

# Crops Speciesin Community Forest Of The Sungai Wain Protected Forest

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**ABSTRACT:** The purpose of this research to determine the type of crops cultivated by people in Community Forest in Sungai Wain Protection Forest . Purposive sampling, interviews and field observations were used to obtain primary data. The results showed that the types of annuals crops that are grown are banana, rice, maize, ginger, celery, and others, and the perennials crops species is jackfruit, rubber, lai, durian, etc. Conclusion : community planted types of annual crops and perennial crops in community forests of the protected forests.

**Keywords :** purposive sampling, community forest, annuals crops, perennials crops, Sungai Wain Protection Forest.

## 1. INTRODUCTION

Forest as a natural resource is a source of livelihood of communities that exist around the forest, and dependent on the existence of the forest [1], stating that although the forest include renewable natural resources does not mean that its existence does not enjoy unlimited. Utilization of forest areas by the public, are essentially the conversion of forest ecosystems a field is to improve the flow of benefits to farmers [2]. Use of natural resources by the community such as land and forests is not only happening in Production Forest and conservation, but also in Protected Forests especially Sungai Wain Protection Forest Balikpapan, East Kalimantan. Sungai Wain Protection Forest has a wealth of high biodiversity, both flora and fauna, has a function as a buffer system of life as a regulator of land-water (hydrology), on the other hand a lot of people living around the forest, which is dependent on the existence of the forest [3]. It therefore requires policies that can combine two interests. Based on the laws of forestry communities living around the forest and forest dependent given access to obtain permission to utilize non-timber forest products and environmental services [4]. With the enactment of the utilization zone for community forestry, forest communities are legally able to utilize the land for planting annual crops and perennial crops (fruit trees and rubber trees). Model of land use that is done is to use the community agroforestry systems, which combine between annual crops and fruit trees were planted in monoculture and intercropping. Agroforestry as one of the techniques and patterns of land use are expected to solve various problems of land use caused by less optimal land use [5].

## 2. METHODS

This research was conducted in community forestry in the Sungai Wain Protection Forest , City of Balikpapan , East Kalimantan . Using descriptive analysis of qualitative and quantitative descriptive, using interviews and field observations to obtain data: the type of crops cultivated, arable land, soil type, topography, farmer groups, social, economic and cultural.

## 3. RESULT AND DISCUSSION

### 3.1 Farming Land Area

Areas that have been designated as an area of agricultural activities in the Forest Reserve is in Limited Use Zone covering an area of 1,400 ha. Has been managed by 10 farmer groups with 377 members. A farm community that has been living around the forest. Management Map can be seen in Figure 1.

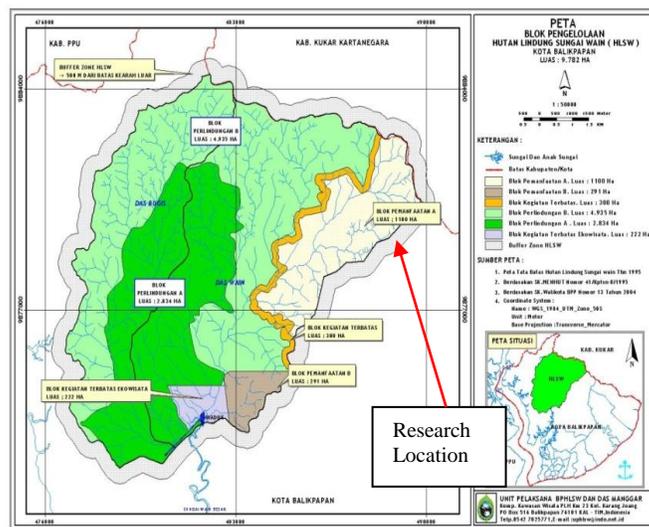


Figure 1. Map of Sungai Wain Protection Forest Management

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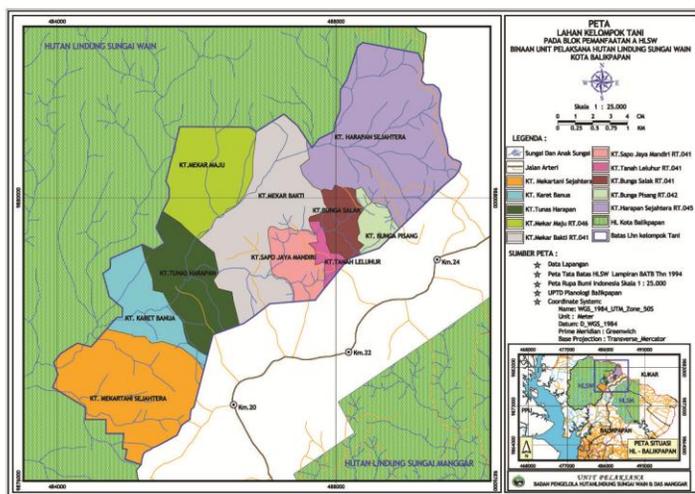


Figure 2. Map land farmers group in community forest (HKM)

Farmer group members in community forest are people who live around Sungai Wain Protection Forest. Data can be seen in Table 1.

Table 1. Number of Members of the community forest farmer groups

No	Farmers Group	Number Of Groups Farmers	Land Area (ha)
1	Mekar Tani Sejahtera	105	255.00
2	Karet Banua	19	106.70
3	Tunas Harapan	23	138.10
4	Mekar Maju	25	152.40
5	Mekar Bhakti	50	244,90
6	Bunga Salak	27	48.60
7	Bunga Pisang	11	32.60
8	Harapan Sejahtera	81	342.40
9	Sapo Jaya Mandiri	27	60.60
10	Tanah Leluhur	9	18.70
		377	1.400.00

a. Topography

Topography in community forest of the Sungai Wain Protection Forest has a hilly topography with an average slope reaches 40 % -60 %, and is located at an altitude of 40-80 m above sea level. Land cover conditions areas dominated by mixed farming crops, shrubs and secondary forest.

b. Soil

The type of soil that dominates in the area of community forest is red-yellow podzolic and alluvial. Red-yellow podzolic soil type is the type of soil which is characterized by red - yellow color, is a type of nutrient-poor soils, low CEC, and easily eroded. According Hardjowigeno, 2010 [6], the type of ground red-yellow podzolic is a type of soil that had been developed further, derived from the weathering of minerals and leaching cations base is increasing, so stay

minerals are difficult rotting in the soil and the soil to become thin and sour. Alluvial soil is a type of sediment results from erosion of the surface of the material in the form of sedimentation.

c. Crop species cultivated

The type of crops cultivated in the area surrounding communities in community forest (see Table 2) is a type of seasonal crops (annual crops). Annual crops grown in the valley / slope close to the watershed, or planted in monoculture or intercropping among other woods perennial crops such as rubber, while still young.

Table 2. Annual Crops

No	Type of Plant	Family	Scientific Name
1	Bananas	Musaceae	<i>Musa paradisica</i> L
2	Paddy	Poaceae	<i>Oryza sativa</i> L
3	Maize	Poaceae	<i>Zea mays</i> L
4	Ginger	Zingiberacea	<i>Zingiber officinale</i> L
5	Celery	Apiaceae	<i>Apium graveolens</i> L
6	Leeks	Alliaceae	<i>Allium fistulosum</i> L
7	Great chili	Solanaceae	<i>Capsicum annum</i> L
8	Long bean	Fabaceae	<i>Vigna sinensis</i> L
9	Cheakpea	Fabaceae	<i>Phaseolus vulgaris</i> L
10	Smallchili	Solanaceae	<i>Capsicum frutescens</i> L
11	Tomato	Solanaceae	<i>Lycopersicum esculentum</i> L
12	Eggplant	Solanaceae	<i>Solanum melongena</i> L.
13	Watermelon	Cucurbitacea	<i>Citrullus lanatus</i> (Thumb)
14	Galangal	Zingiberacea	<i>Alpinia galanga</i> (L) Willd
15	Lemongras	Poaceae	<i>Cymbopogon citratus</i> DC.
16	Cassava	Euphorbiaceae	<i>Manihot esculenta</i> Crantc.

Farming communities cultivate various types of seasonal crops , based on several reasons, among others: used for its own purposes, some for sale and some are specialized the result mostly for sale. In addition, the farmers plant tree species that are easy to sell and the price is quite high, such as tomatoes, peppers, bananas, pineapple, and others. Some type seasonal crops are planted neither by monoculture and polyculture (intercropping). Monoculture type usually grown alongside other plants , such as tomato plants grown on the same land, eggplant , long beans , corn , chili peppers big and small . Cassava and watermelon grown on the same land , but land is much wider, and usually planted adjacent with barking plant. Among the rice crop planted rows of rubber plant ( Age 2-8 months) . While plants laos , lemongrass , ginger , celery planted around the yard cottage. The banana were planted in monoculture and some are planted crops among the bark, and also be planted around the cottage.



Figure 3. Tomato (*Lycopersicum esculentum* Mill.)



Figure 4. Eggplant (*Solanum melongena* L.)

The type of perennial crops cultivated in the area of Community Forest in the Sungai Wain Protection Forest can be seen in Table 3.

Tabel 3. Perennial Crops

No	Type of Plant	Family	Scientific Name
1	Chempedak	Moraceae	<i>Artocarpus integer</i> (Thunb)Merr
2	Rubber	Euphorbiaceae	<i>Hevea brasiliensis</i> Muell.Arg
3	Lai	Malvaceae	<i>Durio kutejensis</i> Hassk & Becc.
4	Durian	Malvaceae	<i>Durio zibethinus</i> Murr
5	Jackfruits	Moraceae	<i>Artocarpus heterophyllus</i> Lamk
6	Soursop	Annonaceae	<i>Annona muricata</i> L
7	Rambutan	Sapindaceae	<i>Naphelium lappaceum</i> L
8	Dragonfruits	Cactaceae	<i>Hylocereus</i> spp
9	Manggo	Anacardiaceae	<i>Mangifera indica</i> L
10	Bark	Arecaceae	<i>Salacca zalacca</i> (Gaertn)Voss
11	Sapodilla	Sapotaceae	<i>Manilcara zapota</i> (L) P.Royen
12	Avocado	Lauraceae	<i>Persea americana</i> Mill
13	Pepper	Piperaceae	<i>Piper nigrum</i> L
14	Dogfruits	Fabaceae	<i>Archidendron</i>

15	Guajava	Myrtaceae	<i>pauciflorum</i> (Benth)
16	Sugarpal m	Arecaceae	<i>Psidium guajava</i> L
17	Coconut	Arecaceae	<i>Arenga pinnata</i> (Wurmb) Mrr
18	Matoa	Sapindaceae	<i>Cocos nucifera</i> L
		e	<i>Pometia pinnata</i>
19	Breadfruits	Moraceae	<i>Artocarpus altilis</i> (Parkinson) Fosberg
20	Candlenu t	Euphorbiaceae	<i>Aleurites moluccana</i> (L) Willd.
21	Bamboo	Poaceae	<i>Bambusa spp</i> (Kunth) Dumort

Selection of agricultural crops or fruit trees planted by farmers community forest in Sungai Wain Forest Protection based on customs that have been carried out by local people who had been planted in advance, can grow well and can increase farmers' income. The annual plant located in the area of Sungai Wain Forest Protection, community forest nothing has been planted since 1980, such as rubber, durian and lai, and there are rubber and lai who has over 20 years old. Generally these plants are grown in monoculture on some stretch of land dipunggung hills, slopes or flat land with an area of about 0.5 ha - 2 ha.



Figure 5. Lai (*Durio kutejensis* Hassk & Becc)



Figure 6. Rubber (*Hevea brasiliensis* Muell.Arg)

#### 4. CONCLUTIONS AND RECOMMENDATIONS

In general, plants that are cultivated are annual crops and fruit plants. The selection of plants based on a culture that

has long used the land for farming. The model of land use according to the conditions of land is using agroforestry

system. It should be assessed on the design of land use in accordance with local conditions.

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