International Symposium
of the Institute of Forest Science

New Multidisciplinary Perspectives of Forest and Environmental Resources

Date
October 20 (Thu), 2016
Venue
College of Forest and Environmental Sciences at Kangwon National University
Organizer
The Institute of Forest Science at Kangwon National University
College of Forest and Environmental Sciences at Kangwon National University
Sponsor
Korean Federation of Science and Technology Societies

KNU

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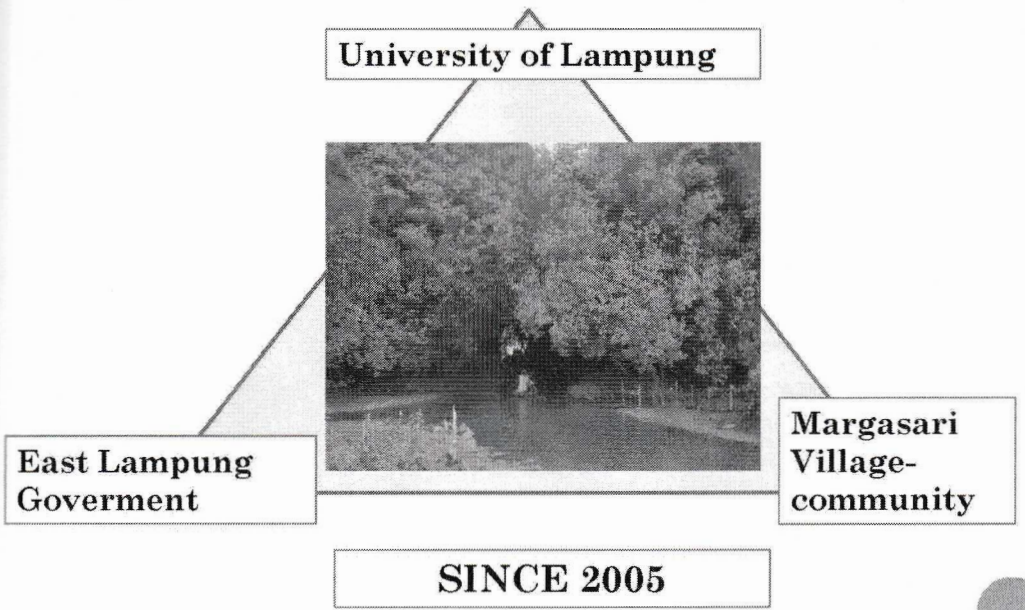
STRUCTURE & LITTERFALL PRODUCTION OF TWO MANGROVE VEGETATION AT MANGROVE EDUCATIONAL FOREST EAST LAMPUNG, INDONESIA

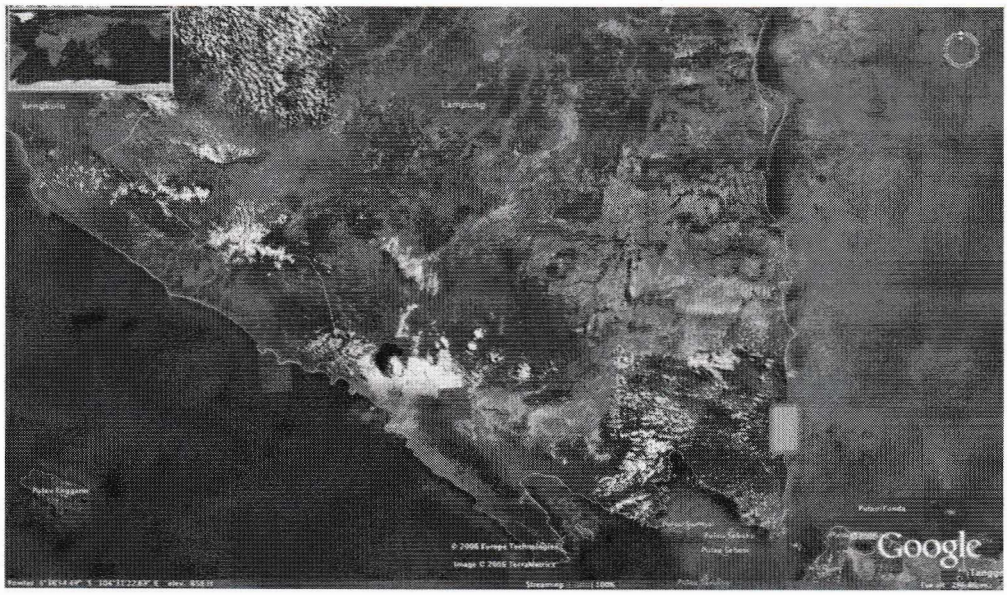
Melya Riniarti[1], Rara Diantari[2], Berta Putri[2], Duryat[1]

1 Department of Forestry, University of Lampung, Indonesia

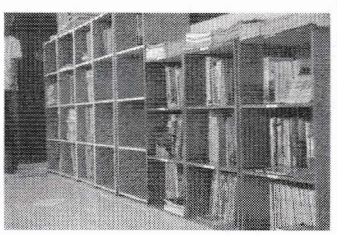
2 Departement of Fishery, University of Lampung, Indonesia

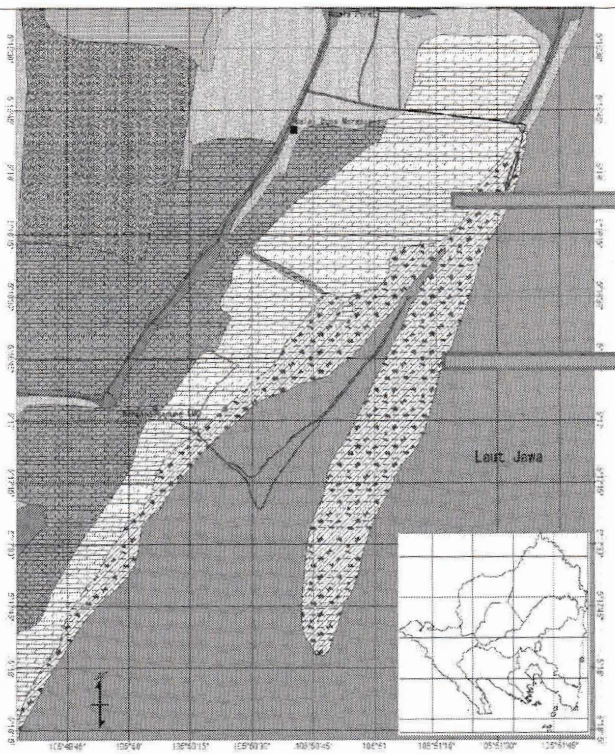
MANGROVE EDUCATIONAL FOREST (LAMPUNG MANGROVE CENTRE)





ACTIVITIES





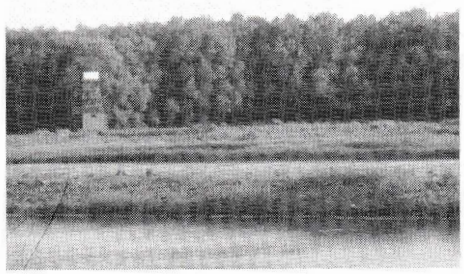
Margasari Village

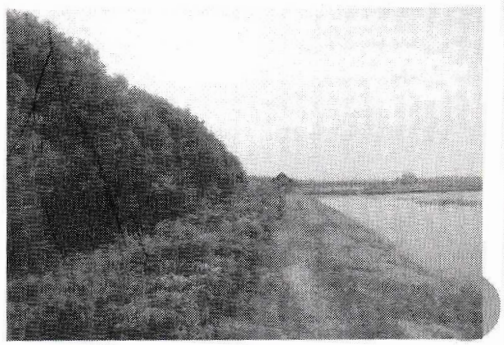
1200 Ha Mangrove Forest

Reforestration since 1997

RESEARCH QUESTION:

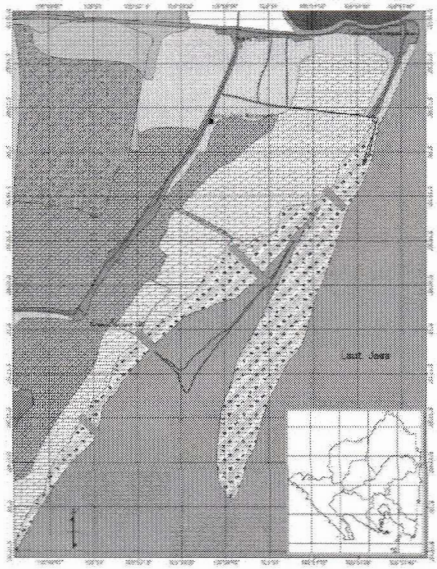
- How is mangrove forest structure after more than 10 years reforestration?
- How is it provide environment services related to nutrients cycles and water quality from litterfall production ?



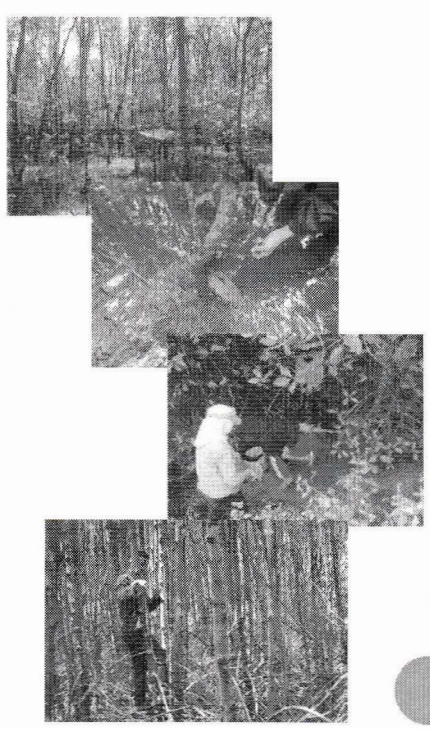


METHOD

- Research was conducted in November 2014 to March 2015
- Located in Mangrove Educational Forest (Lampung Mangrove Centre)



- Vegetation analysis
  - Measuring species formation
  - Important value index
- Nutrient analysis
  - Litter productivity
  - Nutrient released
- Winkler method
  - Phytoplankton spesies
  - Primary productivity



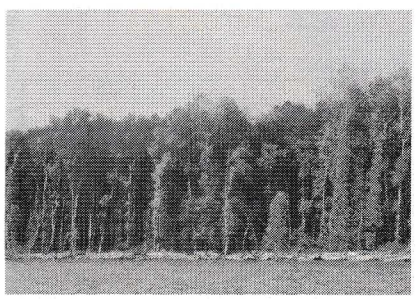
RESULT

- Only 2 species mangrove :
- *A. marina*
- *Witdh 155 m*
- *First zone*

- *R. mucronata*
- *Witdh 188 m*
- *Second zone*

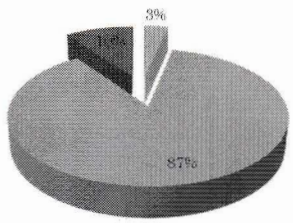
VEGETATION ANALYSIS

	A. marina	*R. mucronata*
Density (trees/Ha)	1.523	905
Frequency	0.73	0.4
Dominance	0.089	0.004
Important Value Index (%)	221,89	78,11

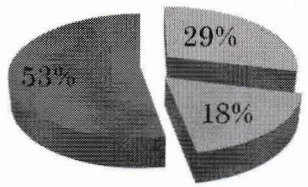


LITTERS PRODUCTION (%)

A. marina



R. mucronata



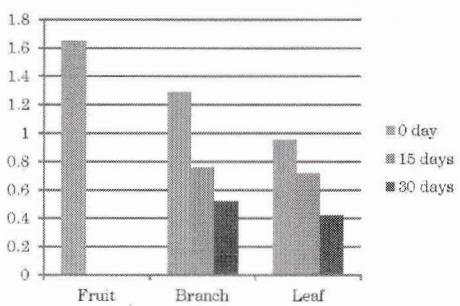
A. marina produced 20.88 ton/ha/year

R. mucronata produced 18.31 ton/ha/year

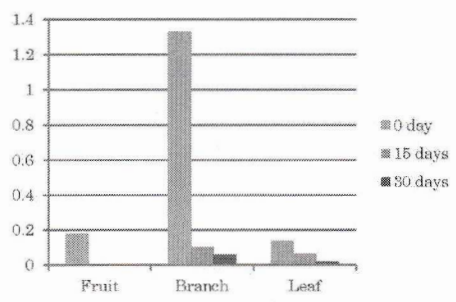
Nitrogen Release

A. marina

N remains (g)



P remains (g)



N Realease (%)

	Fruit	Branch	Leaf
15 days	100%	41,14%	24,5%
30 days	100%	59.56%	55,89%

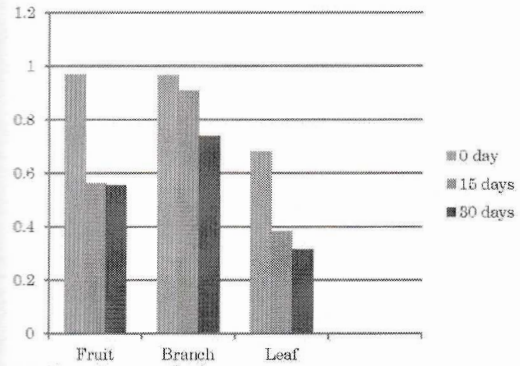
P Realease (%)

	Fruit	Branch	Leaf
15 days	100%	92,26%	54,84%
30 days	100%	95,45%	87,22%

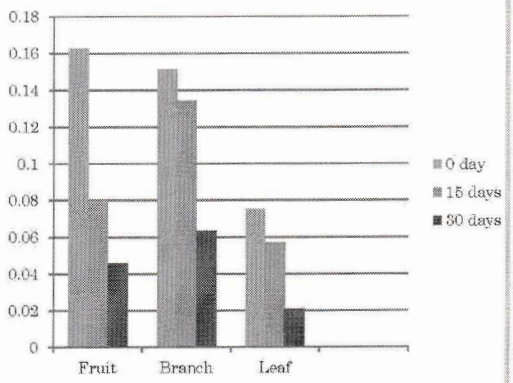
C/N:
Fruit : 20,31
Branch : 39,60
Leaf : 14,51

R. mucronata

N remains (g)



P remains (g)



N Realease (%)

	Fruit	Branch	Leaf
15 days	41,9%	18,72%	43,51%
30 days	42,83%	25,33%	53,39%

P Realease (%)

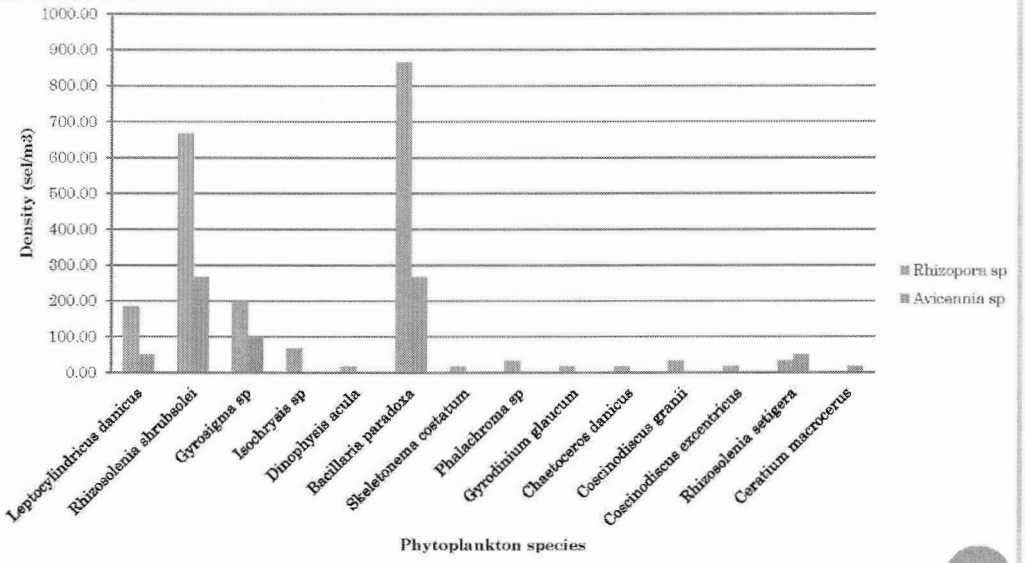
	Fruit	Branch	Leaf
15 days	50,92%	11.26%	24%
30 days	71,78%	57,95%	72,53%

C/N:
Fruit : 29,10
Branch : 47,57
Leaf : 45,57

PRIMARY PRODUCTIVITY

Species	Respiration (mgO^2/L)	GPP (mgO^2/L)	NPP (mgO^2/L)	GP (mgC/l/jam	NP (mgC/m^3/jam)
Rhizopora sp	2,17	5,23	3,07	0,41	408,85
Avicennia sp	1,73	3,35	1,62	0,26	261,72

PHYTOPLANKTON



CONCLUSION

- No vegetation composition changing after more than 10 years reforestration
- Important value index from *A.marina* was higher than *R. mucronata*, its parallel with litter production. In contrast, *R. mucronata* zone has higher primary productivity and phytoplankton diversity.