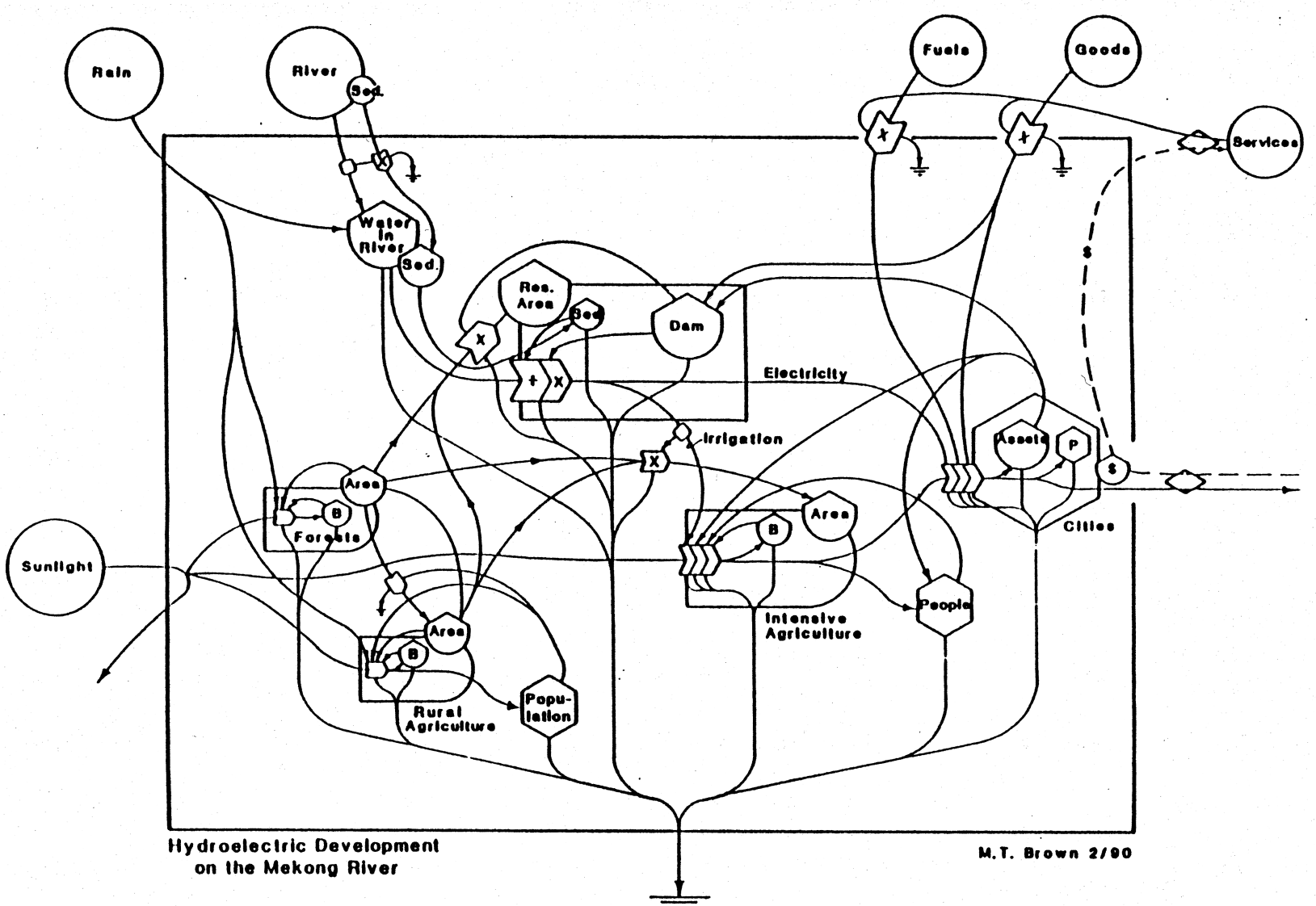

Figure 8. Energy diagram of relationships between urban and rural populations and the proposed hydroelectric dams on the Mekong River.

Table 4. EMergy Evaluation of Low Pa Mong Dam and Irrigation.

Note*	Item	Raw Units	Transformity (sej/unit)	Solar EMergy (E18 sej/yr)
1.	River Geopotential	5.68E+16.5	23564	1338.5
EMERGY BENEFITS				
2.	Electricity	3.62E+16 J	159000	5755.8
3.	Aquatic Product	9.30E+14 J	440	0.4
4.	Irrigation (Ag.)	1.15E+11 g	9.70E+08	112.1
	Total			5868.3
EMERGY COSTS				
5.	Operation and Maintenance	2.04E+07 $	3.46E+12	70.6
6.	Concrete	1.35E+11 g	7.00E+07	9.5
7.	Steel	2.31E+08 g	1.80E+09	0.4
8.	Machinery	6.66E+08 g	6.70E+09	4.5
9.	Services	3.78E+07 $	3.46E+12	130.8
10.	Ag. Prod. (Rice)	1.23E+11 g	9.70E+08	119.3
11.	Ag. Prod. (Maize)	7.42E+14 J	4.75E+04	35.2
12.	Resettlement	4.00E+06 $	3.46E+12	13.7
13.	Irrigation (Services)	4.80E+06 $	3.46E+12	16.6
14.	Social Disruption	2.56E+04 p/yr	2.98E+15	76.2
15.	Sediments	5.91E+16 J	6.30E+04	3759.6
	Total			4236.4

BENEFIT COST RATIO WITHOUT SEDIMENT: $\frac{58.7E20}{4.8E20} = \frac{12.3}{1}$

BENEFIT COST RATIO WITH SEDIMENT: $\frac{58.7E20}{42.4E20} = \frac{1.39}{1}$

* References and calculations are found in footnotes in Appendix C.

Table 5. EMergy Evaluation of Upper Chiang Khan Dam.

Note *	Item	Raw Units	Transformity (sej/unit)	Solar EMergy (E18 sej/yr)
1.	River Geopotential	5.19E+16 J	23564	1222.1
EMERGY BENEFITS				
2.	Electricity	3.20E+16 J	159000	5088.0
3.	Aquatic Product	6.10E+14 J	440	0.3
4.	Irrigation (Ag.)	3.68E+10 g	9.7E+08	35.7
	Total			5124.0
EMERGY COSTS				
5.	Operation and Maintenance	7.40E+06 $	3.46E+12	25.6
6.	Concrete	1.10E+11 g	7.00E+07	7.7
7.	Steel	1.19E+08 g	1.80E+09	.3
8.	Machinery	4.16E+08 g	6.70E+09	2.8
9.	Services	2.770E+07 $	3.46E+12	95.8
10.	Ag. Prod. (Rice)	2.30E+09 g	9.70E+08	2.2
11.	Ag. Prod. (Maize)	1.14E+15 J	4.75E+04	54.2
12.	Resettlement	2.63E+06 $	3.46E+12	9.1
13.	Irrigation (Services)	1.54E+06 $	3.46E+12	5.3
14.	Social Disruption	1.68E+04 p/yr	2.98E+15	50.1
15.	Sediments	5.65E+16 J	6.30E+04	3559.5
	Total			3812.6

BENEFIT COST RATIO WITHOUT SEDIMENTS: $\frac{51.24E20}{2.53E20} = \frac{20.3}{1}$

BENEFIT COST RATIO WITH SEDIMENTS: $\frac{51.24E20}{38.12E20} = \frac{1.34}{1}$

* References and calculations are found in footnotes in Appendix C.

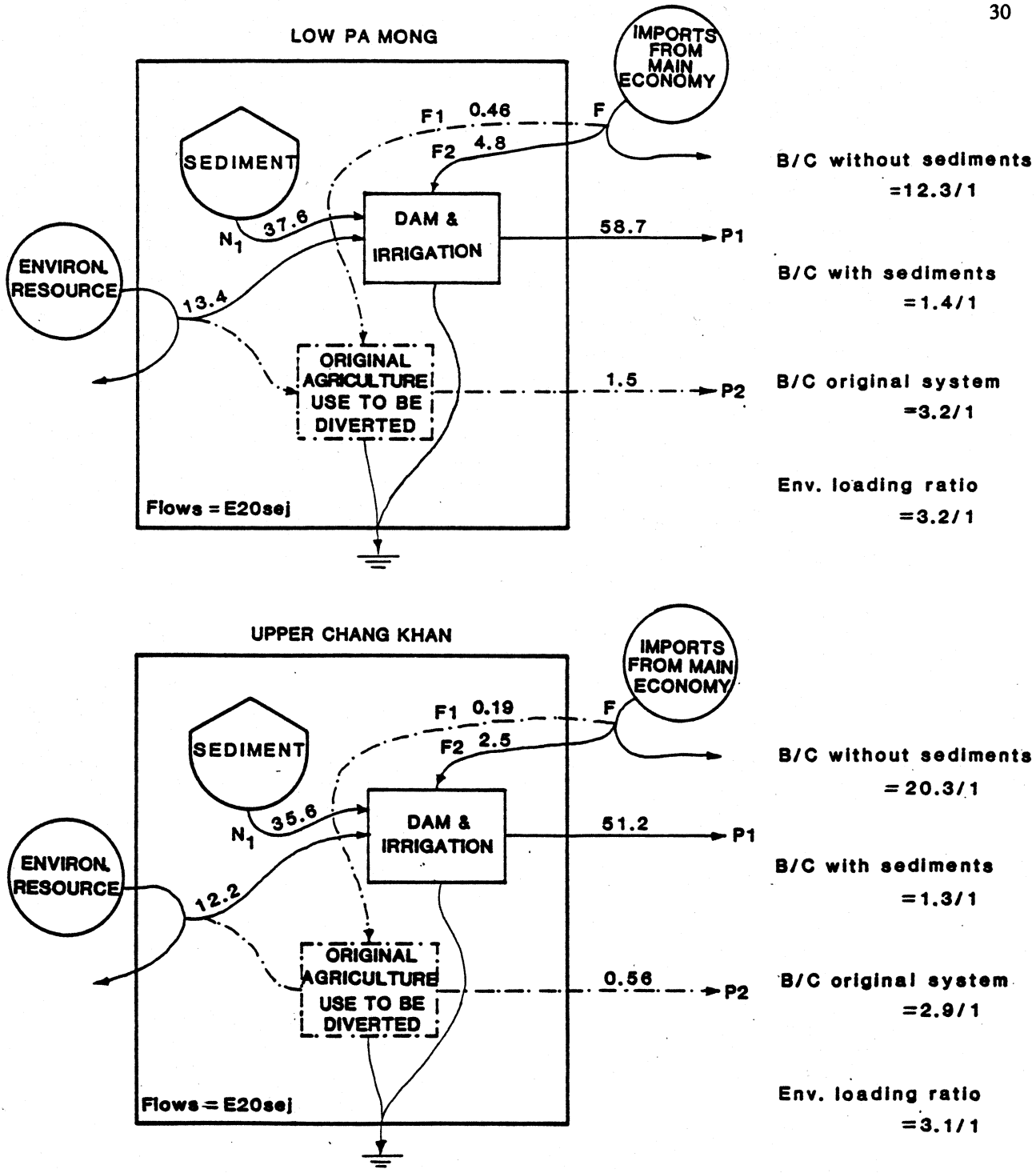

Figure 9. Summary diagrams of the EMergy analysis of the proposed Low Pa_Mong (top) and Upper Chiang Khan dam sites.