

Agrodiversity in farmers' landscape: Example from South Sulawesi, Indonesia

Dienda C.P. Hendrawan, Degi Harja, Subekti Rahayu, Betha Lusiana, Sonya Dewi

World Agroforestry Centre/ ICRAF Southeast Asia Program, Bogor, Indonesia

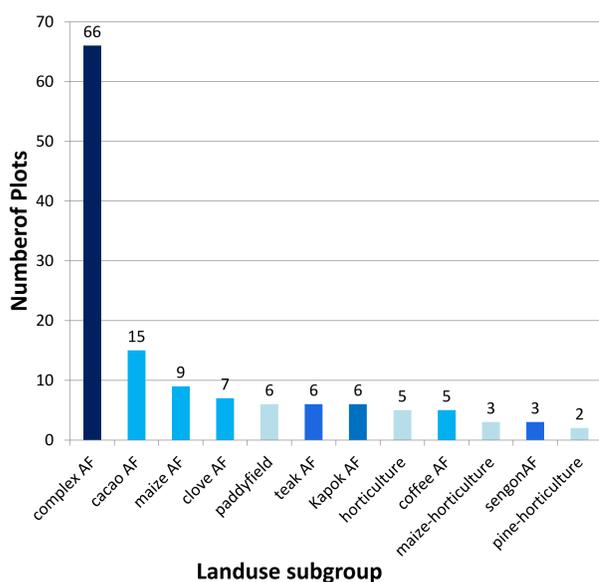
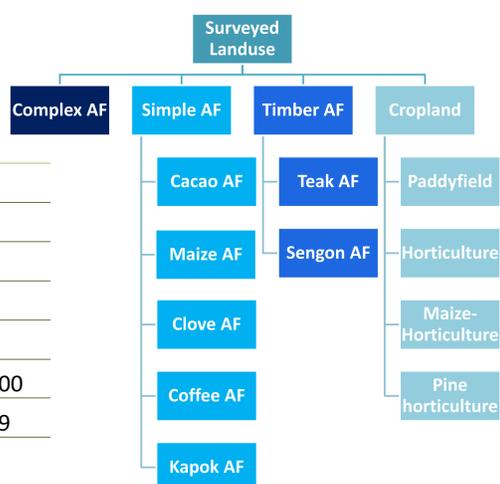
BACKGROUND

Agricultural biodiversity or agrodiversity is essential for livelihood and conservation. It is determined by two factors: natural and anthropogenic factors. Environmental conditions, pest and disease, dispersal agents, and natural disturbance play role as natural factors. How influential is anthropogenic factors in agrodiversity?

1. WHO ARE THE FARMERS AND MANAGE WHAT SYSTEMS?

30 farmers and all their plots were surveyed. The unit of analysis is a farming system, which is defined as a population of individual plots managed by the same person. We collect socio-economic data of every household and conducted biophysical assessment on each land.

number of farmers	30
farmer's age range (years)	24 - 65
total number of plots	133
family size	2 - 7
number of plots owned	2 - 11
plot size (m ²)	150 - 23,000
plot distance (m)	19 - 7,629



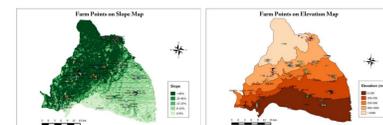
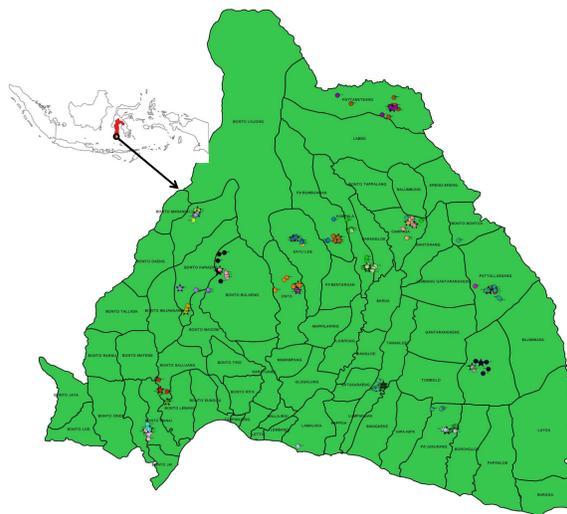
Complex agroforests consists of almost equally abundant mixed species with no single species outstand in abundance.

Number of plots in each sub category of land use.

CONCLUSION

- Cacao, kapok, and arabica coffee which belong in Q3, are the main commodities in Bantaeng, followed by the species in Q1. Species in Q4 are commonly utilized but not as the main commodity
- Overall, 54% of all the surveyed plants exist because of farming management, while the other 46% are tolerated from natural dispersal

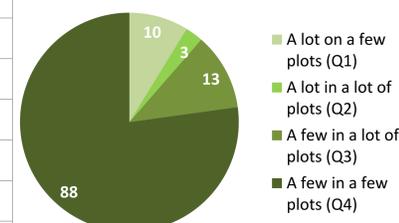
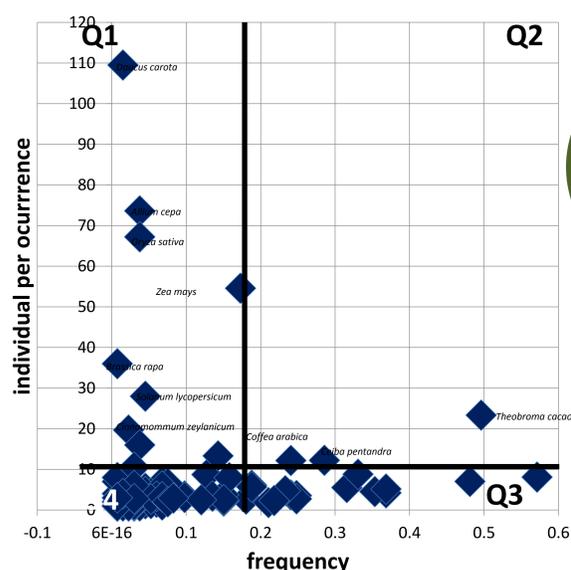
STUDY SITE



Bantaeng District, South Sulawesi
Total area: 395,83 km²
Population density: 446 /km²

Bantaeng is a peri-urban district, with both coastal and mountainous region where most farmers manage diverse agricultural systems

2. WHAT LIVES INSIDE THE PLOTS?



114 utilized species were found from all plots. Species grouping are based on frequency and individual per occurrence

Q	frequency	mean ind/occurrence	n species
1	< 20%	≥ 10	10
2	≥ 20%	≥ 10	3
3	≥ 20%	< 10	13
4	<20%	< 10	89

NOTABLE SPECIES*

Species name	Common name	Group	Species name	Common name
<i>Daucus carota</i>	carrot	Q1	<i>Musa paradisiaca</i>	banana
<i>Allium cepa</i>	onion		<i>Syzygium aromaticum</i>	clove
<i>Oryza sativa</i>	paddy		<i>Gmelina arborea</i>	white teak
<i>Zea mays</i>	corn		<i>Toona sureni</i>	suren
<i>Brassica rapa</i>	cabbage		<i>Artocarpus heterophyllus</i>	jackfruit
<i>Solanum lycopersicum</i>	tomato		<i>Gliricidia sepium</i>	gamal
<i>Cinnamomum zeylanicum</i>	cinnamon		<i>Manihot esculenta</i>	cassava
<i>Phaseolus vulgaris</i>	green bean		<i>Carica papaya</i>	papaya
<i>Pinus merkusii</i>	pine tree		<i>Lansium domesticum</i>	langsat
<i>Tectona grandis</i>	teak		<i>Albizia chinensis</i>	sengon
<i>Theobroma cacao</i>	cacao	<i>Sauropus androgynus</i>	katuk	
<i>Ceiba pentandra</i>	kapok	<i>Colocasia esculenta</i>	taro	
<i>Coffea arabica</i>	arabica coffee	<i>Mangifera indica</i>	mango	

* There are 88 species in category Q4. Although these species are low in frequency and abundance, most of the diversity comes from this group.

3. WHERE DO THE PLANTS COME FROM?

