Agroforestry Innovations and Livelihood Enhancement in the shadow of lucrative urban centres:

A Socio-economic study

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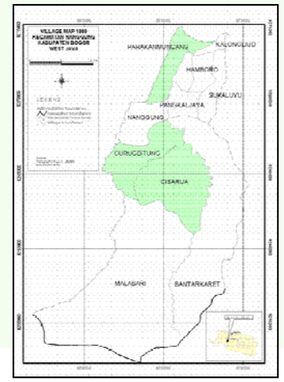
Introduction

A baseline study was conducted to document the social and economic impacts of adopting trees, managing agroforestry systems and improving tree product marketing practices as part of the USAID funded 'Agroforestry Innovation and Livelihood Enhancement Program' implemented by World Agroforestry Centre – ICRAF Southeast Asia and Winrock International, with assistance from RMI (the Indonesian Institute for Forest and Environment).

The data generated by this study will be used for farm-level economic analysis:
(a) Analysis of the progress of agroforestry system in social and economic term,
(b) Analysis of the financial return to the farm under different scenario, and
(c) Orientation to farm budget and financial analysis by a selected group of interested farmers for examining their management options including market linkages.

The Study Site

- The study carried out in three villages (Parakan Muncang, Curug Bitung,Cisarua), in Nanggung sub-district, West Java, Indonesia
- Total area of 109.99 km^2, 70.223 km^2 (63.8%) constitute of arable land
- Elevation: 200-1800 m above sea level
- Annual rainfall is varies between 3,000 mm to 4,000 mm
- The average annual temperature ranging between 22^o C and 34^o C



FINDINGS

DEMOGRAPHY

	Parakan Muncang n = 35		Curug Bitung n = 35		Cisarua n = 35		Sample Villages N = 105	
Family member								
1. Total household members (*persons*)	181		169		180		530	
2. Range (*persons/household*)	2 – 11		2 – 12		2 – 8		2 – 12	
3. Average household size	5		5		5		5	
4. Household Size								
1 - 4	19	54.30%	17	48.60%	14	40.00%	50	47.60%
5 - 8	10	28.60%	17	48.60%	21	60.00%	48	45.70%
9 <	6	17.10%	1	2.90%	0	0.00%	7	6.70%
5. Nuclear family	27	77.10%	26	74.30%	31	88.60%	84	80%
6. Extended family	8	22.90%	9	25.70%	4	11.40%	21	20%
Age Structure								
< 15	46	25.40%	62	36.70%	82	45.60%	190	35.80%
15 - 64	125	69.10%	103	60.90%	97	53.90%	325	61.30%
64 <	10	5.50%	4	2.40%	1	0.60%	15	2.80%
Labor Force								
~ Proportion of labor Force	135	74.60%	107	63.30%	98	54.40%	340	64.20%
~ Average labor force per household	4		3		3		3	
Dependency ratio	34.10%		57.90%		83.70%		55.90%	
Primary school enrolment rate	84.60%		75.00%		74.50%		77.1	

- Most of the respondents (73.3%) engaged in agriculture as their main occupation, but only 16% of families rely on agriculture as their main source of income
- One-fifth of the respondents also engage in other activities out side their farm for additional income.
- Educational attainment, 5.7 % of the respondents were illiterate, and most of the respondents (81.9%) never went beyond elementary level. Primary school enrollment rate is also low (77.1%).

LAND HOLDING

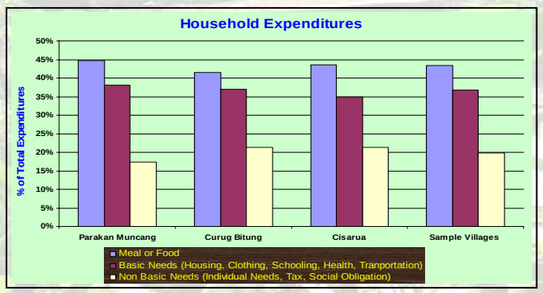
- Average landholding size: 0.75 hectare per household
- 57.1% hh controlling less than 0.25 hectare of land
- 21.3% of total agricultural land belong to others and is cultivated by means of renting in, sharecropping, or *Numpang*

	Parakan Muncang n	Parakan Muncang Total area (Ha)	Curug Bitung n	Curug Bitung Total area (Ha)	Cisarua n	Cisarua Total area (Ha)	Sample Villages n	Sample Villages Total area (Ha)
Number of surveyed households owning the land								
- Home yard	34	0.83	35	0.48	35	14,25	104	2.74
- Ricefiled	14	2.36	23	7.18	28	9.18	65	18.72
- Kebun and/or Tegal	32	12.04	35	17.74	29	13.75	96	43.53
Number of surveyed household controlling others' land								
- Homeyard	1	0.005	-	-	-	-	1	0.005
- Ricefiled	5	0.76	9	1.26	7	2.15	21	4.17
- Kebun and/or Tegal	3	0.28	10	1.77	20	7.6	33	9.65
Descriptive statistics of landholding size								
Mean	0.465		0.814		0.98		0.753	
Median	0.225		0.544		0.66		0.405	
Std. Deviation	0.665		0.758		1.053		0.862	
Range	0.02 – 2.73		0.112 – 3.85		0.055 – 4.52		0.02 – 4.52	

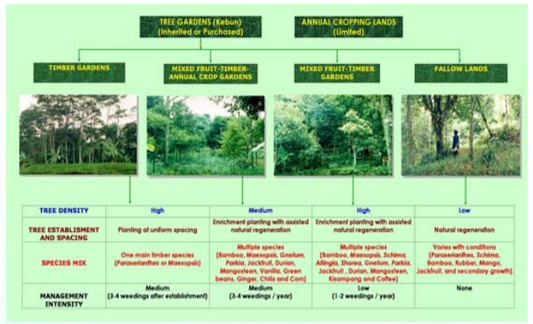
INCOME AND EXPENDITURE

- Agricultural activities alone contribute 31.2% to the total households' income
- Off-farm incomes contribute the most to the total hh income (61.5%)
- The share of agricultural income to total family income correlates to average landholding size
- Almost all income (43.5%) is spent on consumption

	Muncang n	Rp 000	%	Curug Bitung n	Rp 000	%	Cisarua n	Rp 000	%	Sample Villages n	Rp 000	%
Agricultural income	34	64,210	17.6	35	133,823	46	35	103,646	33.2	104	301,678	31.2
Off farm income	31	260,949	71.6	25	126,920	43.7	32	206,731	66.2	88	594,600	61.5
Other Income	21	39,222	10.7	14	22,740	7.8	11	8,896	2.9	46	70,858	7.3
Total households' income	35	364,381	100	35	290,683	100	35	312,073	100	105	967,136	100
Range (Rp 000/year)												
Minimum		325			577			620			325	
Maximum		37,667			24,399			24,547			37,667	
Average family income per household (Rp 000/year)		10,410			8,305			8,916			9,211	
Income per capita (Rp 000/year)		2,013			1,720			1,733			1,824	
Proportion of people below poverty line												
~ of Indonesia (Rp 1,158,144 capita^{-1} year^{-1})		30.4			31.4			36.7			32.8	
~ of West Java (Rp 1,157,460 capita^{-1} year^{-1})		30.4			31.4			36.7			32.8	



FARMING SYSTEM



- There are seven timber species and bamboo cultivated by the surveyed households. Bamboo is the most dominant species cultivated in their kebun, followed by Sengon (*Paraserianthes falcataria*) and Afrika (*Maesopsis eminii*).
- Some plots were occasionally used for annual crops cultivation, mostly tubers such as cassava, *Talas (Taro)*, sweet potato and *lengkuas* (*Alpinia galanga*), for own consumption and also for sale.

- Fruit is the key kebun component present in of 86.7% of the kebuns. Timber is a component of 36.8% of the kebuns; annual/seasonal crops a component of 28.3% of the kebuns.
- Among 31 fruits species cultivated by farmers, banana is most popular one (cultivated in 75.9% of kebuns), followed by petai (47.2% of kebuns), and then mango (39.2% of kebuns).

	Parakan Muncang	Curug Bitung	Cisarua	Total
Return gain from Fruits				
Number of plot involve	89%	88%	85%	87%
Sum (Rp. 000)	70%	59%	66%	64%
Returns gain from Timber				
Number of plot involve	18%	46%	38%	37%
Sum (Rp. 000)	13%	36%	30%	29%
Returns gain from Annual Crops				
Number of plot involve	36%	34%	18%	28%
Sum (Rp. 000)	18%	5%	4%	7%

MARKETING

Common Market Channels

Annual Crops	: Farmer	→	Collector/Merchant	→	Local Market			
Fruit	: Farmer	→	Collector/Merchant	→	Local Market			
Timber	: Farmer	→	Logger/Merchant	→	Sawmill	→	Merchant	→ Consumer/Industry
Bamboo	: Farmer	→	Logger/ Merchant	→	Construction Industry			

The study found that a low percentage of fruits harvested are marketed. Most of the yields of the key fruit species planted in the kebuns, were not sold. The reasons for this are:

- The quality of fruit produced is not very high and thus not marketable
- The fruit species produced do not match market demand
- Post-harvest handling is poor, and/or d) that farmers lack adequate market information and market access.

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