DVF	00:42:28	
24/04/2007	070424 balai yuhanif petang.DVF	03:26:12	
25/04/2007	070425 masuk hutan.DVF	01:56:06	
25/04/2007	070425 k.salmi01.DVF	00:43:34	
26/04/2007	07042600.DVF	00:22:33	
26/04/2007	07042601.DVF	00:42:48	
26/04/2007	070426 k.salmi3.DVF	01:24:15	
26/04/2007	070422 Batin Pela.DVF	00:18:03	
TOTAL		19	



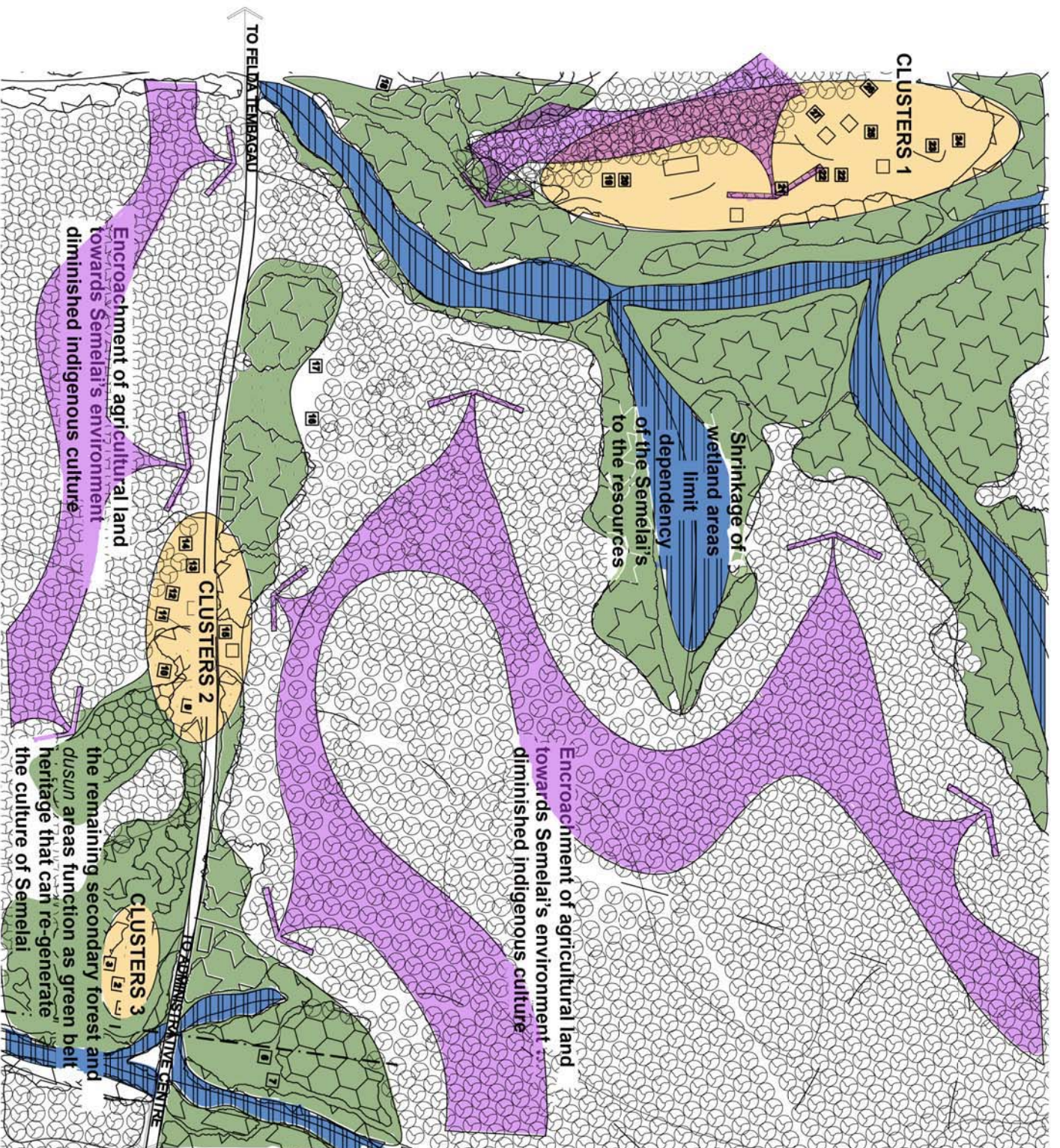
LEGEND:

- Lake
- Secondary Forest
- Rubber & Palm oil Plantation
- Dusun (Miksd of Herba, Fruit, & Forest Species Trees)
- Houses
- Stream
- Tube sedge Plant Dominated Area

THE ETHNOBOTANY OF SEMELAI COMMUNITY AT TASEK BERA, PAHANG, MALAYSIA: AN ETHNOGRAPHIC APPROACH FOR RESETTLEMENT

EXISTING SCHEMATIC LAYOUT
 KAMPUNG PELAWAN
 POS ISKANDAR,
 TASEK BERA, PAHANG.

Scale	Drawn	Checked	Date
MTS	MZK	SPR	JULY 2009



LEGEND:

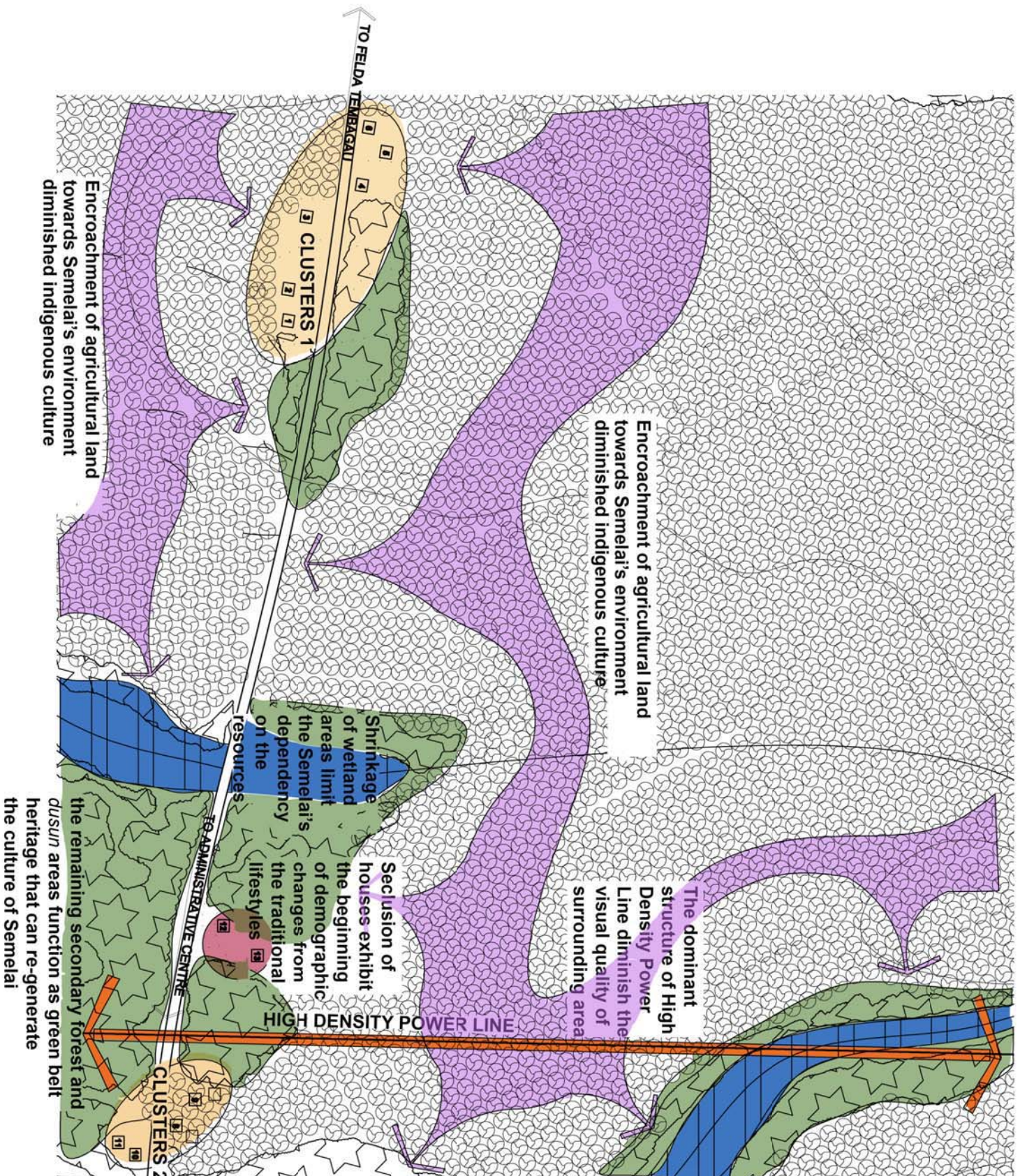
- Lake
- Secondary Forest
- Rubber & Palm oil Plantation
- Dusun (Mixed of Herbs, Fruit, & Forest Species Trees)
- Houses
- Stream
- Tube sedge Plant Dominated Area
- Boundary of Kampung (Village)

THE ETHNOBOTANY OF SEMELAI COMMUNITY AT TASEK BERA, PAHANG, MALAYSIA: AN ETHNOGRAPHIC APPROACH FOR RESETTLEMENT

EXISTING SCHEMATIC LAYOUT
KAMPUNG PELAWAN
POS ISKANDAR,
TASEK BERA, PAHANG.

Scale	Drawn	Checked	Date
1:500	MZK	SPR	JULY 2009

THESIS SUBMITTED FOR THE DEGREE OF DOCTORATE OF PHILOSOPHY IN LANDSCAPE ARCHITECTURE IN THE SCHOOL OF ARCHITECTURE, LANDSCAPE ARCHITECTURE AND URBAN DESIGN UNIVERSITY OF ADELAIDE



LEGEND:

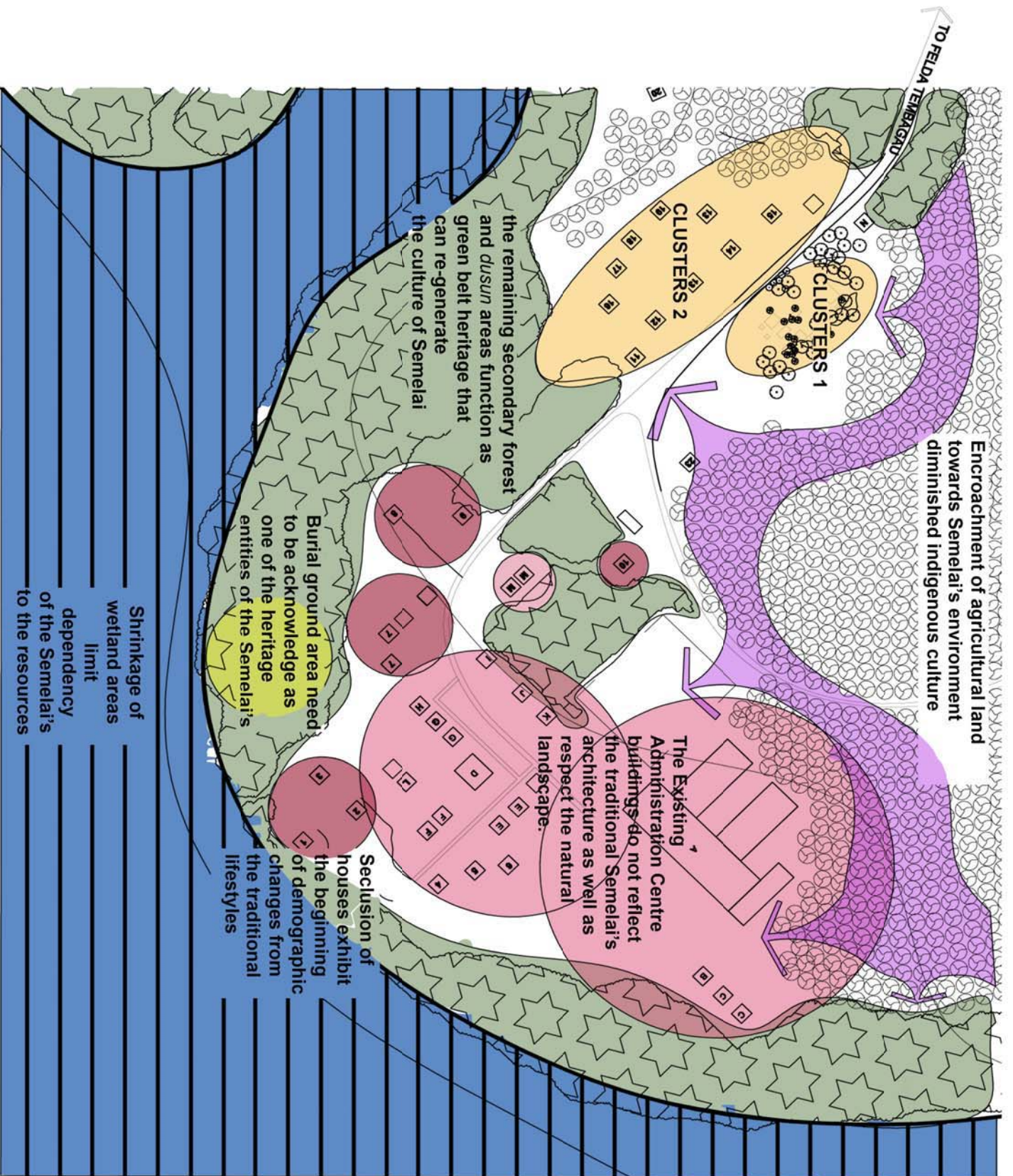
- Lake
- Secondary Forest
- Rubber & Palm oil Plantation
- Dusun (Mixed of Herbs, Fruit, & Forest Species Trees)
- Houses
- Stream
- Tube sedge Plant Dominated Area
- Boundary of Kampung (Village)

THE ETHNOBOTANY OF SEMELAI COMMUNITY AT TASEK BERA, PAHANG, MALAYSIA: AN ETHNOGRAPHIC APPROACH FOR RESETTLEMENT

EXISTING SCHEMATIC LAYOUT KAMPUNG LENEQ POS ISKANDAR, TASEK BERA, PAHANG.

Scale	Drawn	Checked	Date
NTS	MZK	SPR	JULY 2009

THESIS SUBMITTED FOR THE DEGREE OF DOCTORATE OF PHILOSOPHY IN LANDSCAPE ARCHITECTURE IN THE SCHOOL OF ARCHITECTURE AND URBAN DESIGN UNIVERSITY OF JOHORE



Encroachment of agricultural land towards Semelai's environment diminished indigenous culture

the remaining secondary forest and *dusun* areas function as green belt heritage that can re-generate the culture of Semelai

Burial ground area need to be acknowledge as one of the heritage entities of the Semelai's

The Existing Administration Centre buildings do not reflect the traditional Semelai's architecture as well as respect the natural landscape.

Seclusion of houses exhibit the beginning of demographic changes from the traditional lifestyles

Shrinkage of wetland areas limit dependency of the Semelai's to the resources

LEGEND:

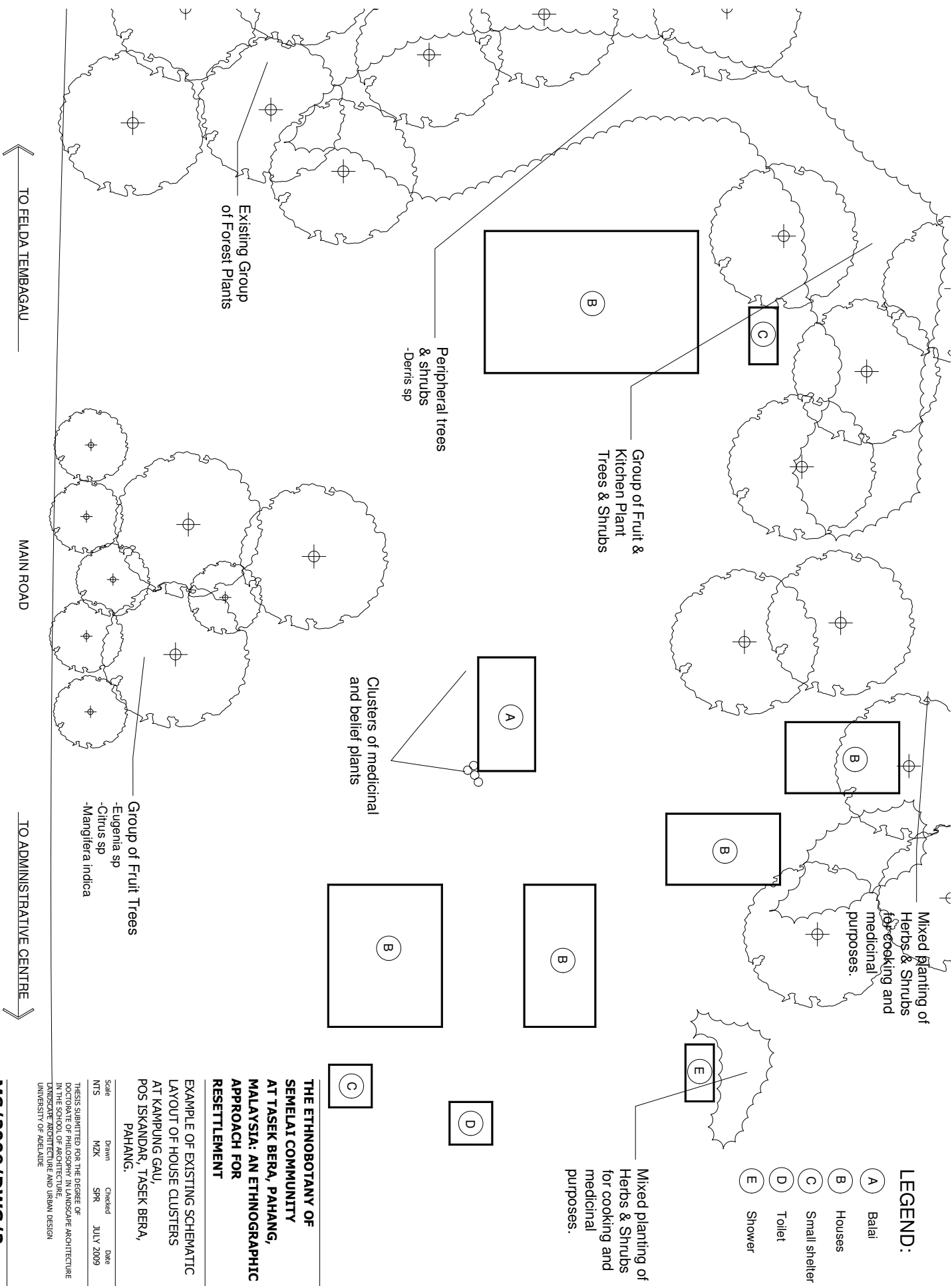
- Lake
- Secondary Forest
- Rubber & Palm oil Plantation
- Dusun (Mixed of Herbs, Fruit, & Forest Species Trees)
- Houses
- Stream
- Tube sedge Plant Dominated Area
- Boundary of Kampung (Village)

THE ETHNOBOTANY OF SEMELAI COMMUNITY AT TASEK BERA, PAHANG, MALAYSIA: AN ETHNOGRAPHIC APPROACH FOR RESETTLEMENT

EXISTING SCHEMATIC LAYOUT
 KAMPUNG GAU
 POS ISKANDAR,
 TASEK BERA, PAHANG.

Scale	Drawn	Checked	Date
MKS	MZX	SPR	JULY 2009

THESIS SUBMITTED FOR THE DEGREE OF
 DIPLOMA IN ARCHITECTURE
 IN THE SCHOOL OF ARCHITECTURE
 LANDSCAPE ARCHITECTURE AND URBAN DESIGN
 UNIVERSITY OF ABERDEEN



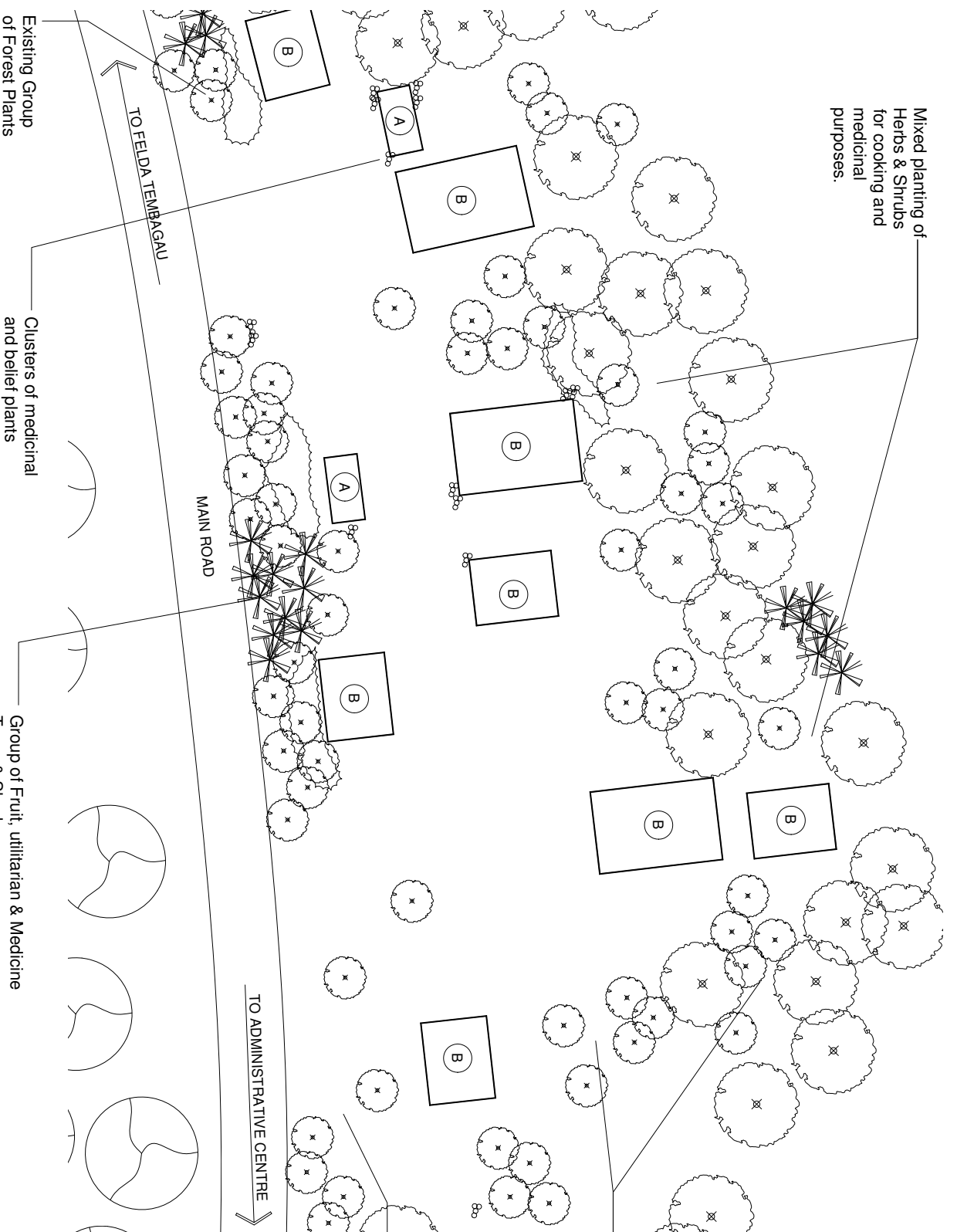
THE ETHNOBOTANY OF SEMELAI COMMUNITY AT TASEK BERA, PAHANG, MALAYSIA: AN ETHNOGRAPHIC APPROACH FOR RESETTLEMENT

EXAMPLE OF EXISTING SCHEMATIC LAYOUT OF HOUSE CLUSTERS AT KAMPUNG GAU, POS ISKANIDAR, TASEK BERA, PAHANG.

Scale	Drawn	Checked	Date
NTS	MZK	SPR	JULY 2009

THIS IS SUBMITTED FOR THE DEGREE OF DOCTORATE OF PHILOSOPHY IN LANDSCAPE ARCHITECTURE IN THE SCHOOL OF ARCHITECTURE, ENVIRONMENTAL ARCHITECTURE AND URBAN DESIGN UNIVERSITY OF ADELAIDE

Mixed planting of Herbs & Shrubs for cooking and medicinal purposes.



LEGEND:

- (A) Balai
- (B) Houses
- (C) Small shelter
- (D) Toilet
- (E) Shower

Group of Fruit Trees
 -Eugenia sp
 -Citrus sp
 -Mangifera indica

Group of Fruit, utilitarian & Medicine Trees & Shrubs
 -Eugenia sp
 -Citrus sp
 -Mangifera indica

Group of Fruit, utilitarian & Medicine Trees & Shrubs
 -Pandanus sp.
 -Citrus sp
 -Mangifera indica
 -Eugenia sp.
 -Hibiscus tiliaceus

Clusters of medicinal and belief plants

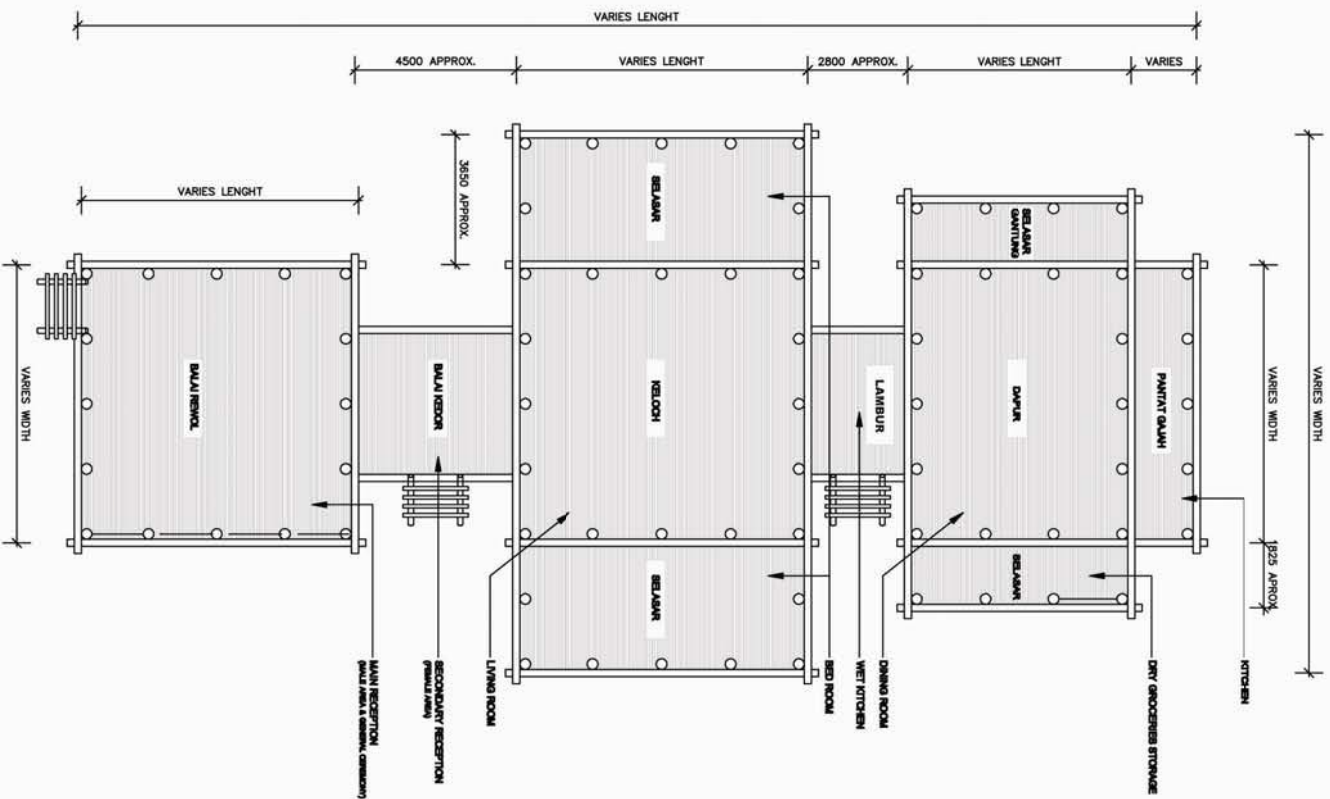
Existing Group of Forest Plants

THE ETHNOBOTANY OF SEMELAI COMMUNITY AT TASEK BERA, PAHANG, MALAYSIA: AN ETHNOGRAPHIC APPROACH FOR RESETTLEMENT

EXAMPLE OF EXISTING SCHEMATIC HOUSE CLUSTERS AT KAMPUNG PAYA KEPONG, POS ISKANDAR, TASEK BERA, PAHANG.

Scale	Drawn	Checked	Date
MKS	MZK	SPR	JULY 2009

THESES SUBMITTED FOR THE DEGREE OF DOCTORATE OF PHILOSOPHY IN THE SCHOOL OF ARCHITECTURE, LANDSCAPE ARCHITECTURE AND URBAN DESIGN, UNIVERSITY OF ADELAIDE



**NOTES:
TYPES OF WOOD**

- Tihang (Column)- Chengal, Tembusu Bukit
- Teladuk (Stud)- Chengal, Tembusu Bukit
- Seradik (Beam)- Sengkateb, Pengrawan, Betor, Meranti Sarang Purnai, Bangkak
- Penangkas (Beam)- Sengkateb, Pengrawan, Betor, Meranti Sarang Purnai, Bangkak
- Gelegar (Jost)- Anak Sengkateb, Betor, Nilbong
- Benu- Sengkateb, Betor Padi, Chedong
- Lantai (Floor Board)- Buluh
- Tunyuke Langit (Finial/ Ridge Pole)- Sengkateb, Meranti, Betor.

THE ETHNOBOTANY OF SEMELAI COMMUNITY AT TASEK BERA, PAHANG, MALAYSIA: AN ETHNOGRAPHIC APPROACH FOR RESETTLEMENT

TRADITIONAL HOUSE OF ORANG ASLI SEMELAI- TYPICAL FLOOR PLAN

Scale	Drawn	Checked	Date
1:200	KZK	SPR	JULY 2009

THESES SUBMITTED FOR THE DEGREE OF DOCTORATE OF PHILOSOPHY IN LANDSCAPE ARCHITECTURE IN THE SCHOOL OF ARCHITECTURE, LANDSCAPE ARCHITECTURE AND URBAN DESIGN UNIVERSITY OF ABERDEEN

**NOTES:
TYPES OF WOOD**

Tihsang (Column)- Chengal, Tembusu
Bukit

Teladuk (Stud)- Chengal, Tembusu
Bukit

Seradik (Bearer)- Sengkateb,
Pengrawan, Betor, Meranti Sarang
Punai, Bangkak

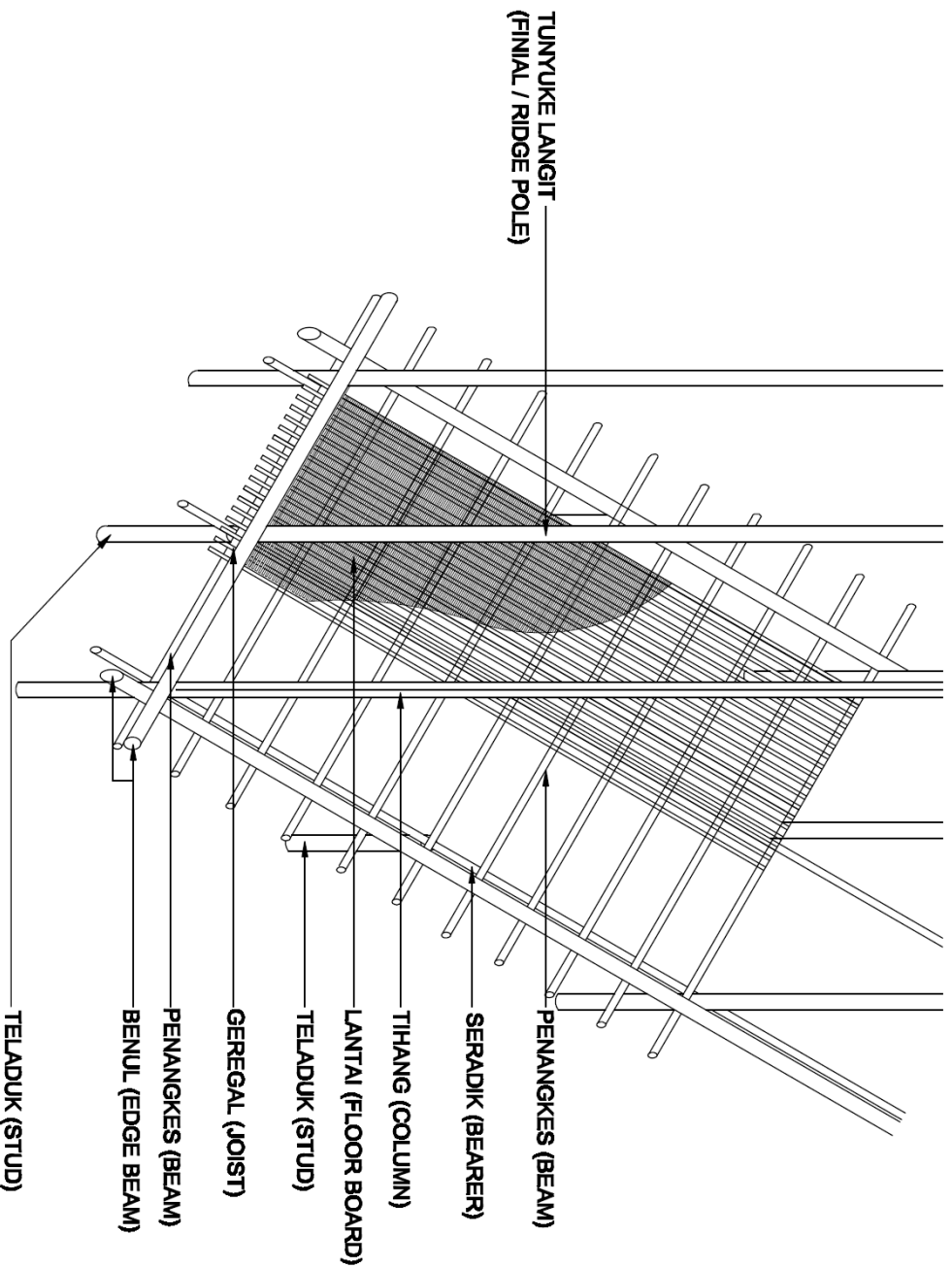
Penangkkes (Beam)- Sengkateb,
Pengrawan, Betor, Meranti Sarang
Punai, Bangkak

Gelegar (Joist)- Anak Sengkateb,
Betor, Nilbong

Benui (Edge Beam)- Sengkateb,
Betor Padi, Chedong

Lantai (Floor Board)- Buluh

Tunyuke Langkit (Final/ Ridge Pole)-
Sengkateb, Meranti, Betor.



**THE ETHNOBOTANY OF
SEMELAI COMMUNITY**

AT TASEK BERA, PAHANG,
MALAYSIA: AN ETHNOGRAPHIC
APPROACH FOR
RESETTLEMENT

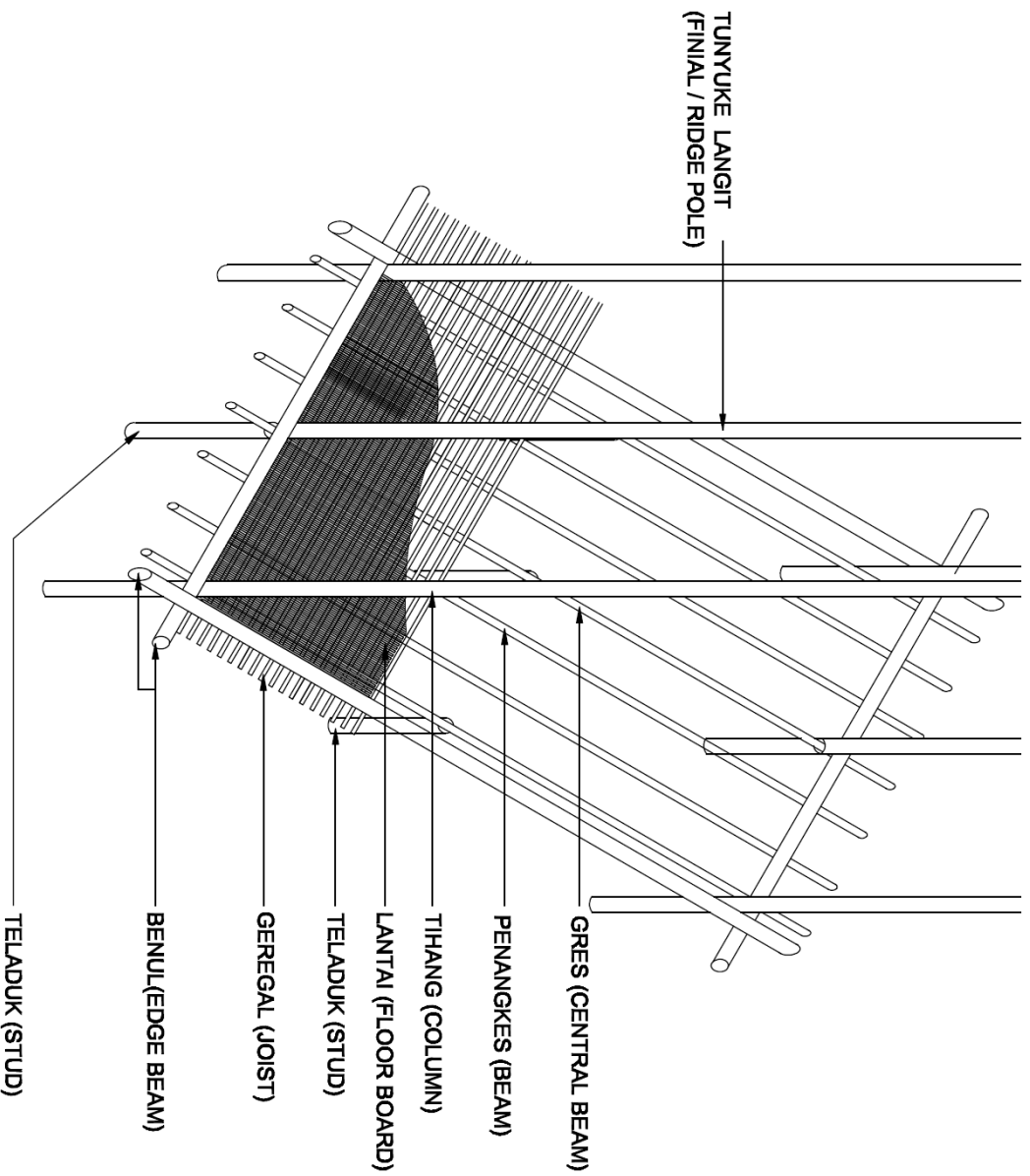
TRADITIONAL HOUSE OF
ORANG ASLI SEMELAI-
TYPICAL DETAIL OF

TAKAH RAKIT FLOOR CONSTRUCTION

Scale	Drawn	Checked	Date
NTS	MZX	SPR	JULY 2009

THESE SUBMITTED FOR THE DEGREE OF
MAGISTER OF ARCHITECTURE IN LANDSCAPE ARCHITECTURE
TO FACULTY OF ARCHITECTURE AND URBAN DESIGN
UNIVERSITY OF ABERDEEN

MS/2009/DWG/6



NOTES:
TYPES OF WOOD

- Tihang (Column)- Chengal, Tembusu Bukit
- Teladuk (Stud)- Chengal, Tembusu Bukit
- Seradik (Bearing)- Sengketeb, Pengrawan, Bator, Meranti Sarang Purnai, Bangkak
- Penangkés (Beam)- Sengketeb, Pengrawan, Bator, Meranti Sarang Purnai, Bangkak
- Galegar (Joist)- Arak Sengketeb, Bator, Nilbong
- Benuk(Edge Beam)- Sengketeb, Bator Padi, Chedong
- Lantai (Floor Board)- Buluh
- Tunyuke Langit (Final / Ridge Pole)- Sengketeb, Meranti, Bator.

THE ETHNOBOTANY OF SEMELAI COMMUNITY AT TASEK BERA, PAHANG, MALAYSIA: AN ETHNOGRAPHIC APPROACH FOR RESETTLEMENT

TRADITIONAL HOUSE OF ORANG ASLI SEMELAI- TYPICAL DETAIL OF TAKAH PARAK LABUK FLOOR CONSTRUCTION

Scale	Drawn	Checked	Date
NTS	MDK	SPK	JULY 2009

THESES SUBMITTED FOR THE DEGREE OF DOCTORATE OF PHILOSOPHY IN LANDSCAPE ARCHITECTURE IN LANDSCAPE ARCHITECTURE AND URBAN DESIGN UNIVERSITY OF ADELAIDE

NOTES:
TYPES OF WOOD

Tiang (Column)- Chengal, Tembusu
Bukit

Teladuk (Stud)- Chengal, Tembusu
Bukit

Seradik (Bearer)- Sengketab,
Pengrawan, Bator, Meranti Sarang
Punai, Bangkak

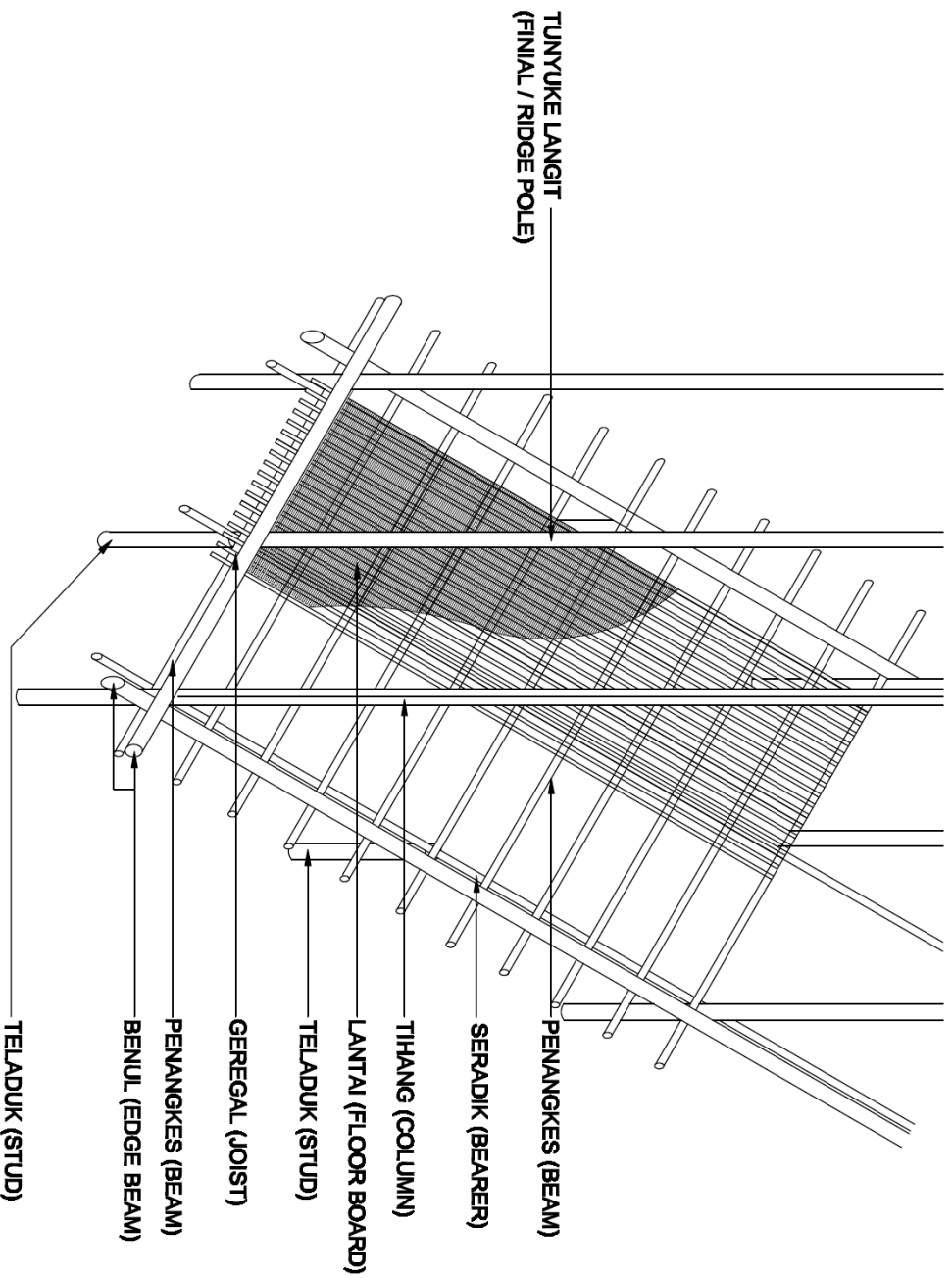
Penangkés (Beam)- Sengketab,
Pengrawan, Bator, Meranti Sarang
Punai, Bangkak

Galagar (Joist)- Anak Sengketab,
Bator, Nilbong

Benui (Edgebeam)- Sengketab,
Bator Padi, Chedong

Lantai (Floor Board)- Buluh

Tunyuke Langit (Finial/ Ridge Pole)-
Sengketab, Meranti, Bator.

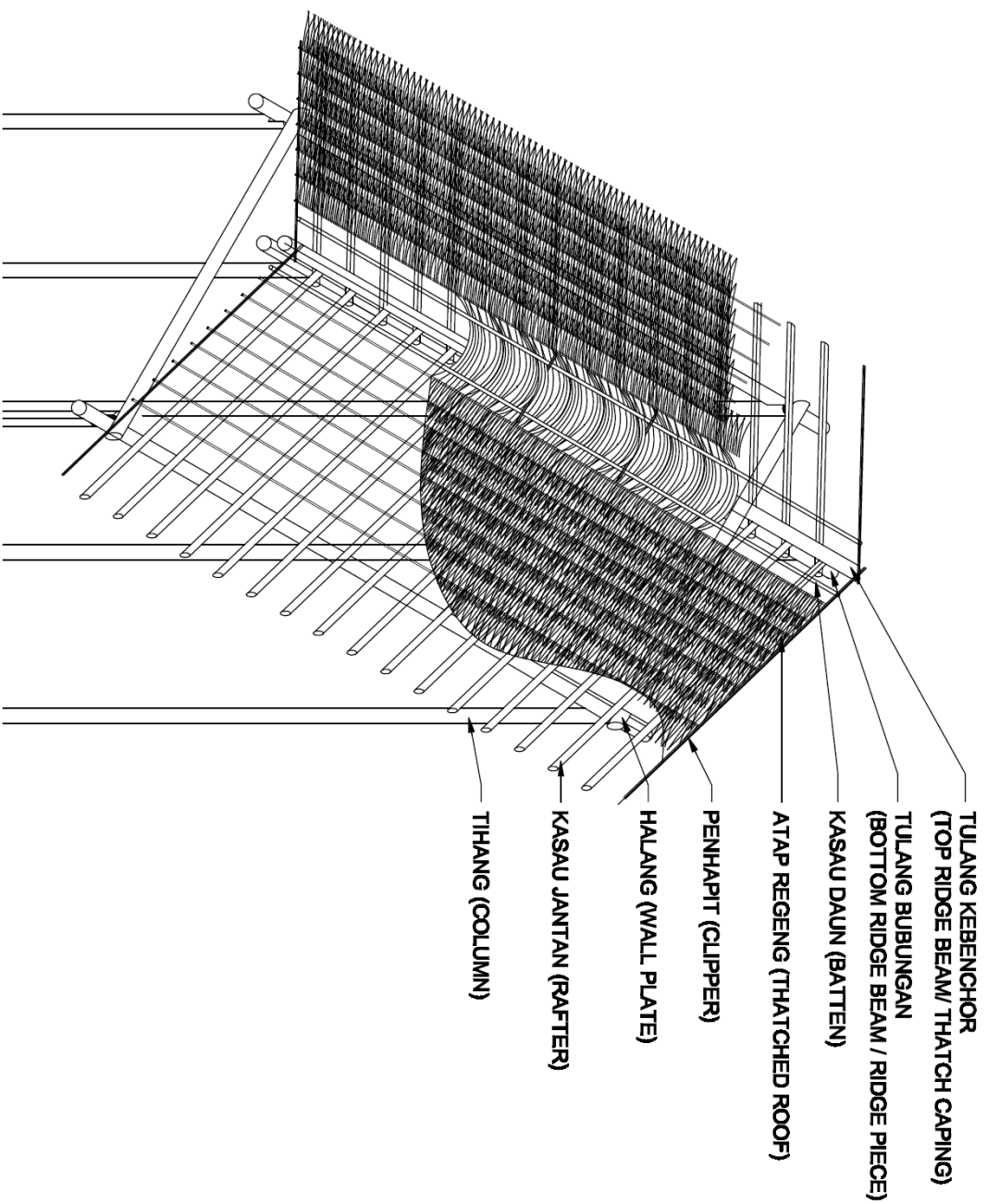


**THE ETHNOBOTANY OF
SEMELAI COMMUNITY
AT TASEK BERA, PAHANG,
MALAYSIA: AN ETHNOGRAPHIC
APPROACH FOR
RESETTLEMENT**

**TRADITIONAL HOUSE OF
ORANG ASLI SEMELAI-
TYPICAL DETAIL TAKAH GAJUNGAN
FLOOR CONSTRUCTION**

Scale	Drawn	Checked	Date
NTS	MZX	SRC	JULY 2009

THESES SUBMITTED FOR THE DEGREE OF
DOCTORATE OF PHILOSOPHY IN LANDSCAPE ARCHITECTURE
BY
MURUGAN KANNAN
UNIVERSITY OF AGRICULTURE
UNIVERSITY OF AGRICULTURE



**NOTES:
TYPES OF WOOD**

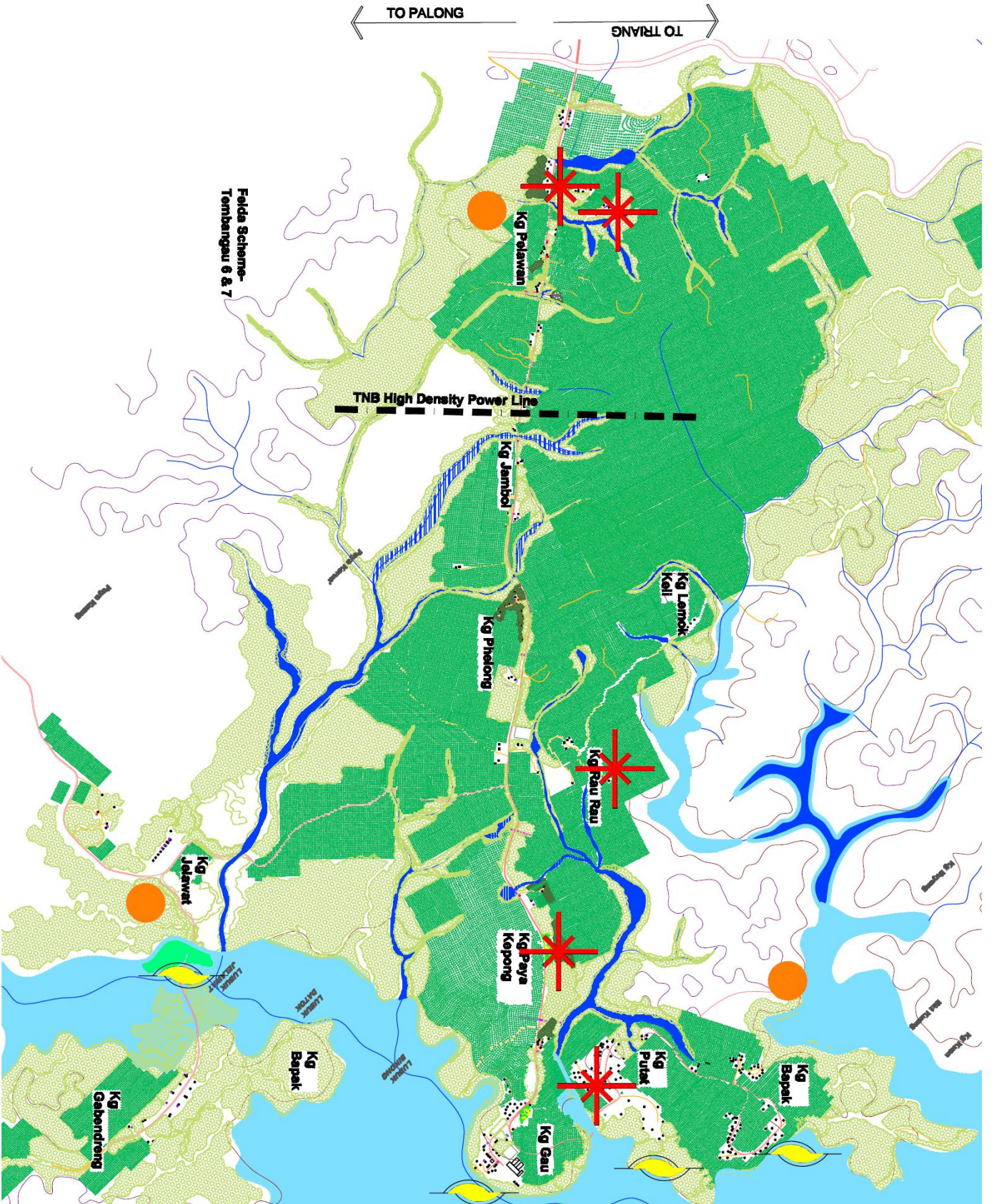
- Tihang (Column)- Chengal, Tembusu Bukit
- Halang (Wall Plate)- Sengkatoh, Beto
- Kasau Jantian (Rafter)- Sengkatoh, Beto.
- Tulang Bubungan (Ridge Piece)- Sengkatoh, Pengrawan, Beto, Meranti Sarang Purai, Bangkak
- Gelegar (Jost)- Anak Sengkatoh, Beto, Nilbong
- Tulang Kebenchor (Thatch Caping)- Sengkatoh, Pengrawan, Beto, Meranti Sarang Purai, Bangkak
- Lantai (Floor Board)- Buluh
- Tunyuke Langit (Finial/ Ridge Pole)- Sengkatoh, Meranti, Beto.

THE ETHNOBOTANY OF SEMELAI COMMUNITY AT TASEK BERA, PAHANG, MALAYSIA: AN ETHNOGRAPHIC APPROACH FOR RESETTLEMENT

TRADITIONAL HOUSE OF ORANG ASLI SEMELAI- TYPICAL DETAIL OF ROOF CONSTRUCTION

Scale	Drawn	Checked	Date
MKS	MZK	SFR	JULY 2009

THESES SUBMITTED FOR THE DEGREE OF DOCTORATE OF PHILOSOPHY IN LANDSCAPE ARCHITECTURE AND URBAN DESIGN, LANDSCAPE ARCHITECTURE AND URBAN DESIGN UNIVERSITY OF ADELAIDE



TO PALONG ← → TO TRANG

Felda Scheme-
Tembengau 6 & 7

TNB High Density Power Line

LEGEND:

- Lake
- Secondary Forest
- Rubber & Palm oil Plantation
- Dusun (Mixed of Herbs, Fruit, & Forest Species Trees)
- Houses
- Stream
- Tube sedge Plant Dominated Area
- Key Role & Expert Persons house
- The remaining Burial ground
- Water access

THE ETHNOBOTANY OF SEMELAI COMMUNITY AT TASEK BERA, PAHANG, MALAYSIA: AN ETHNOGRAPHIC APPROACH FOR RESETTLEMENT

EXISTING SCHEMATIC LAYOUT

POS ISKANDAR, TASEK BERA, PAHANG.

Scale	Drawn	Checked	Date
NTS	NZX	SPR	JULY 2009

THESES SUBMITTED FOR THE DEGREE OF
M.A. IN THE FACULTY OF LANDSCAPE ARCHITECTURE
LANDSCAPE ARCHITECTURE AND URBAN DESIGN
UNIVERSITY OF ADELAIDE