



The Regional Training Workshop
Economic Valuation of the Goods and Services of Coastal Habitats
March 24 – 28, 2008
Samut Songkram Province, Thailand



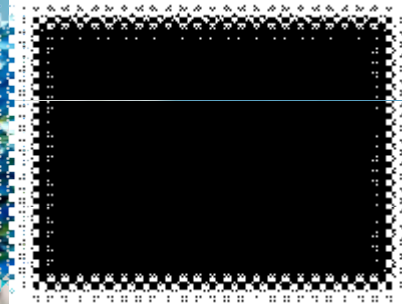
Coastal and Marine Ecosystem Situation of Indonesia



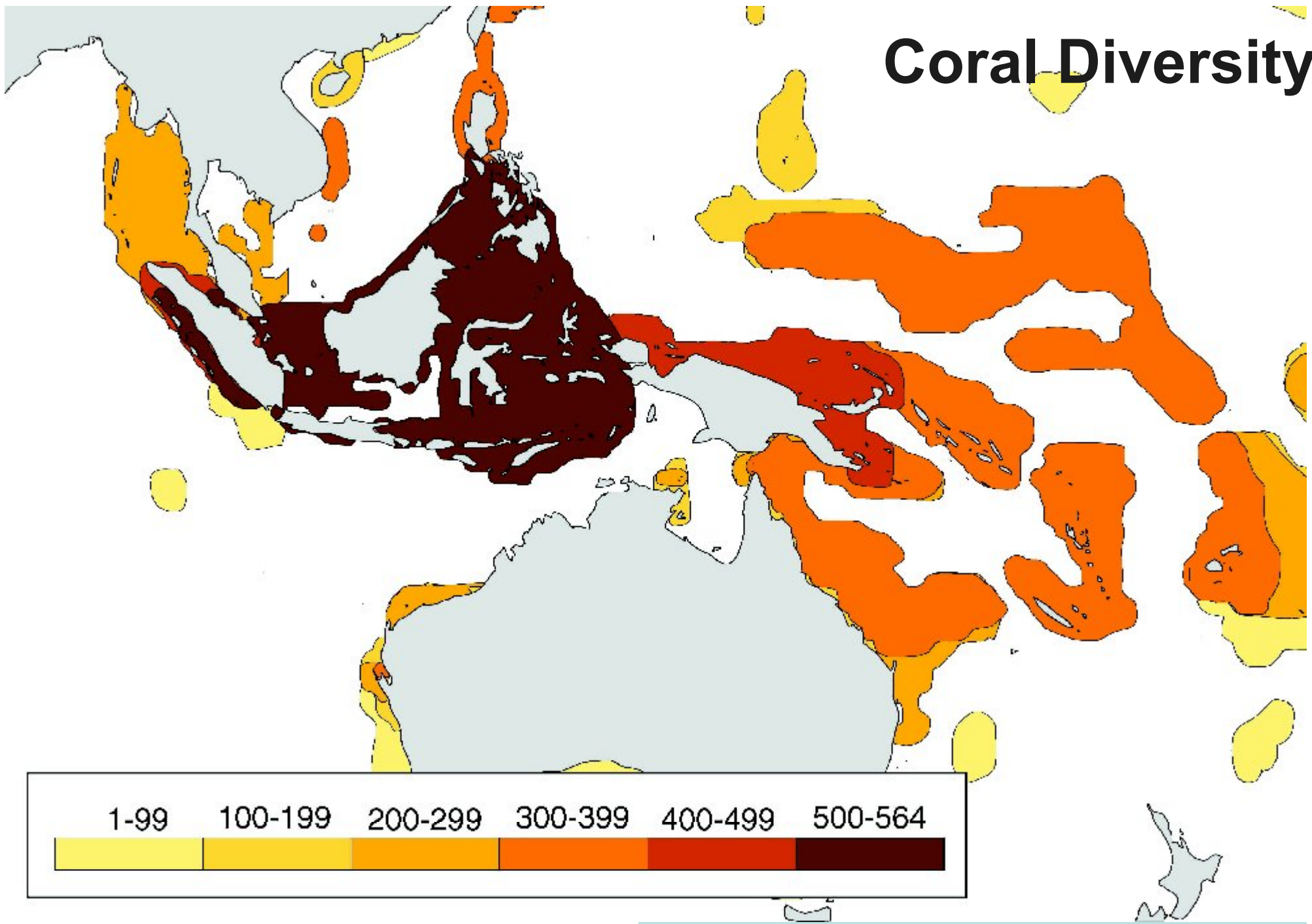
- Bambang
- Agus
- Sofi
- Diding

- CORAL REEF ECOSYSTEM
- MANGROVE ECOSYSTEM
- LAND BASED POLLUTION

Coral reefs scientists have noted that Indonesia is the center of coral diversity. It was reported that 82 genera and about 590 species of scleractinian corals have been recorded in the Indonesian and its surrounding waters (Best *et al.*, 1989; Tomascik *et al.*, 1997; Veron, 2002)



Coral Diversity



Threat to Coral Reef in Indonesia

The five main man-made :

- **poison fishing,**
where cyanide is squirted on coral heads to stun and capture live aquarium and food fish, but killing coral heads in the process;
- **blast fishing,**
whereby small bombs are detonated in shallow reef areas, killing targeted schools of fish, but also killing larvae, juveniles and corals;
- **coral mining,**
where corals are collected and smashed for house construction and lime-production;
- **sedimentation and pollution,**
as a result of logging, erosion, untreated sewage and industrial discharges, which smother and kill the corals; and
- **overfishing,**
which does not destroy corals but reduces abundance and diversity of fish and invertebrates.

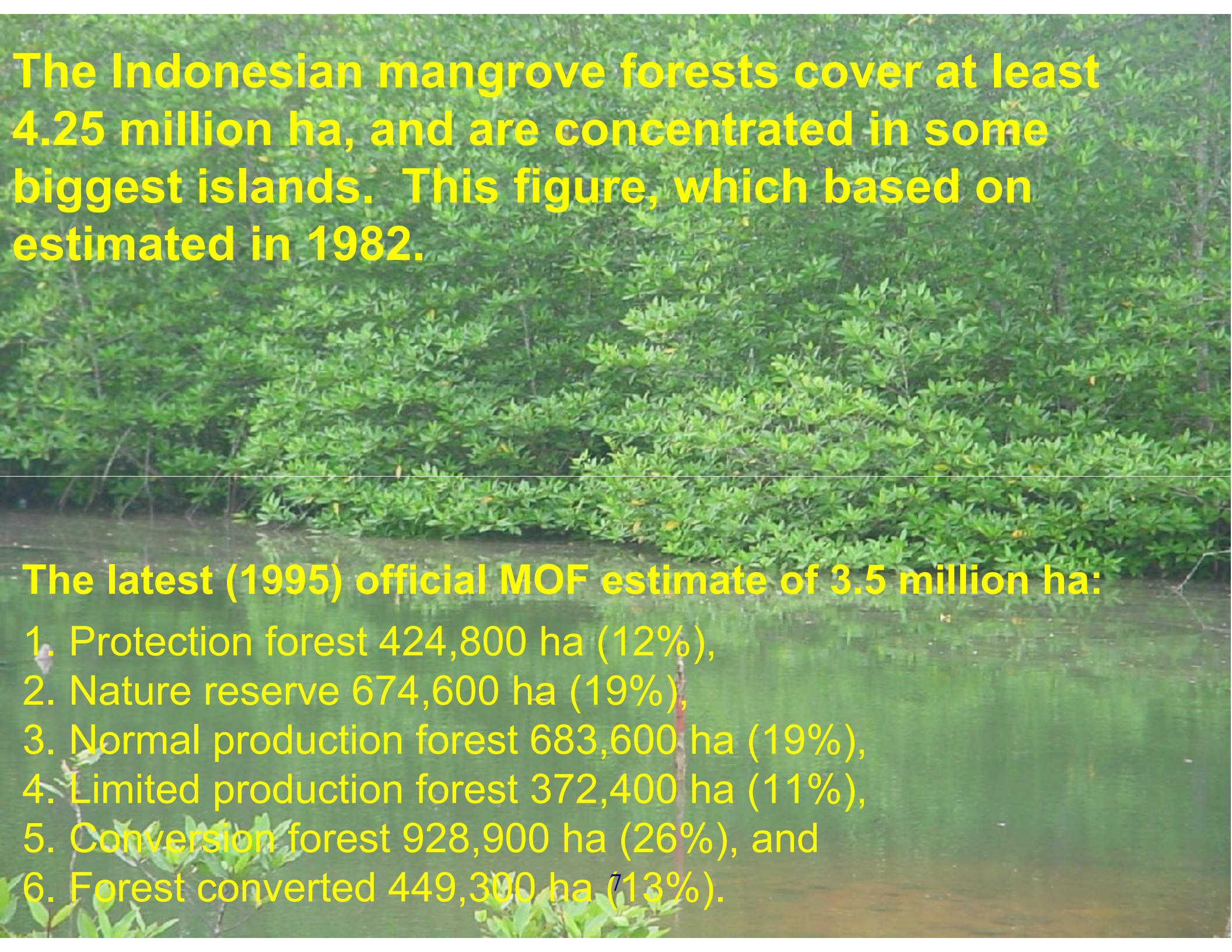
current major threat



Values & Functions of Coral Reef

Types of values	Functions
Direct use value (extractive)	food/other resources (fishery, etc); construction material; pharmaceuticals and other industrial chem.
Direct use value (non-extractive)	tourism and recreation; educational, scientific interest
Indirect use values	biological support; coastal protection
Indirect Non-use values	fall-back life support; gen. resources; global heritage; & known and unknown future uses of the functions above

Spurgeon (1992)



The Indonesian mangrove forests cover at least 4.25 million ha, and are concentrated in some biggest islands. This figure, which based on estimated in 1982.

The latest (1995) official MOF estimate of 3.5 million ha:

1. Protection forest 424,800 ha (12%),
2. Nature reserve 674,600 ha (19%),
3. Normal production forest 683,600 ha (19%),
4. Limited production forest 372,400 ha (11%),
5. Conversion forest 928,900 ha (26%), and
6. Forest converted 449,300 ha (13%).

current major threat :

- domestic exploitation
- salt production
- rice cultivation
- Aquaculture
- oil pollution
- industrialization, settlement and urbanization
- agriculture pesticides etc.
- weed invasion
- coastal erosion
- perception of the public.



Various estimates of the total areas of mangrove in Indonesia show that :

- at the best, approximately 513,670 ha of mangroves have been lost between 1982 and 1993 or 46,497 ha per year,
- the worst scenario 1. 760,825 ha have been lost during the same period, equivalent to 160,075 ha per year 8

Four families dominate mangrove forests in Indonesia:

1. Aviceniaceae (sometime included in the large family Verbenaceae),
2. Combretaceae,
3. Rhizophoraceae and
4. Sonneratiaceae (sometimes included in the Lythraceae)

The utilization trends of mangroves in Indonesia, can be classified into 2 group:

1. Sustainable uses: traditional uses, recreation and wildlife resource, minor products (alcohol. sugar, tannin, honey etc.), marine products, grazing and timber production.
2. Exploitative uses agriculture, marine culture salt production, human settlements, mining and oil exploitation. Exploitative uses of mangrove forests involve conversion of mangrove areas to other uses resulting in irreversible changes with change in land-use pattern. ⁹

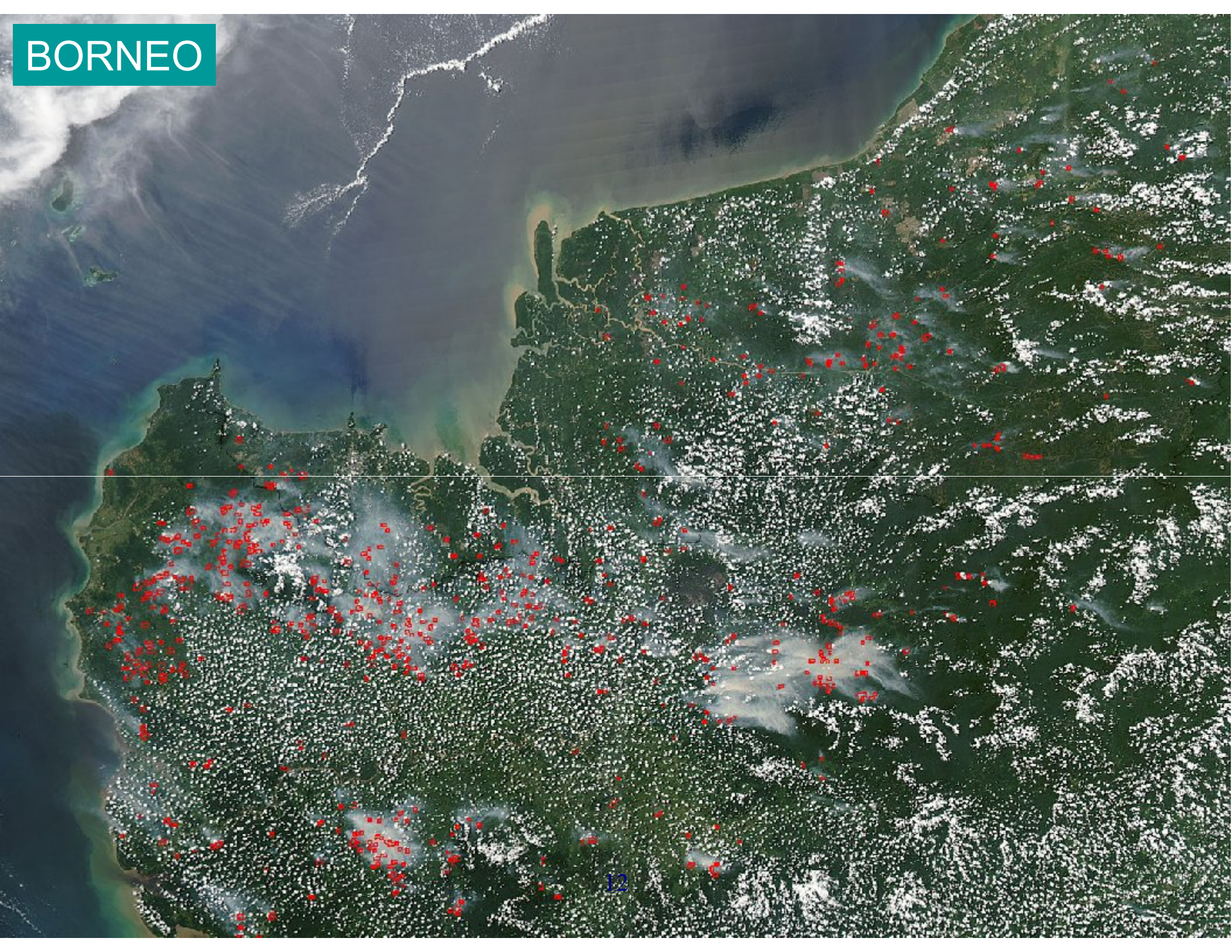
AVERAGE VALUES OF MANGROVE FOREST

No.	ITEM	US\$/Ha
I. Use Value		6.972,97
A.	Ekstraktif (direct use):	6.034,90
1	Timber	539,36
2	Fire wood	495,27
3	Medicines	240,96
4	Prawn	2.944,00
5	Crabs	697,79
6	Fish	993,72
7	Nener (bibit ikan)	37,68
8	Charcoal	13,13
9	Eel	41,92
10	Wild life	25,17
11	Shell	5,90

AVERAGE VALUES OF MANGROVE FOREST (continue...)

No.	Services	US\$/Ha
B.	indirect uses	938,07
12	Wave breaks	452,74
13	Natural tourism	58,22
14	Nursery / hatchery ground	270,76
16	Carbon sink	156,35
II. Non use value		1.045,93
17	Option value	96,57
18	Exixtence value	948,93
III. Total Economic Value		8.018,47

BORNEO



SUMATRA

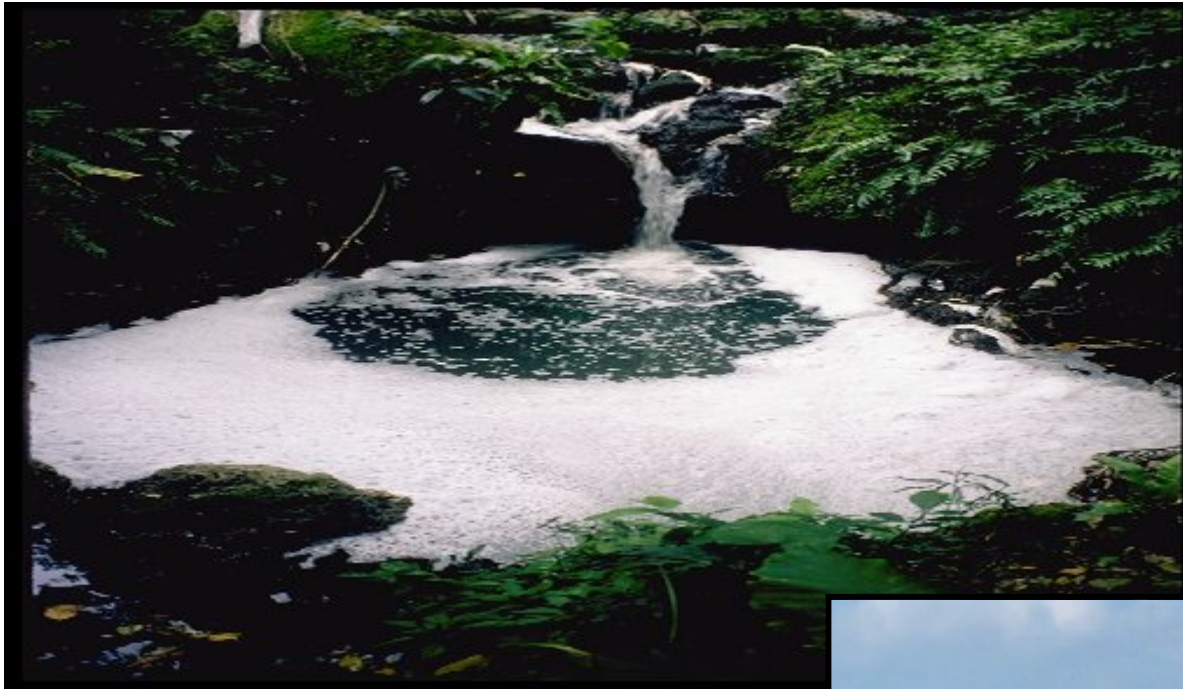


June 22, 1992



January 14, 2001





Land-based source of Pollution



Willingness To Pay for Garbage Management and, Land Based Pollution Demonstration Site Tanjung Riau, Batam

The study at Tanjung Riau Village shows that the community is satisfied with the existing garbage management.

They have perception that Improvement Program of Garbage Management gain benefit for community and environment. Nevertheless, the garbage management has not been applied properly, due to the lack of knowledge regarding the process of the organic and inorganic garbage.

WTP for garbage management is Rp 3,825 and Rp 4,320/household/month for Group A and B, respectively. The output shows that household WTP for garbage management improvement at Tanjung Riau Village is not influenced by community education, household income and expenditure, both partially as well as multivariably.

Willingness To Pay for Sanitation Program, Land Based Pollution Demonstration Site Tanjung Riau, Batam

The condition of sanitation at Tanjung Riau Village is relatively poor, where only a few numbers of houses have in-house toilet equipped with septic tank and its usage is very low even though Group A had taken part in Improvement of Sanitation Management Program.

WTP for sanitation management is Rp 9,383 and Rp 8,239/household/month for Group A and B, respectively. The output shows that household WTP for sanitation management improvement at Tanjung Riau Village is not influenced by community education, household income and expenditure, both partially as well as multivariably.

