



Medicinal Plants under Rubber Agroforestry System in West Kalimantan

Background

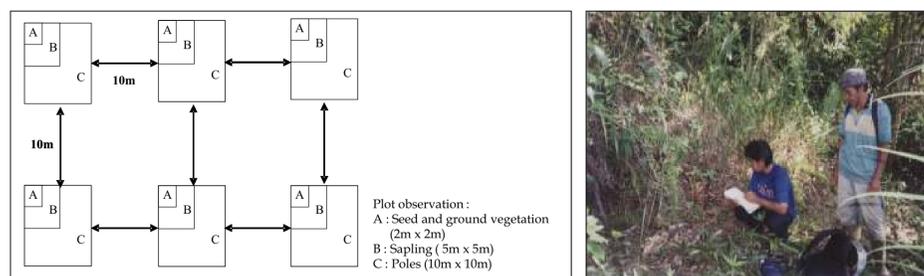
Rural communities normally depend on nearby forests for local fruits, resin, rattan, leather and plants of medicinal value. In West Kalimantan, Indonesia, demand for local medicinal plants has increased since 1999 (Pontianak Post, 2002). Medicinal plants are harvested from natural forests, upland rice fields, rubber gardens and home gardens. As natural forests gradually disappear from the landscape, managed gardens and agroforests become the major source of medicinal plants. An earlier inventory recorded 137 plant species of medicinal value (Rosnani, 1996). A recently conducted study of naturally regenerating medicinal plants under improved in Rubber Agroforestry Systems (RAS), currently promoted by ICRAF and partners, highlights their potential role in conservation of diversity of medicinal value.

Methodology

The study was conducted in four villages (Engkayuk, Senunuk, Embaong and Pana) of Sanggau District, West Kalimantan in Indonesia in May-June 2005. A detailed survey of naturally growing plant species of medical value was conducted in farmers rubber agroforests (188 plots), established with ICRAF promoted technology. Key informants in the study villages were consulted for their knowledge of these plant species.



Picture 1. Development of a rubber agroforest under RAS-1 technology that allows natural regeneration of local plant species in the inter-rows between clonal rubber trees.



Picture 2. Sampling layout and survey for medicinal plants.

Result and Discussion

A total of 76 species of seedlings and ground vegetation that have medical value were recoded during the survey; while 13 species at sapling stage were counted. These plants are used in treatment of human health problems such as malaria, fever, muscle stiffness, external wound and ulceration.



Rumah kayuk



kayu palu'



akar lajan



kembang bulan

Table 1. List of medicinal plants in RAS 1 that are mostly used in all research villages

No	Local name	Botanical name	Medicinal use
1	Akar Lajan		Awakening unconsciousness people
2	Akar Niman Batu		Kidney problem
3	Akar Perut Ayam		Stomach ache
4	Danging / Simpup	<i>Dillenia suffruticosa</i>	Injury and fever
5	Kayu palu		Muscle pain
6	Kemunting	<i>Rhodomyrtus</i> spp	Stomach problem
7	Kembang Bulan		Gynecological problems
8	Klopok	<i>Brookea tomentosa</i>	Eye problem
9	Kopa/kepuak	<i>Artocarpus sericarpus</i>	Injury
10	Kumpun	<i>Ficus grossularoides</i>	Cure babies from evil spirit
11	Leban/Ngarut	<i>Vitex pinnata</i>	Stomach ache
12	Mambong Munggok	<i>Blumea balsamifera</i>	Worm
13	Medang	<i>Prunus arborea</i>	Worm
14	Nyipoh Tedong Bini	<i>Aniseia martinicensis</i>	Ineffective of snake poison
15	Nyipoh Tedong Laki	<i>Aniseia</i> spp	Ineffective of snake poison
16	Ongkah Beroan	<i>Dendrophthoe petandra</i>	Jaundice
17	Otopong	<i>Veronica arborea</i>	Stomach ache
18	Paku Gelang	<i>Cibotium baranes</i>	Eyes
19	Peribis Laki	<i>Breynia racemosa</i>	To have children easy sleep
20	Pronggang	<i>Breynia</i> spp	To cure sprain
21	Pulai/jita	<i>Alstonia</i> spp	Malaria and toothache
22	Rumah Kayuk		Aphrodisiac (for men)
23	Ringkan	<i>Ficus</i> spp	Cure babies from evil spirit
24	Risak/Cengkodok	<i>Melastoma malabathricum</i>	Diarhea
25	Tegari	<i>Dianella ensifolia</i>	Abscess in nose

Diversity of Medicinal Plants

The highest number of medicinal plant was found in Pana village - 37 species of seedlings and ground vegetation and 8 species of sapling size. In Senunuk village, the regrowth vegetation under RAS 1 are dominated by *Imperata cylindrica*, *Vitex pinnata* and others herbs. The diversity of medicinal plant under rubber agroforestry system is influenced by previous vegetation, vegetation richness in surrounding areas, age of plot and the management intensity plot.

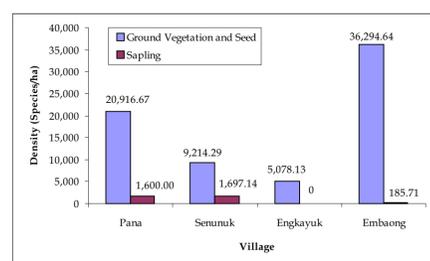


Chart 1. Number of species per ha in all research villages.

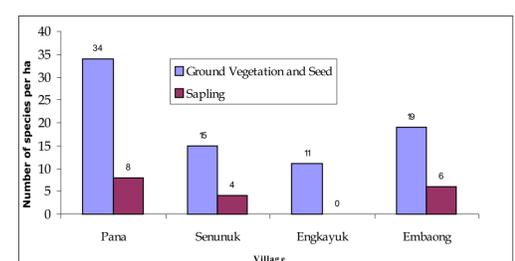


Chart 2. Density of species per ha in all research villages.

Density of Medicinal plants

Data analysis showed that Embaong village has the highest density of medicinal plants - 36295 plants/ha (from 19 species), and this was independent of the number of species in the plot. Although plant species abundance was highest in Pana village (37 species), the plant density was slightly lower (20917 plants/ha).

Some facts about medicinal plants:

- A single species may be used to treat different health problems
- Different parts of the plants can be used for different purposes
- Processing of medicinal plants or their parts may be required in some cases. In general, plant parts may be boiled, pulverized, mashed or used without any processing.
- Two or more species can be mixed to make a cocktail used in treating health problem.

