

Forest and People in Thailand

Household Strategies of Villagers Living in the Upper Nan Watershed Area

Vipak Jintana¹, Rachanee Maneekul², Nittaya Mianmit³,
Catherine Helen Traynor⁴ & Carsten Smith Olsen⁵

¹ Assistant Professor, Department of Forest Management, Faculty of Forestry, Kasetsart University, Bangkok 10900

² Ph.D. candidate, Department of Forest Management, Faculty of Forestry, Kasetsart University, Bangkok 10900

³ M.S. candidate, Department of Forest Management, Faculty of Forestry, Kasetsart University, Bangkok 10900

⁴ VSO at the Faculty of Forestry, Kasetsart University, Bangkok 10900

⁵ Associate Professor, KVL

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Objectives

To obtain an overview of NTFP sector in Thailand

To investigate how NTFP's can contribute to improve rural livelihoods on a sustainable basis

The study focused primarily on investigating subsistence and commercial uses of NTFP's in the context of rural livelihood strategies

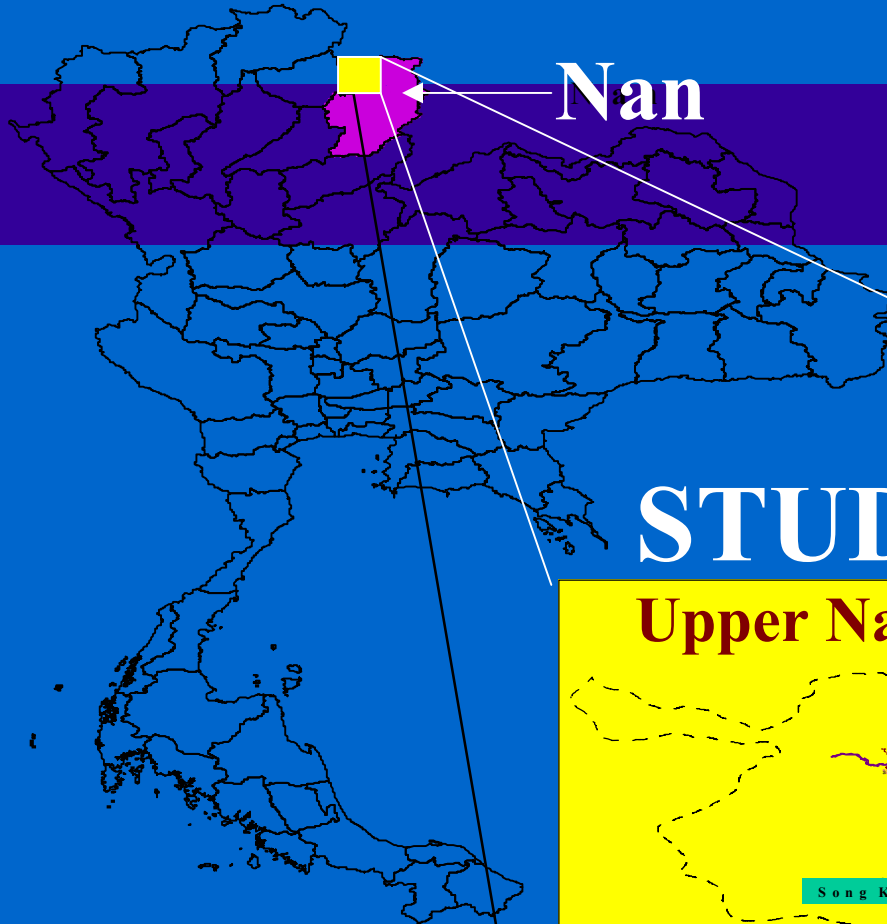
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Study Areas

Two villages in the Upper Nan Watershed Management Project (UNWMP) were selected for investigating the household strategies with a focus upon the harvesting and utilisation of NTFP's

San Charoen, a Mien village with 76 households, high incomes were generated from the trade of *Arenga pinnata* Merr. fruits

Huay Klaeb was Khamu village and had 78 households, the village that harvested the highest quantities of the major NTFP's in the UNWMP



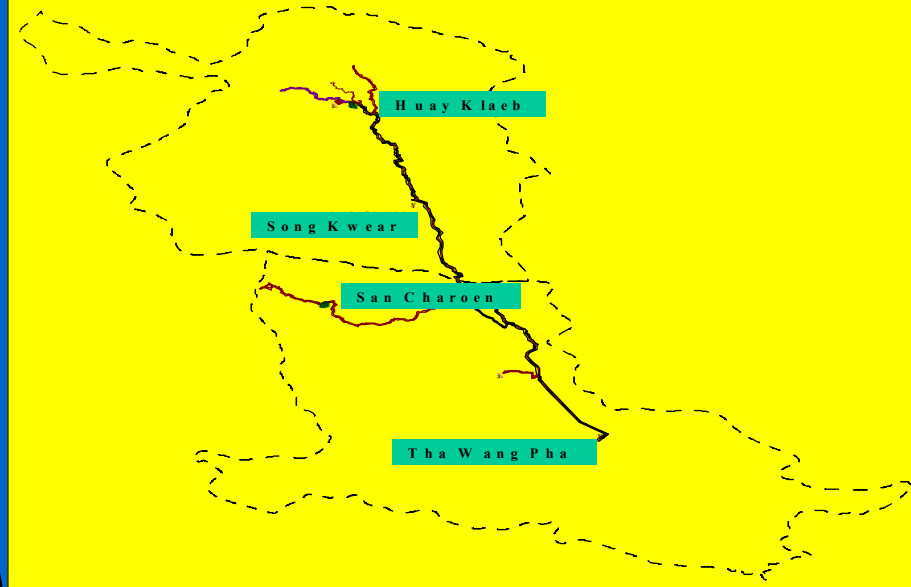
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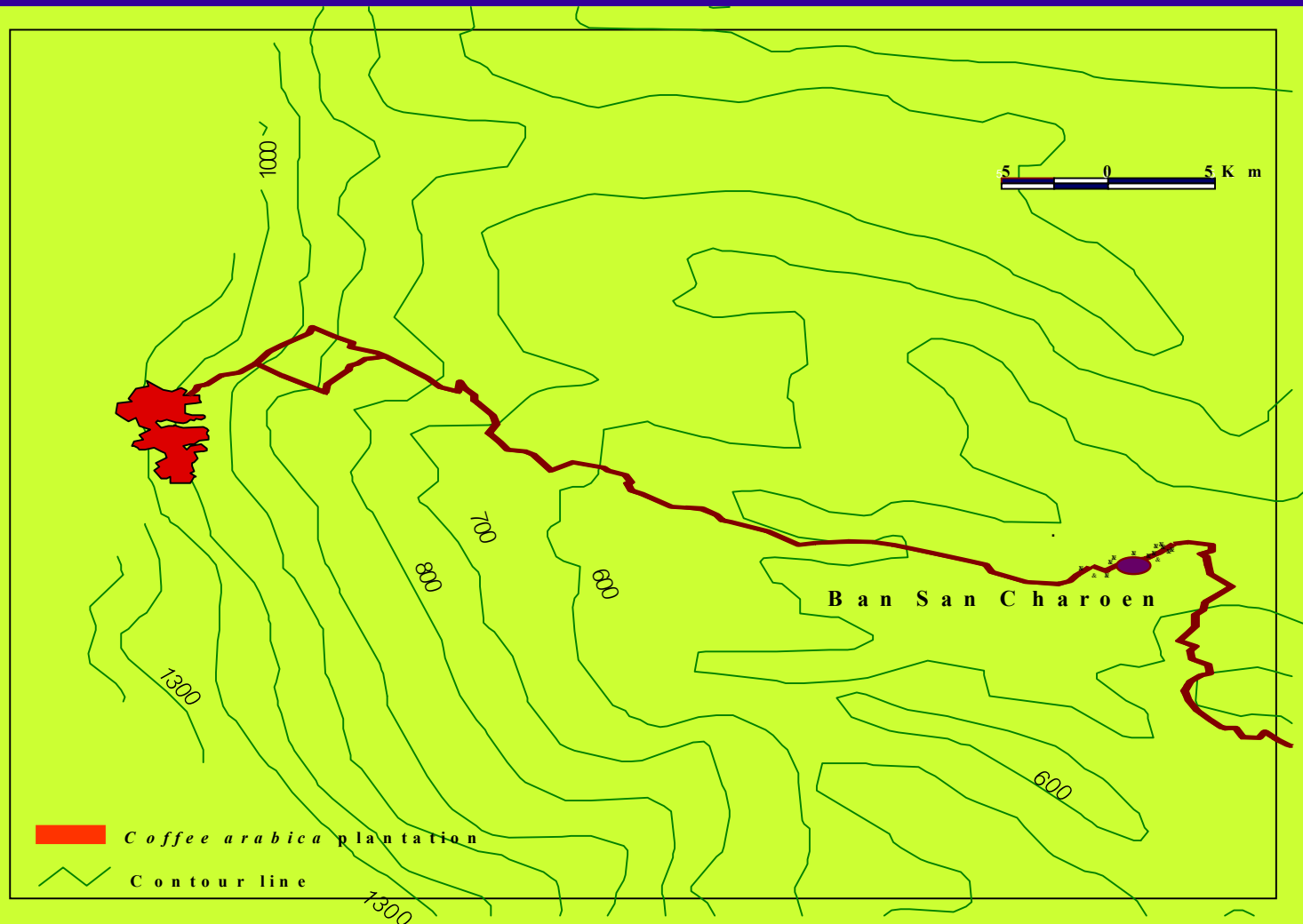
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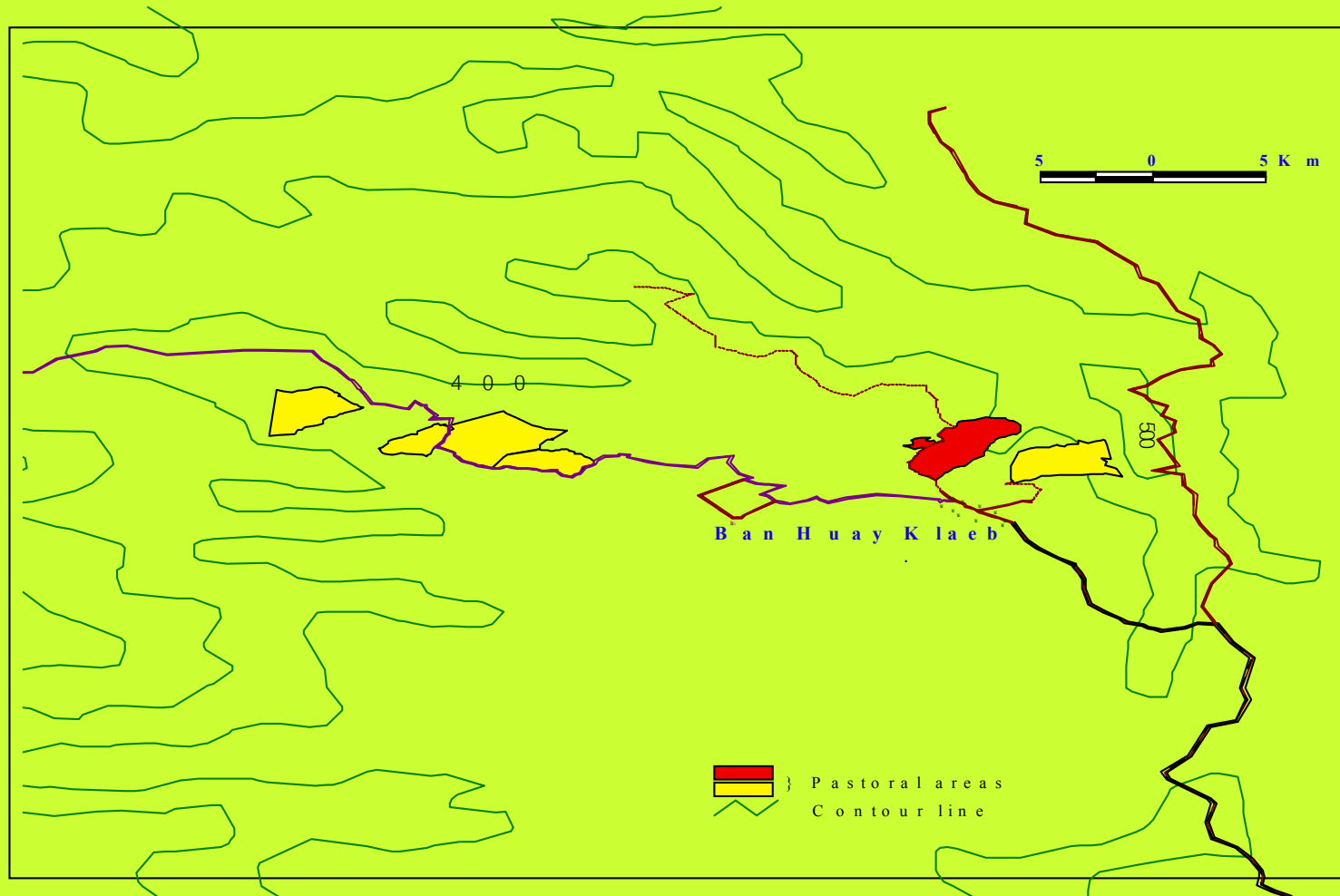
Upper Nan Watershed Area



Tracking way to cultivated area in San Charoen



Tracking way to pastoral area in Huay Klaeb



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Methodologies

Structured interview survey

Group discussions

Participatory and direct observation, and

Participatory mapping

The study was carried out between April 2000 to April 2001
General household demography, socio-economics, land tenure
and NTFP's harvesting and utilisation were investigated

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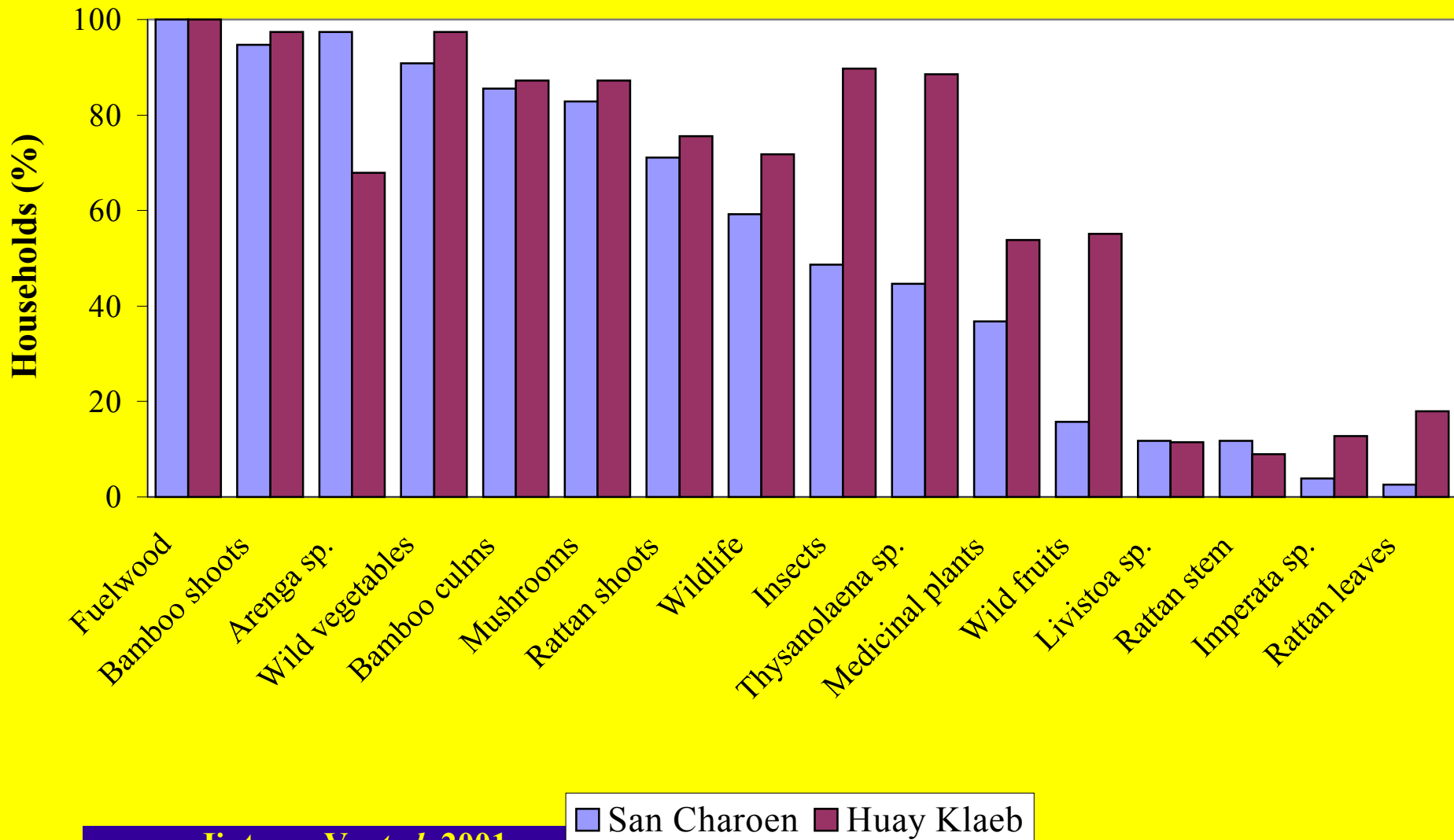
Main results (1)

The two villages displayed similar trends in the types of NTFP's and the percentage of households that collected them

A slightly greater variety and higher quantity of NTFP's were collected in Huay Klaeab

The only NTFP collected in substantially higher amounts in San Charoen was *Arenga pinnata* Merr.

Percentage of households that collected NTFPs



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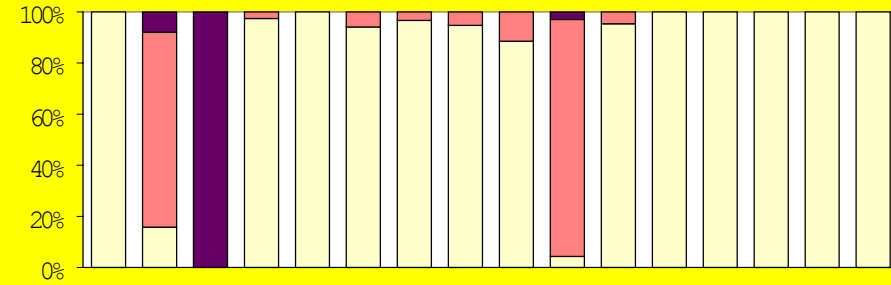
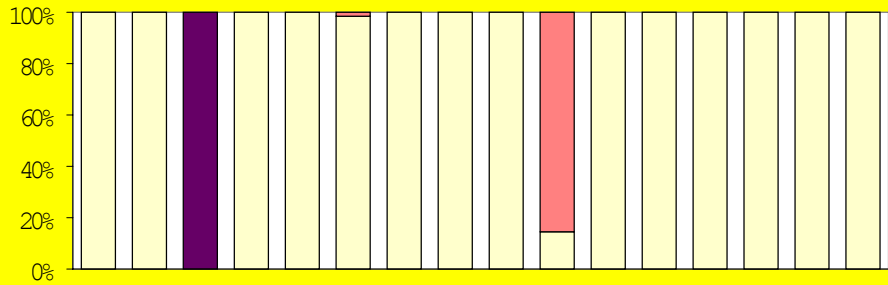
Main results (2)

In both villages most of the types/species of NTFP's were collected for household consumption and they contributed to subsistence at the household level

Some products such as bamboo shoots and *Thysanolaena maxima* Ktze were harvested for both household consumption and trade

The only species collected entirely for trading in both villages were the fruits of *Arenga pinnata* Merr.

Objectives of harvesting NTFP's



Fuelwood, Arenga, Mushroom, Bamboo Rattan, Wild Bee, Wild Honey, Wild Insect, Wild Divinoroot, Rattan, Thyrsol, Medicina, NTFPs

□ subsistence ■ subsistence and trade ■ trade

Fuelwood, Arenga, Mushroom, Bamboo Rattan, Wild Bee, Wild Honey, Wild Insect, Wild Divinoroot, Rattan, Thyrsol, Medicina, NTFPs

□ subsistence ■ subsistence and trade ■ trade

San Charoen

Huay Klaeb

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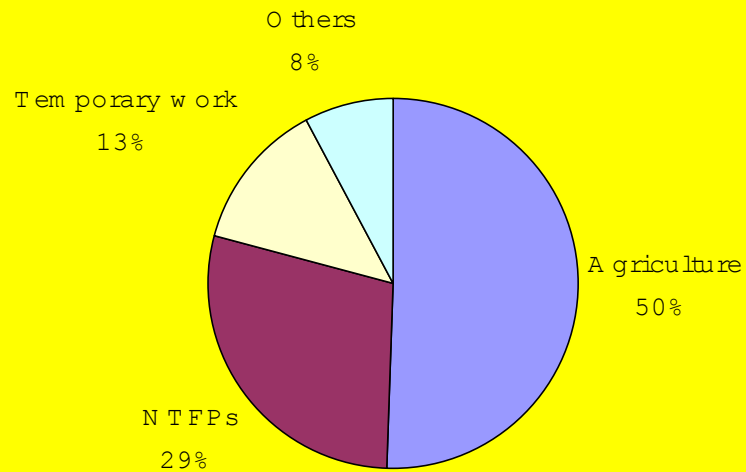
Main results (3)

Trading NTFP's was an important income generating activity and NTFP's contributed on average 29% or 36% of the total income of households in San Charoen and Huay Klaeb respectively

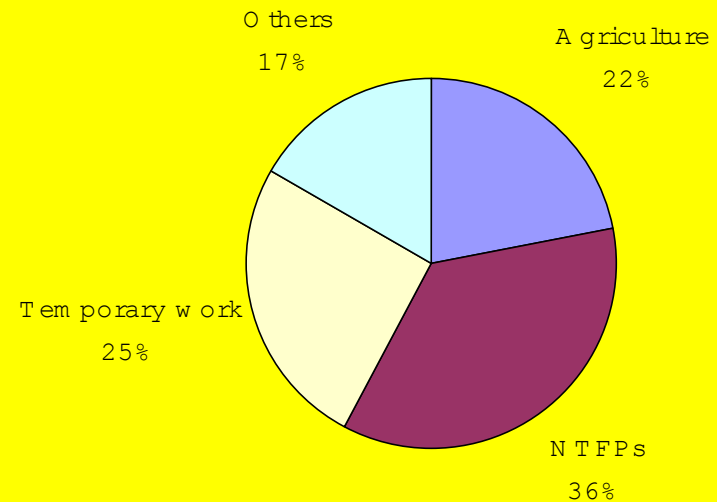
The strategies of harvesting NTFP's were closely related to the livelihoods and other occupations of the collectors

There were some specific products that collectors intended to harvest, however many NTFP's were harvested indirectly whilst the collectors were doing other activities e.g. cultivating their fields and travelling to and from their plots of land

Income sources of the respondents' households



San Charoen



Huay Klaeb

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Main results (4)

The main species harvested for consumption included bamboo shoots, rattan shoots, wild vegetables, mushrooms, insects and their products and wildlife

Some wild fruits and medical plants were also harvested

The villagers in Huay Klaeb tended to collect a wider variety of bamboo shoots, mushrooms, insects and medicinal plant species

Bamboo shoots for subsistence and commercial uses



Rattan stems and utilization



Jintana, V. et al. 2001

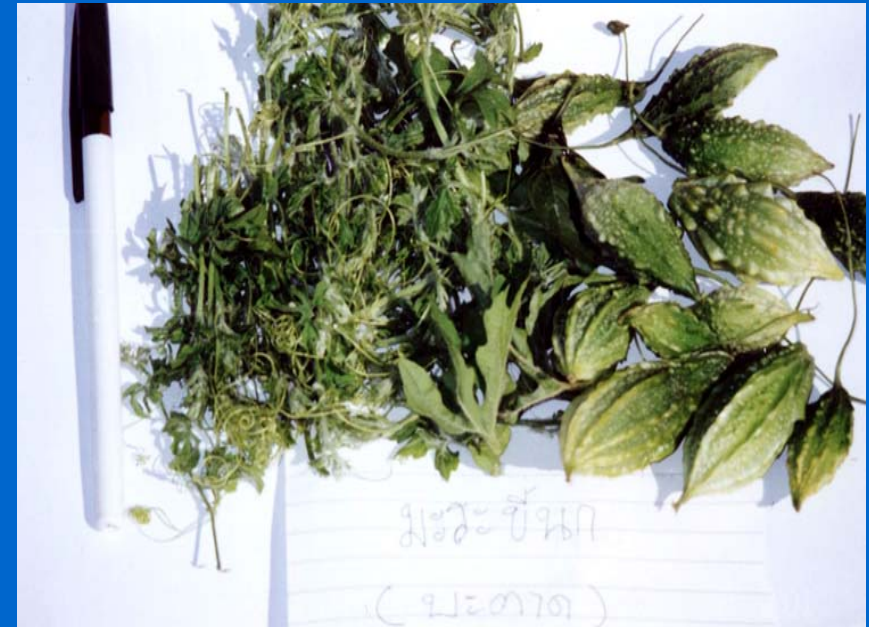


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Wild vegetable that collecting in the two villages



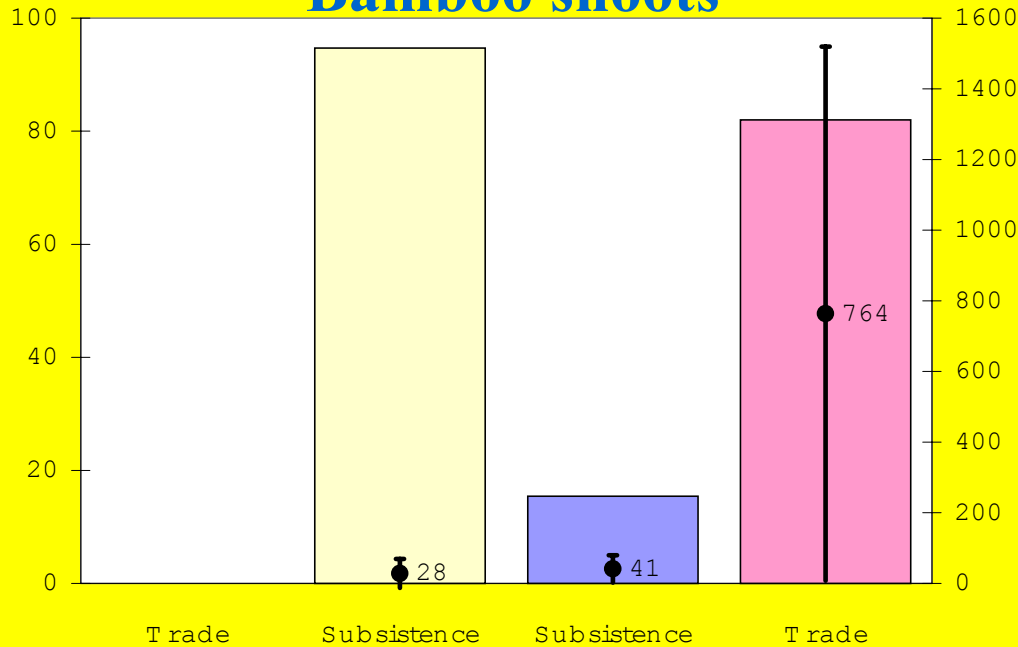
Amaranthus sp.
(Phak Kom)



Momordica charantia Linn
(Mara Pha)

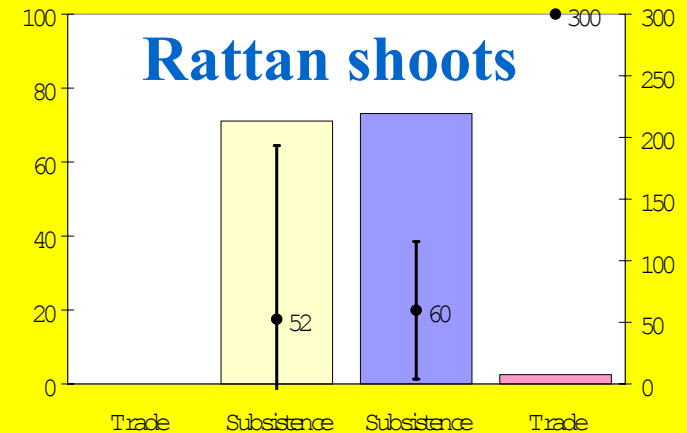
NTFPs for (mainly) households consumption

Bamboo shoots

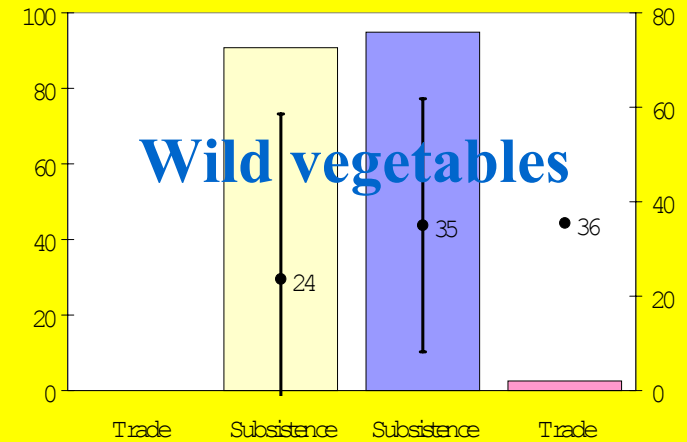


San Charoen Huay Klaeb

Rattan shoots

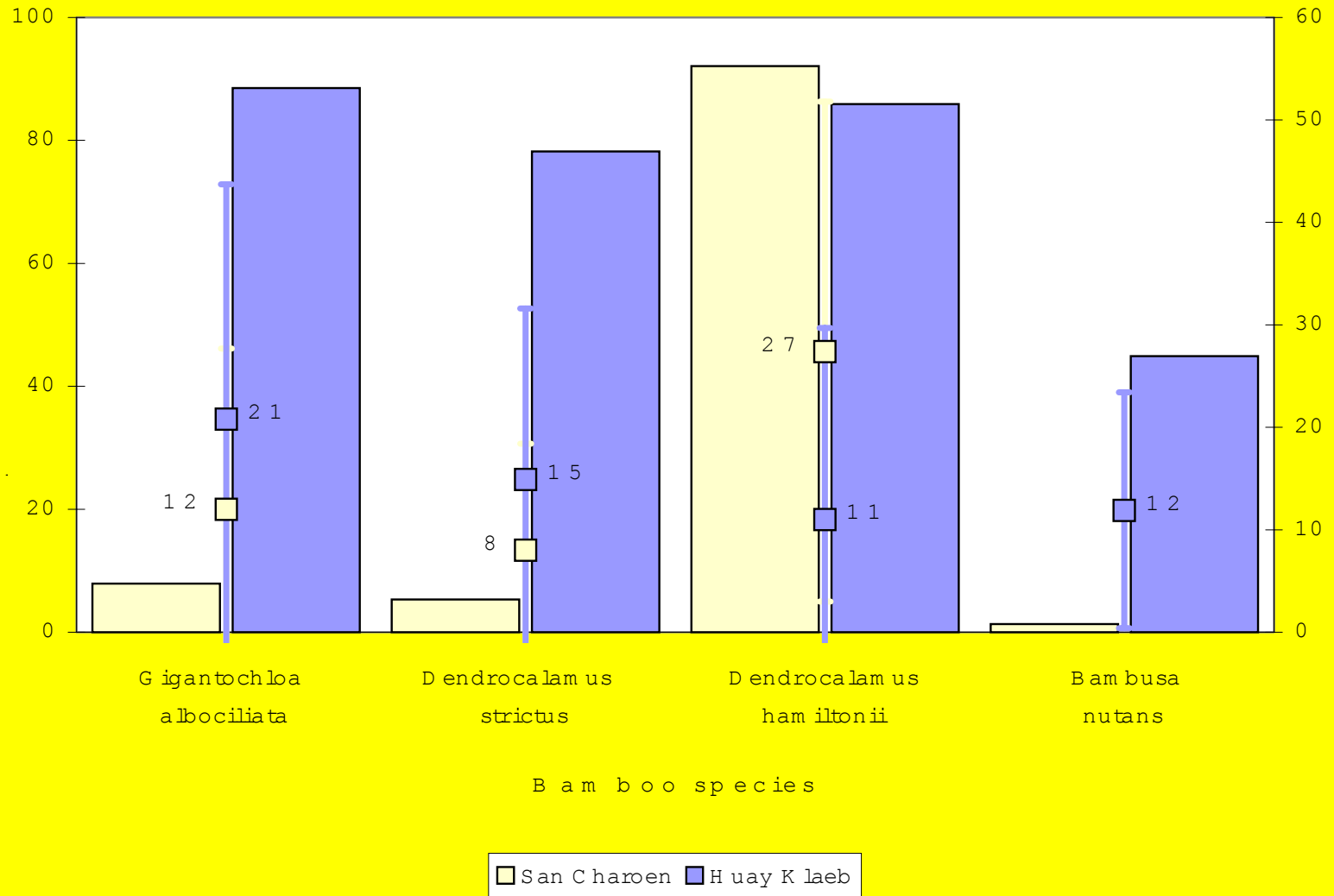


Wild vegetables



San Charoen Huay Klaeb

Percentage of hh and quantities of various bamboo species harvested



Various mushroom species that collecting in the two villages



Medicinal plants

“La Krai”



Piper ribesiooides wall.



Sphenodesme pantandra Jack

Insects and their products

Omphisa sp.



Mang Man



Oecophylla smaragdina



Jintana, V. et al. 2001

Apis dorsata



Aquatic animals



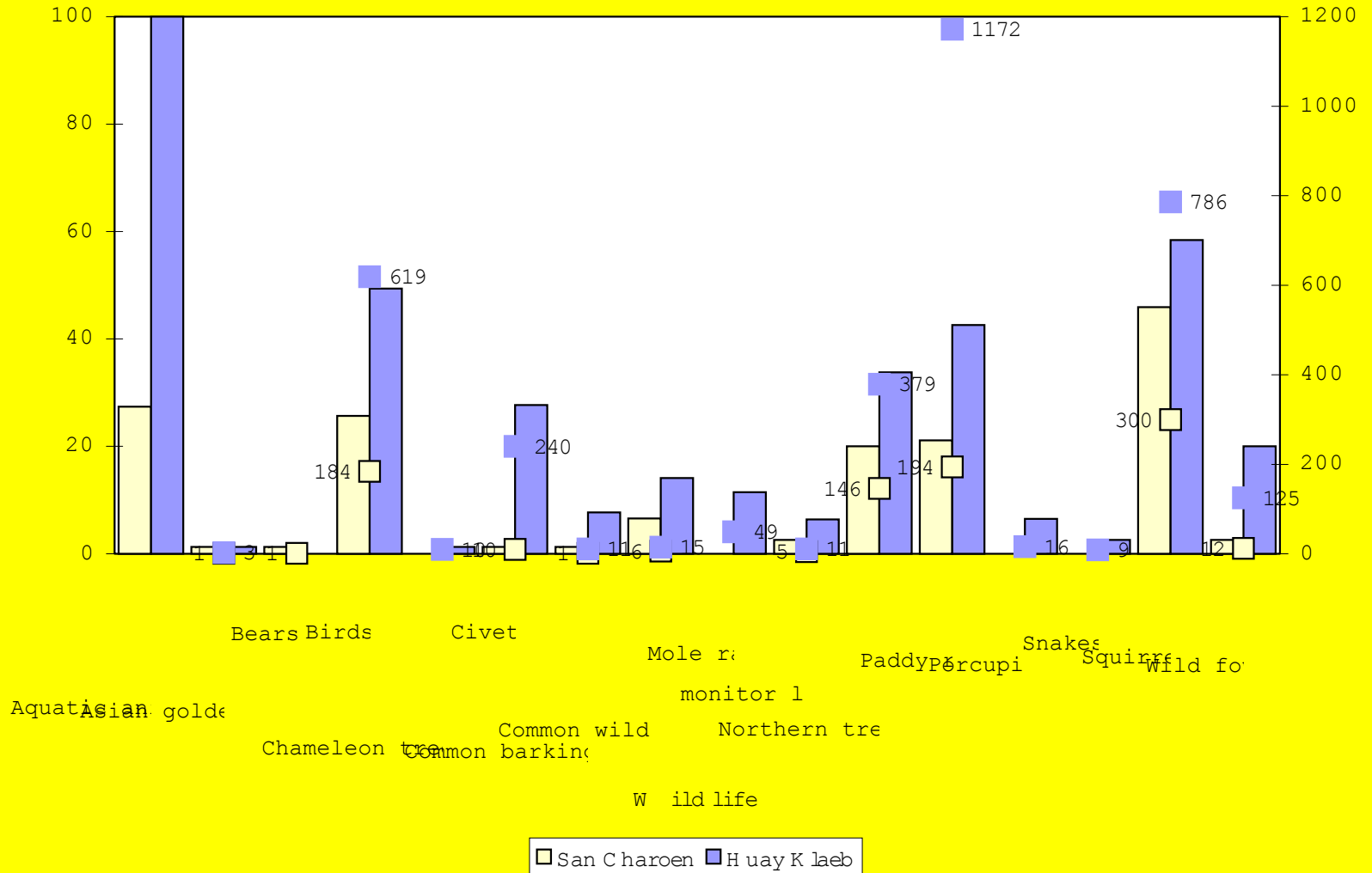
Wildlife



Wildlife



Percentage of hh and quantities of various wildlife species hunted



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Main results (5)

NTFP's were also collected for use as raw materials for e.g. construction purposes, tool handles, poles and fencing

Bamboo culms were harvested, households in Huay Klaeb collected four species and six times as many culms as households in San Chraoen which tended to collect a single bamboo species

Less than ten percent of households in both the villages collected rattan stems for household consumption and no households traded rattan stems

Aquatic animals



Jintana, V. et al. 2001



Bamboo forest at Huay Klaeb



Jintana, N. et al. 2001

Utilization of bamboo culms



Utilization of bamboo culms

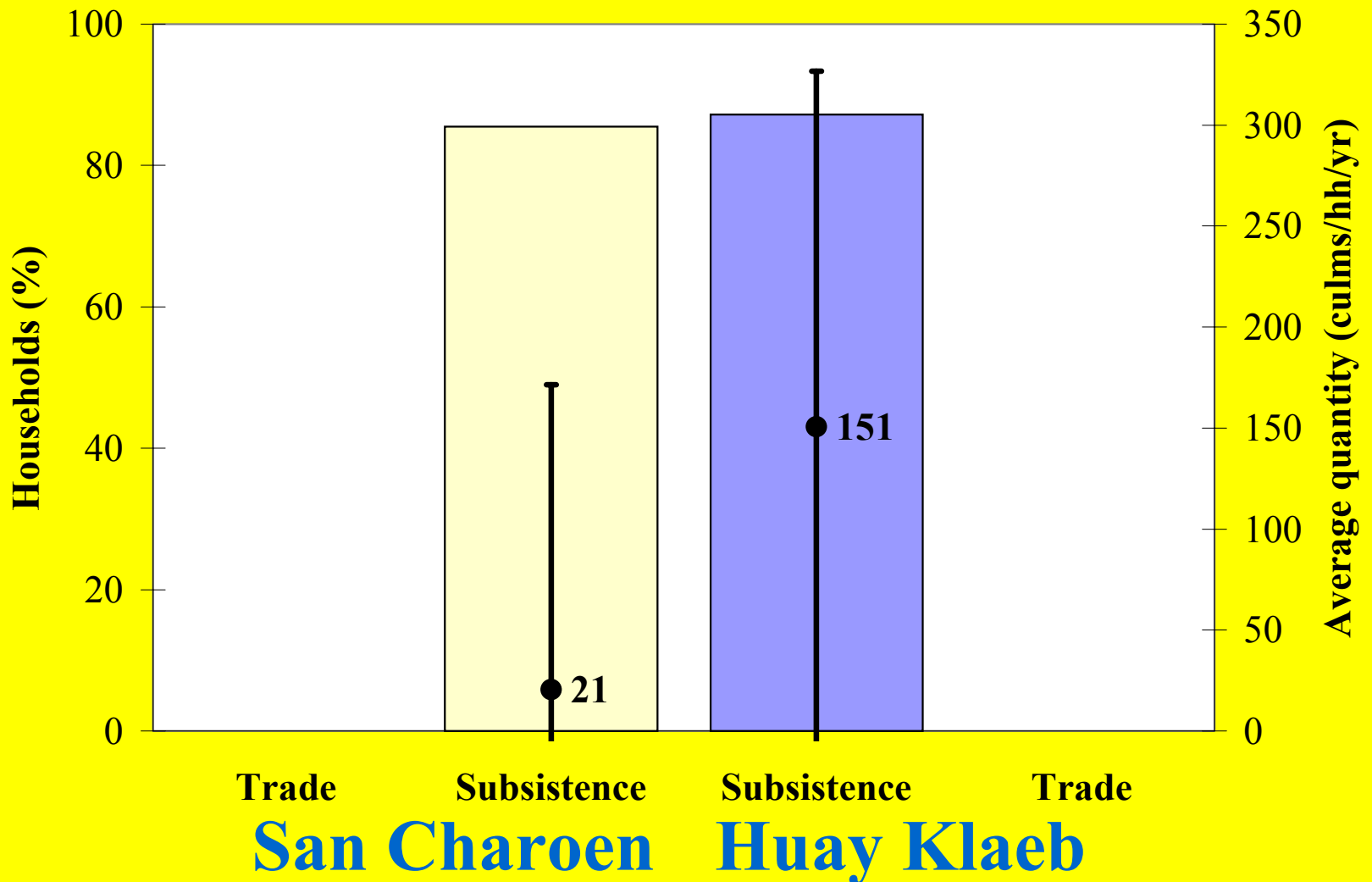


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Rattan, *Imperata*, *Livistoa* leaves for roofing



Percentage of hh and quantities of bamboo culms harvested



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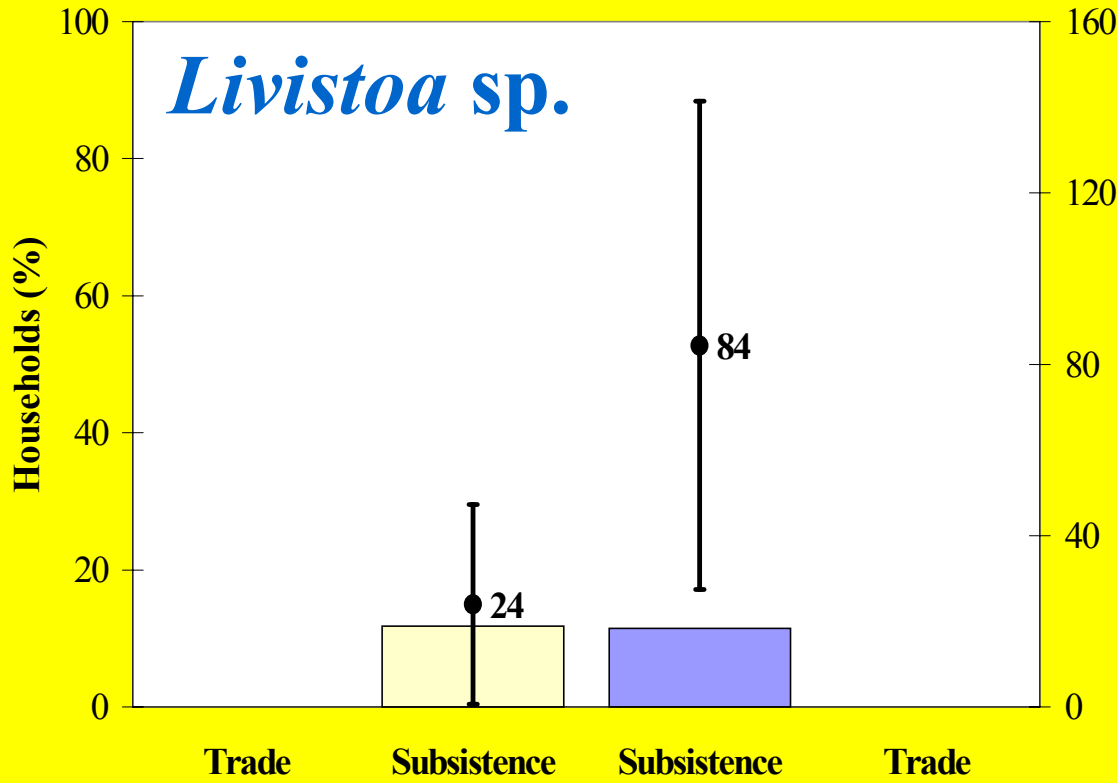
Main results (6)

Certain palm leaves and grass species were collected to make roofing materials, they were *Livistoa speciosa* Kurtz., rattan leaves and *Imperata cylindrica* (Linn.) P. Beauv.

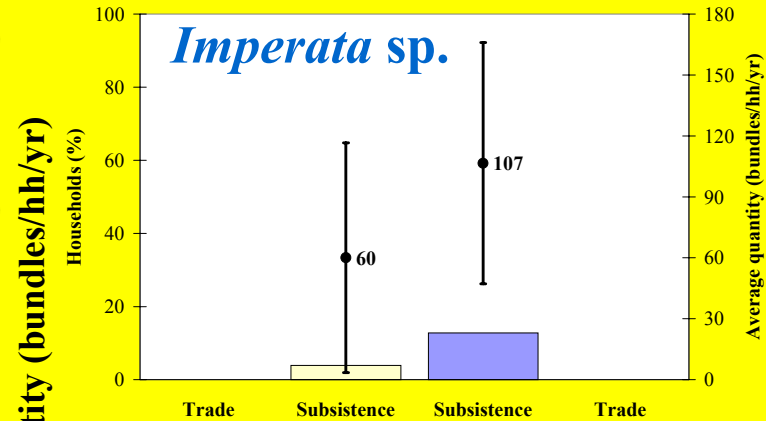
A greater percentage of households in Huay Klaeb collected these three species and in higher quantities than households in San Charoen

All households in both the villages collected fuelwood

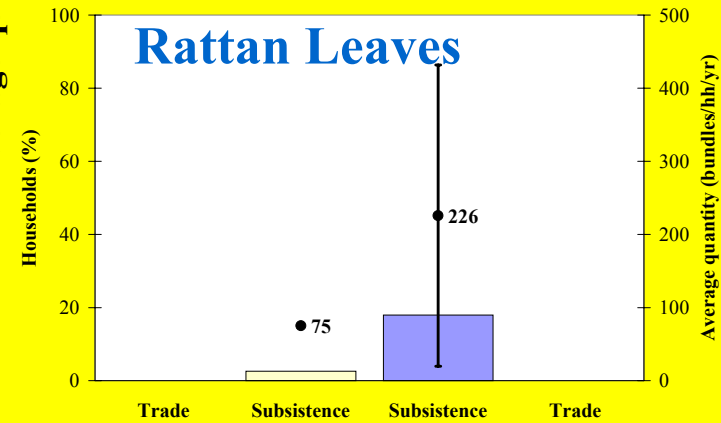
Percentage of hh and quantities of roofing materials NTFPs harvested



San Charoen Huay Klaeb



San Charoen Huay Klaeb



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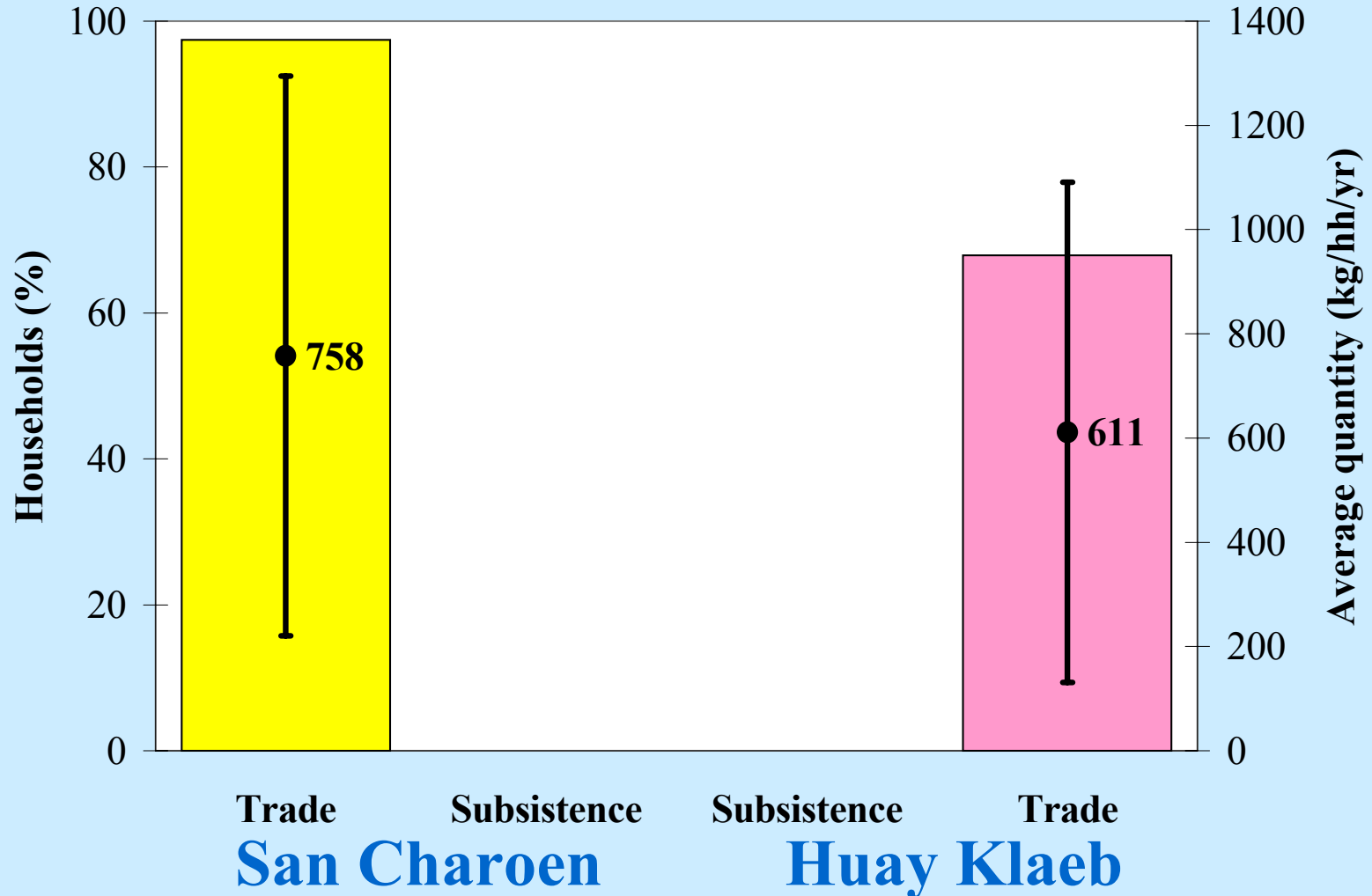
Main results (7)

The main species collected for trading was *Arenga pinnata* Merr.

In San Charoen a greater percentage of households collected *Arenga* fruits this is because every household had responsibility for a 'household forest' where it has the right to collect fruits

The quantities collected in San Charoen were higher because the community has devised a management system that eliminates competition from outsiders and between village members, also they have a rule to ensure the regeneration capacity of the palm trees is sustained

Percentage of hh and quantities of *Arenga pinnata* fruits harvested



Harvesting of sugar palm (*Arenga pinnata*)



Boiling the sugar palms' fruits



Jintana, V. *et al.* 2001



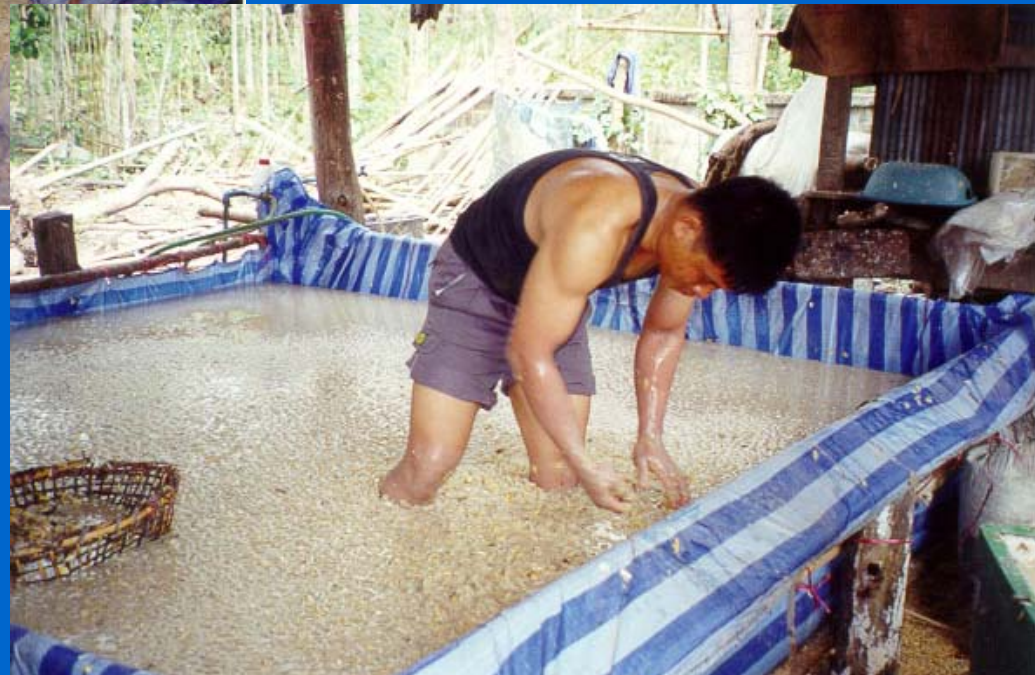
Remove the jelly seed from the boiled fruits



Fresh jelly seeds of sugar palms



Soak in the water and sorting



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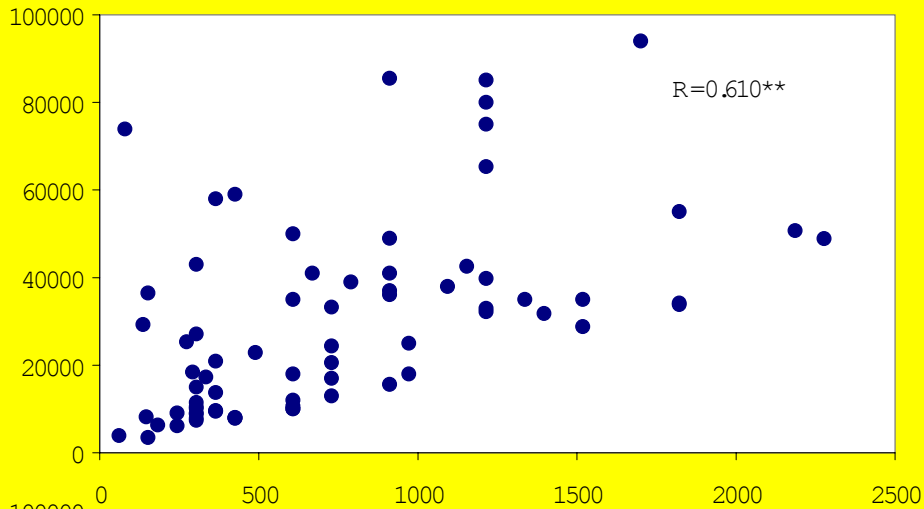
Main results (8)

In both villages there was a high relationship between income and the quantity of *Arenga* fruits harvested

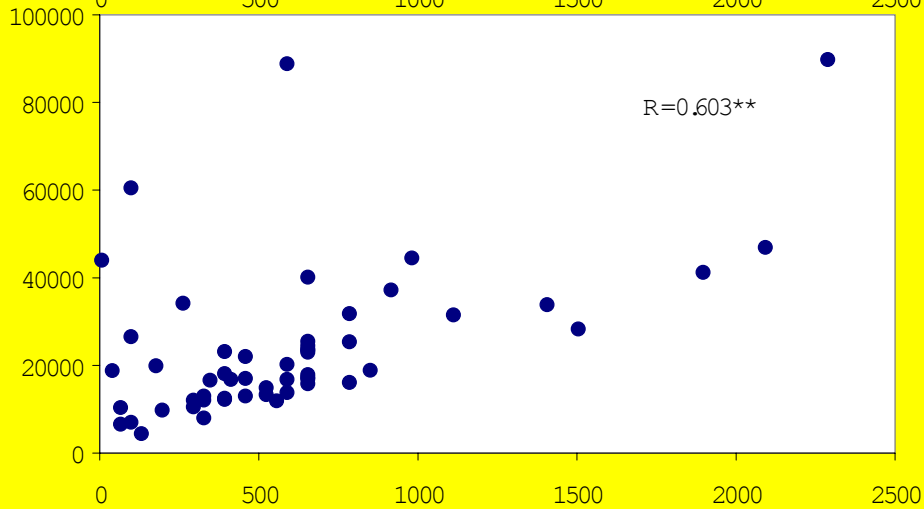
The relationship is hardly unexpected as NTFP's compose approximately one third of income in both villages and *Arenga* contributes approximately ten times the income of other NTFP's in San Charoen and double the income of other NTFP's in Huay Klaeb

In San Charoen there was also a moderate relationship between land area, number of plots of land, number of household members and the quantity of *Arenga* fruits harvested

Relationship between the quantities of *Arenga pinnata* fruits harvested and the annual household's income



San Charoen



Huay Klaeb

Total quantity harvested (kg/hh/yr)

Correlation coefficients between household demographic and their dependency on the non timber forest products (NTFPs)

	Household demographic	Mushrooms	Bamboo shoots	Bamboo culms	Rattan shoots	Wild vegetables	Medicinal plants	<i>Arenga</i> sp.	Fulewood
San Charoen	Children	0.008	0.140	-0.091	-0.101	0.081	-0.17	0.372**	0.044
	Household members	0.115	0.062	0.006	0.105	0.428**	-0.072	0.445**	0.364**
	NTFP's collectors	0.154	-0.032	0.000	0.209	0.191	0.165	0.220	0.122
	Income	0.216	-0.141	-0.050	-0.012	0.256	0.306*	0.610**	0.092
	Land plot	0.094	0.012	-0.050	-0.023	-0.006	-0.038	0.382**	0.082
	Land area	0.167	0.169	0.150	-0.279*	0.009	0.040	0.398**	0.016
Huay Klaeb	Children	0.153	-0.291*	0.161	0.165	-0.200	-0.048	-0.034	0.086
	Household members	0.465**	0.163	0.354**	0.398**	0.242	0.044	-0.110	0.106
	NTFP's collectors	0.414**	0.228	0.399**	0.322**	0.339*	0.122	-0.268	0.152
	Income	0.203	0.164	0.006	0.161	0.182	0.210	0.603**	0.161
	Land plot	0.359**	0.204	0.140	0.230	0.390**	0.180	0.374**	-0.070
	Land area	0.470**	0.130	0.220	0.147	0.260	0.379**	0.313*	0.083

Significant level at P = 0.01 (**), P = 0.05 (*)

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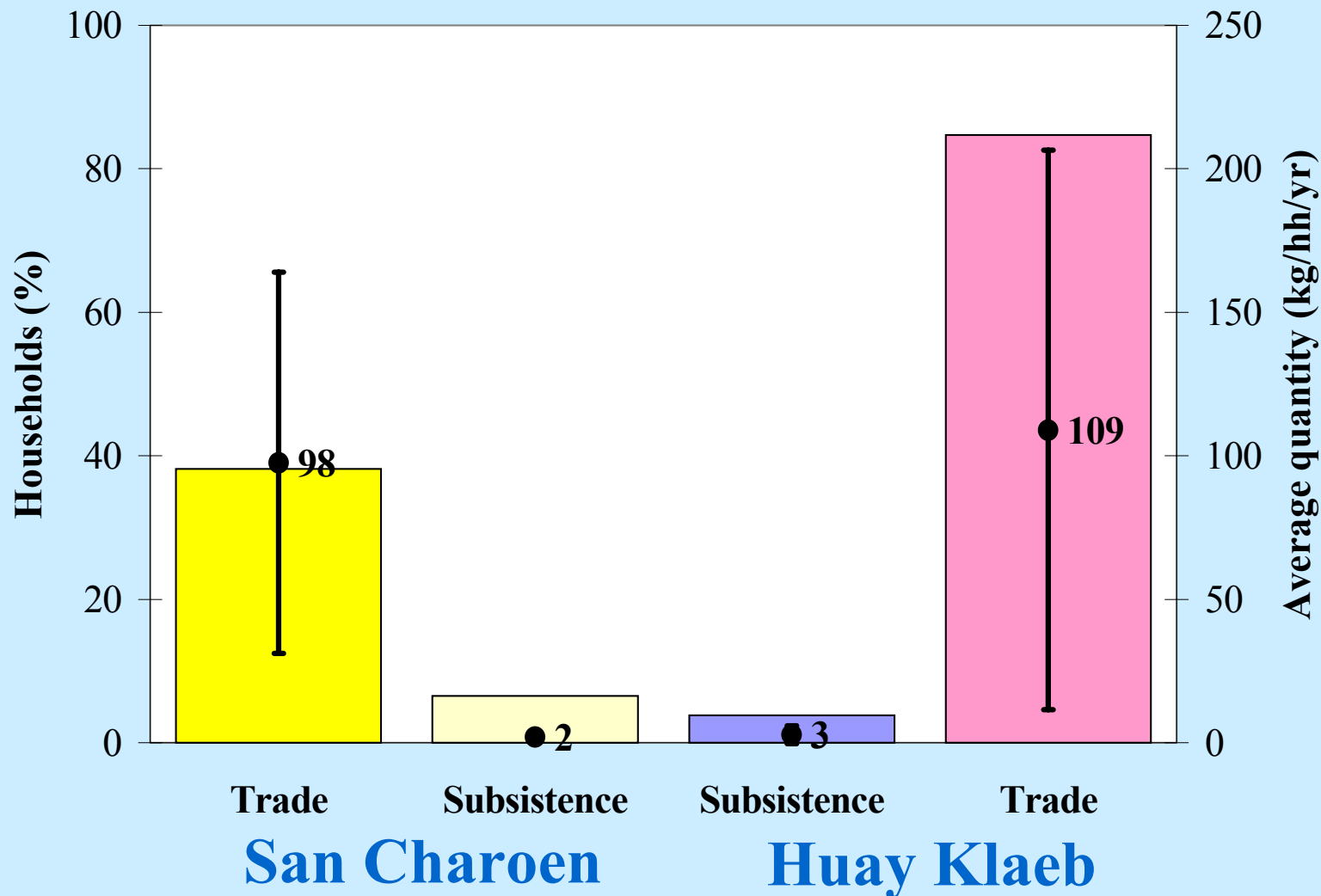
Main results (9)

More households in Huay Klaeb than in San Charoen collected *Thysanolaena maxima* Ktze. a grass used for making brooms

The households that collected in Huay Klaeb also generated about three times the income from trading the products.

Households with alternative ways to generate income e.g. agriculture, handicrafts and temporary work sometimes ceased to trade the lower value NTFP's as other income generating activities became available

Percentage of hh and quantities of *Thysanolaena maxima* grass harvested



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Thysanolaena maxima grass and processing for sale



Jintana, V. et al. 2001



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Main results (10)

In San Charoen, the villagers had established an innovative management system for rattan and *Arenga pinnata* Merr.

The management system had resulted in direct benefits to the villagers, reduced competition lead to fruits being harvested at the optimum time and some fruits were left on the tree to ensure regeneration

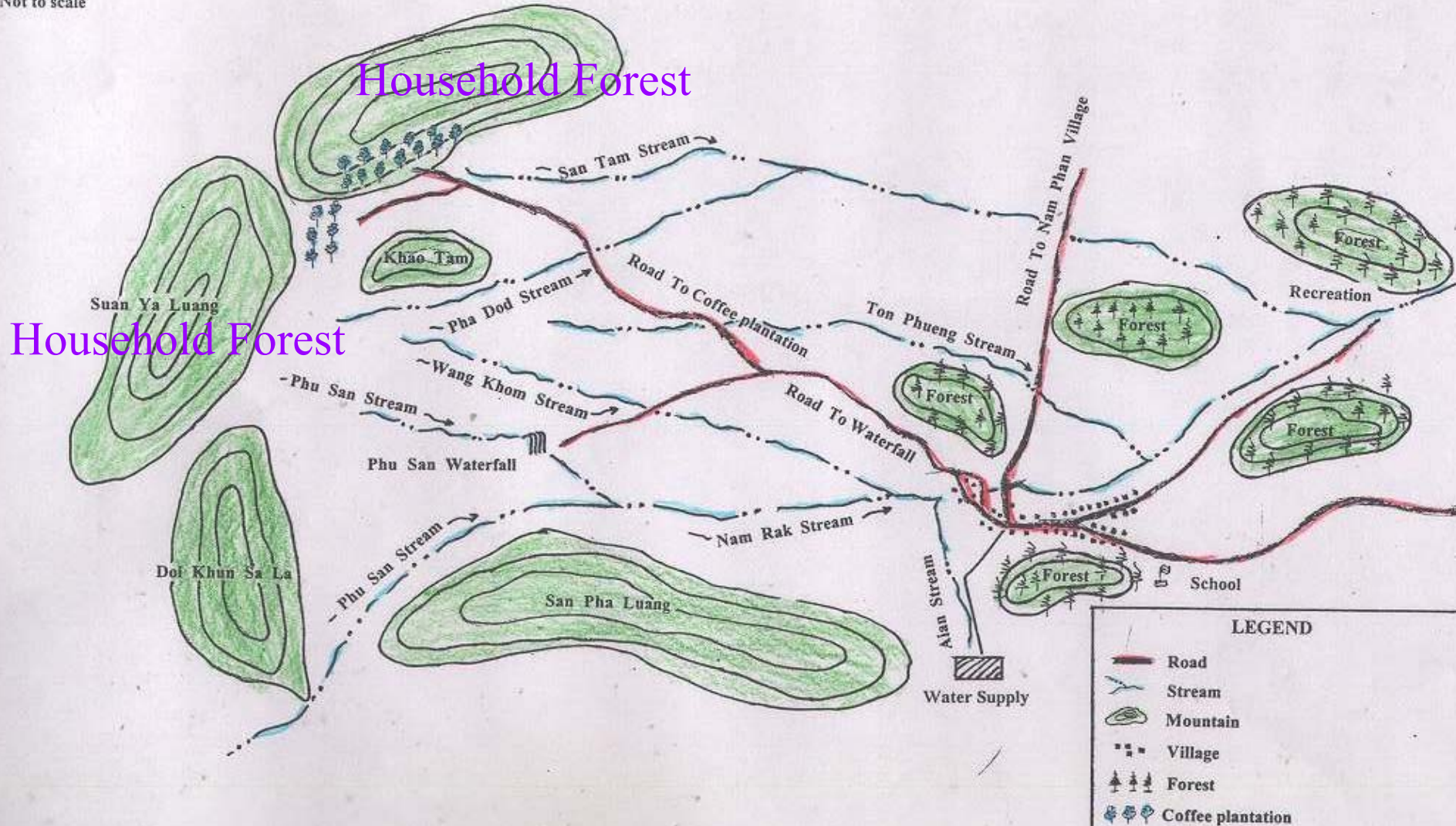
Within this village the community rules were enforced and additional regulations relating to NTFP's such as a restriction on trading bamboo shoots and rattan stems were generally adhered to

Map of San Charoen by participatory mapping



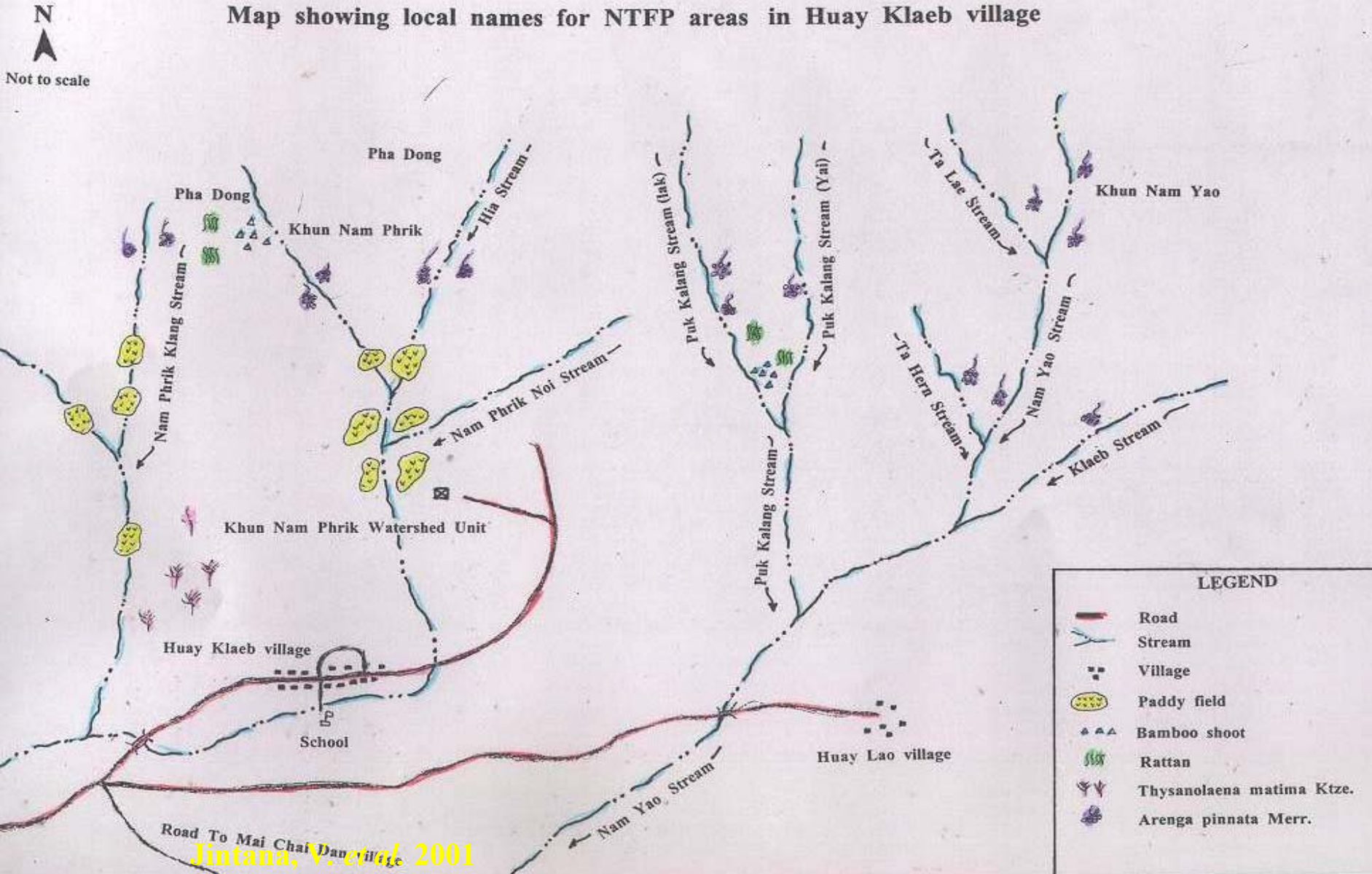
Map showing local names for NTFP areas in San Charoen village

Not to scale



Map of Huay Klaeb by participatory mapping

Map showing local names for NTFP areas in Huay Klaeb village



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Discussion (1)

Methodologies:

The quantities of NTFP's harvested have been described in a variety of local units e.g. bundles of leaves or grass, kg fresh weight of fruits or wild vegetables, individual animals caught. As many of these products are used directly within the household and not traded it is difficult to compare the value of these products to the households.

Monetary values could be estimated however, often the true value of NTFP's lies in their seasonality. This value has two important factors, first the NTFP may only be available at a particular time of year, and it may make up shortfalls in the diet e.g. bamboo caterpillars. Secondly, NTFP's may be seasonal because fluctuations in labour availability means collectors are only free to collect NTFP's at a certain time of the year e.g. *Thysanolaena maxima* Ktze. mainly collected by women and children. Factors such as these make accurately comparing the true value of different types of NTFP's very problematic

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Discussion (3)

The level of data collection and data analysis has been done at the household level, however, the average household size is different, in San Charoen it is 7 persons per household and in Hauy Klaeb it is 5 persons per household. This should be noted when comparing households between the two villages.

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Conclusion

The harvesting and use of NTFP's is influenced by a variety of factors such as available natural resources, land use and cropping systems, cultural preferences, market values for NTFP's, alternatives to NTFP's collection, seasonality and labour availability

The strategies adopted by communities to utilise NTFP's are dynamic and they respond to changes in the available resource base and changes in the villagers livelihoods

