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iForest – Biogeosciences and Forestry – doi: 10.3832/ifor4339-017

Supplementary Material

Tab. S1 - Land use change sensitivity scenario defined for the Langat River basin**.**

Land use	Sensitivity scenario					
	Low	**Medium**	**High**	**Extreme 1**	**Extreme 2**	**Extreme 3**
Forest	-20	-40	-60	-100	-100	-100
Agriculture	+20	+30	+40	+50	+100	-
Urban	0	+10	+20	+50	-	+100

Tab. S2 - Percent of changes of land use classes between 1984 and 2006 in the Langat Basin.

Land use class	Loss of area (%)	Gain of area (%)	Net change (%)
Water body	78.13	94.33	+ 16.20
Urban area	30.56	92.92	+ 62.36
Permanent crop	57.39	17.17	- 40.22
Swamp	94.92	95.25	+ 0.33
Short-term crop	98.62	95.75	- 2.87
Grassland	81.64	88.64	+ 7.00
Horticultural land	69.44	89.44	+ 20.00
Forest land	16.98	14.29	- 2.69
Animal husbandry	98.86	97.00	- 1.86

Tab. S3 - Transition area of each land use category to urban area and permanent crop to other land use between 1984-2006 in the Langat Basin.

	Transition category	Area (ha)	% of Contribution
Transition from other categories to urban area	Animal husbandry area	172.14	0.61
	Forest land	3752.31	13.34
	Horticultural land	296.89	1.055
	Idle grassland	446.58	1.588
	Short term crops	169.65	0.60
	Swamp	222.04	0.78
	Permanent crops	22923.03	81.51
	Water body	137.21	0.48
Transition from permanent crop to other categories	Animal husbandry area	147	-0.48
	Forest land	2333	-7.60
	Horticultural land	2670	-8.69
	Idle grassland	1714	-5.58
	Short- term crops	269	0.88
	Swamp	155	-0.50
	Urban area	22666	-73.79
	Water body	761	-2.48

Tab. S4 - The area (ha) of each land use category in the documented and predicted land use map of 2010 in the Langat Basin.

s/n	Land use category	Documented map	Predicted map
1	Animal husbandry area	197.09	284.42
2	Forest land	47879.39	48864.88
3	Horticultural land	5431.37	5491.25
4	Idle grassland	4428.46	4026.75
5	Short term crops	616.23	788.38
6	Swamp	878.20	1035.38
7	Permanent crops	32643.11	24395.01
8	Urban area	30427.65	36779.64
9	Water body	2163.06	2998.86

Tab. S5 - Error matrix and accuracy values of predicted (columns) and documented (rows) land use maps of 2010 in the Langat basin.

		Predicted land use map of 2010										
Land use class		**AH**	**FL**	**HL**	**IG**	**SC**	**SP**	**PC**	**UA**	**WB**	**Total**	**User accuracy**
Documented land use map of 2010	AH	10	0	52	7	0	1	7	2	0	79	12.65
	FL	18	18055	7	26	1	0	86	997	1	19191	94.08
	HL	0	18	1801	31	18	7	147	137	18	2177	82.72
	IG	3	92	39	1227	25	2	284	374	8	2054	59.73
	SC	0	9	37	79	66	4	36	15	1	247	26.72
	SP	0	0	0	7	0	307	5	26	7	352	0.19
	PC	47	765	103	183	90	25	10474	1390	7	13084	80.05
	UA	15	86	118	172	22	29	563	11113	78	12196	91.12
	WB	0	10	18	12	1	10	20	69	727	867	83.85
	Total	93	19039	2175	1744	223	385	11625	14124	847	88750	
Producer Accuracy		10.75	94.83	82.80	70.35	29.59	79.74	90.09	78.68	85.83	10.75	
Total Accuracy		49.32										

Chi Square = 445536.15; df = 81; P-Level = 0.0; Cramer's V = 0.75

Fig. S1 - Land use change trends between 1984 and 2006 in the Langat Basin.

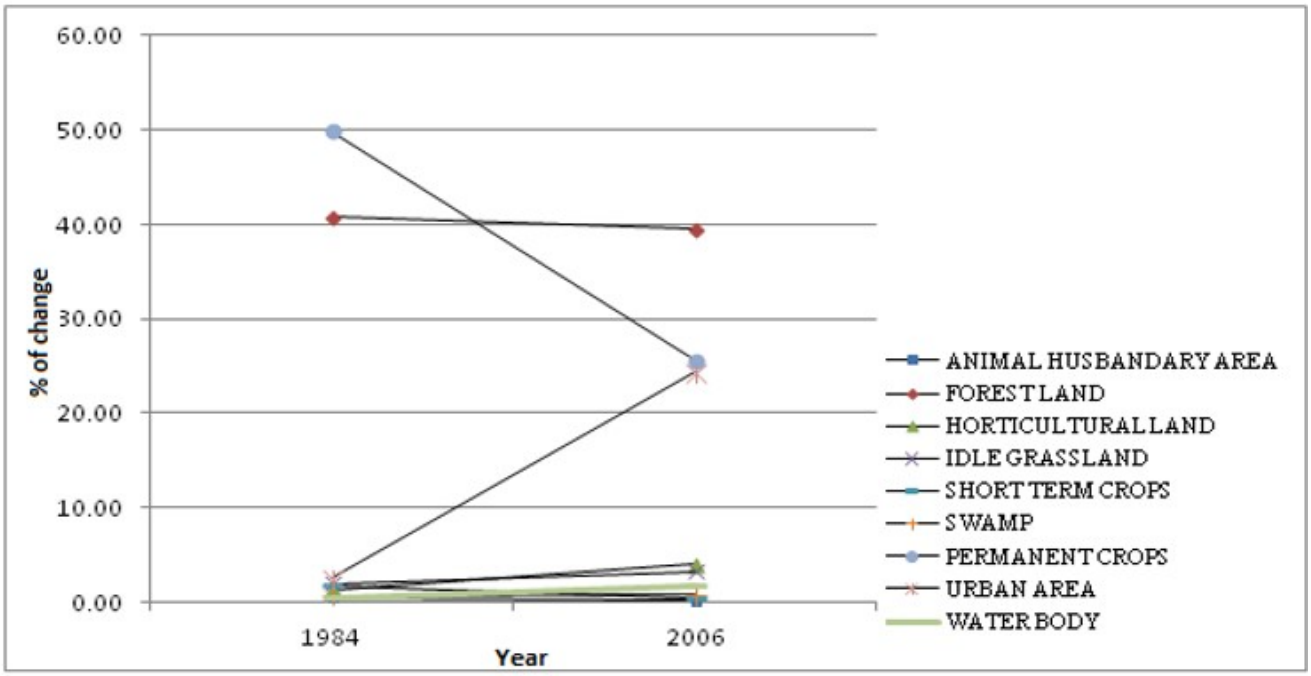

Fig. S2 - Contribution to net change (% of area) in urban area and permanent crop area.

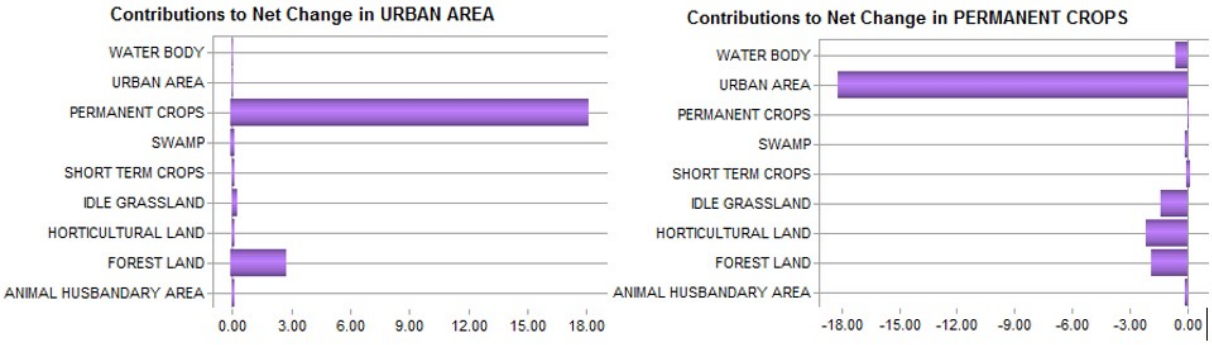

Fig. S3 - Predicted (a) and documented (b) land use map of 2010 in the Langat Basin.

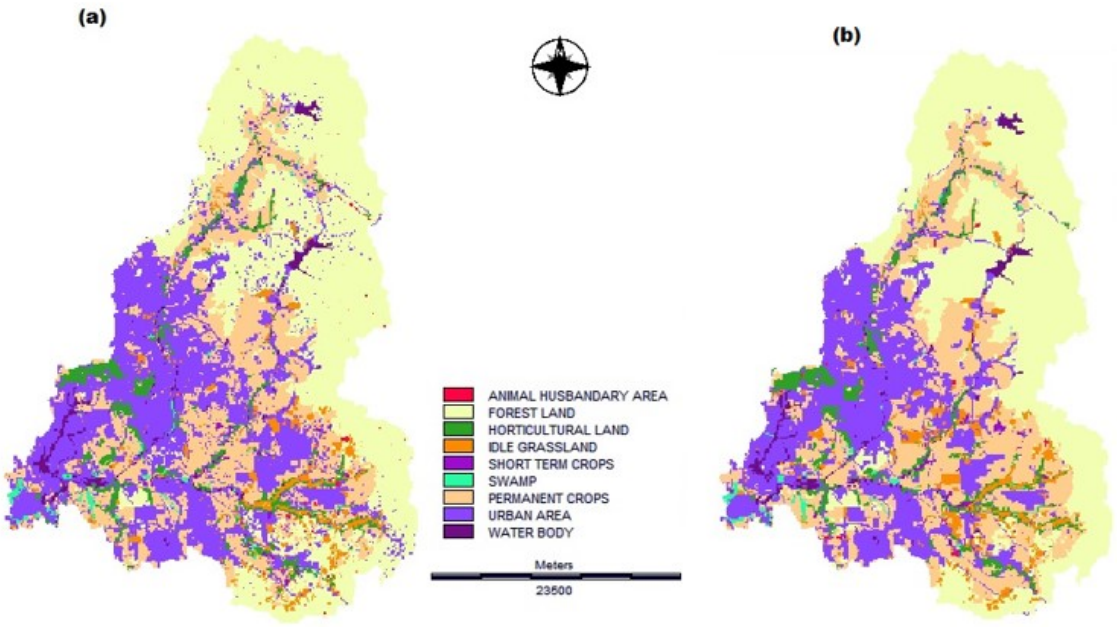

Fig. S4 - Projected land use map of 2030(a), 2050(b), 2080(c) for the Langat River basin.

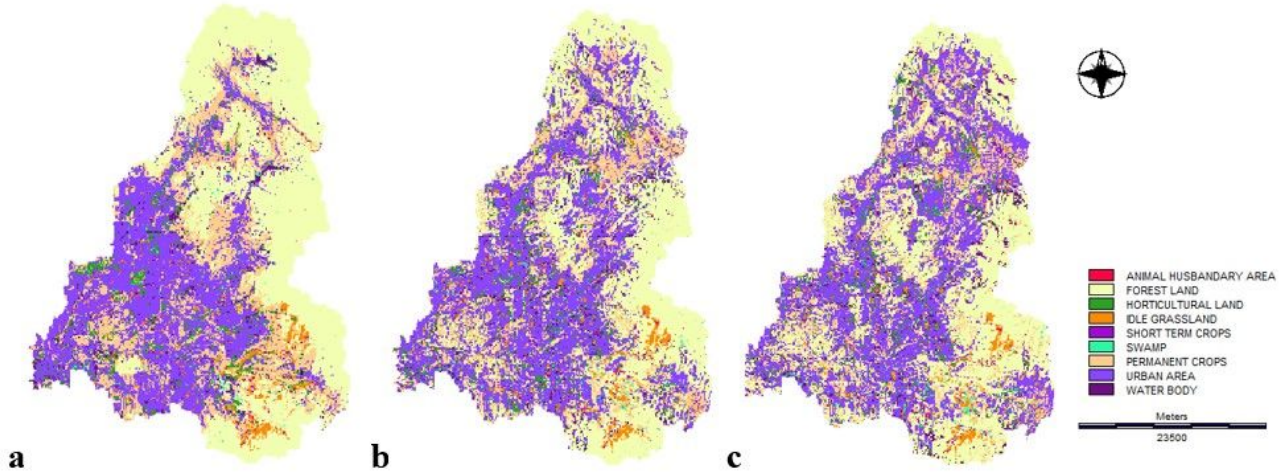

Fig. S5 - Gains and losses in each land use category between 2010, 2030,2050,2080.

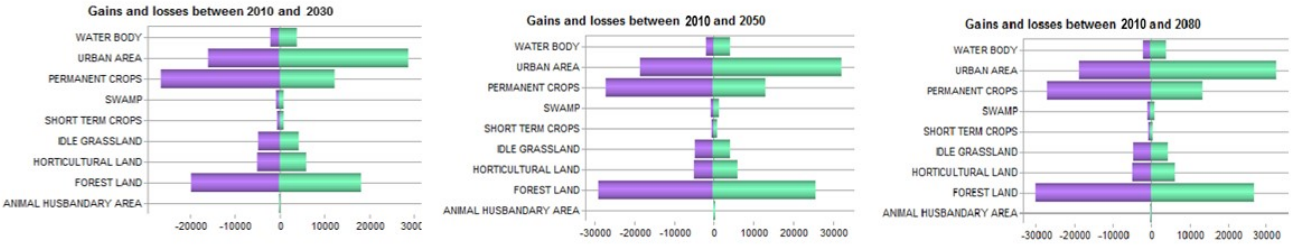

Fig. S6 - Land use map of the Langat basin based upon future scenarios.