LESSSONS LEARNED FROM THE GREEN COAST'S COASTAL ECOSYSTEMS RESTORATION PROJECT IN ACEH

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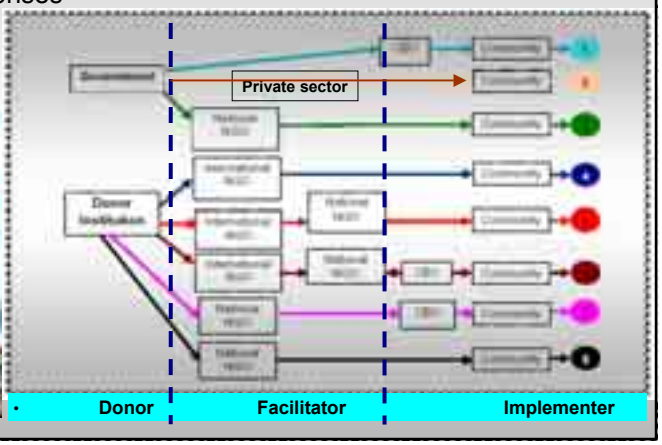
ACTORS AND ROLES IN ACEH-NIAS COASTAL REHABILITATION

- Government
- Donors
- Int'l & National NGOs
- Private enterprises
- CBOs
- Communities

124 International NGOs

430 National NGOs

(Reported by BRR, 2005)

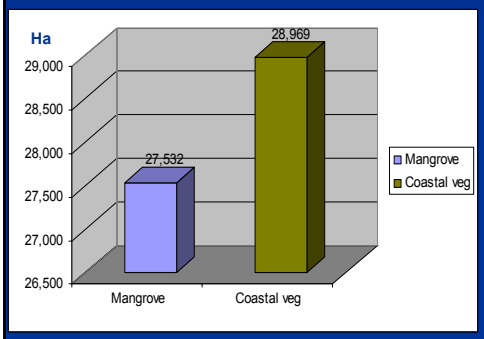


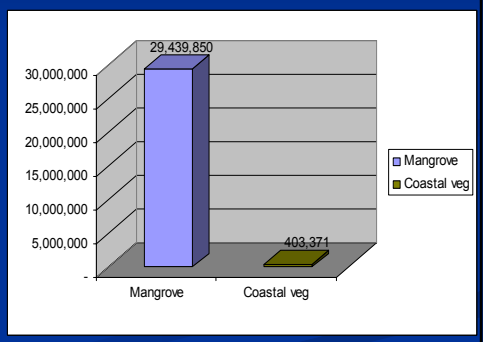
Vegetation Rehabilitation in Aceh and Nias Coastal Ecosystems

- Mangroves (Bakau *Rhizophora mucronata;R.apiculata; R. stylosa*, Tengal *Ceriops tagal*, Tanjang *Bruguiera gymnorrhiza* , Pedada/Bogem *Sonneratia alba, Api-api Avicennia marina, etc*)
- Beach trees (Nyamplung *Callophyllum inophyllum* , Ketapang *Terminalia cattapa* , Kelapa *Cocos nucifera*, Cemara *Casuarina equisetifolia* , etc)

Estimation of area rehabilitation in Aceh & Nias (up to December 2006)

Coastal areas (ha) have been rehabilitated (left) & number of seedling planted (right)

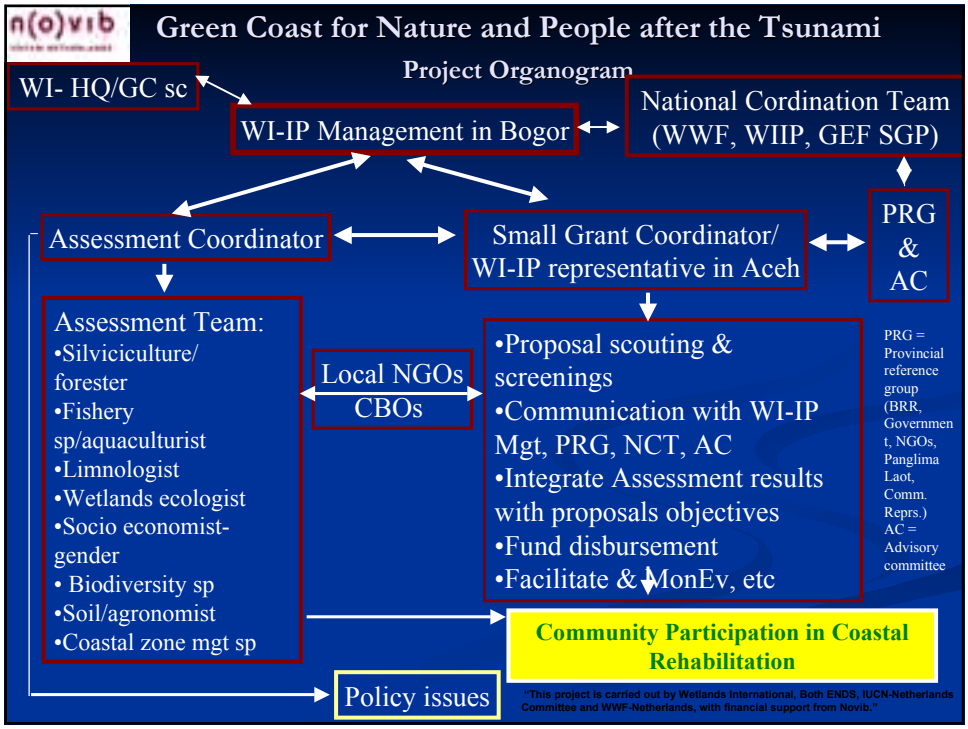




Data dari berbagai sumber, diolah oleh WIIP

HOW MANY PLANTED SEEDLINGS ARE SURVIVED

- NO MONITORING & EVALUATION
- SURVIVAL RATE NOT CERTAINLY KNOWN
- CONSTRAINTS NOT RECORDED WELL



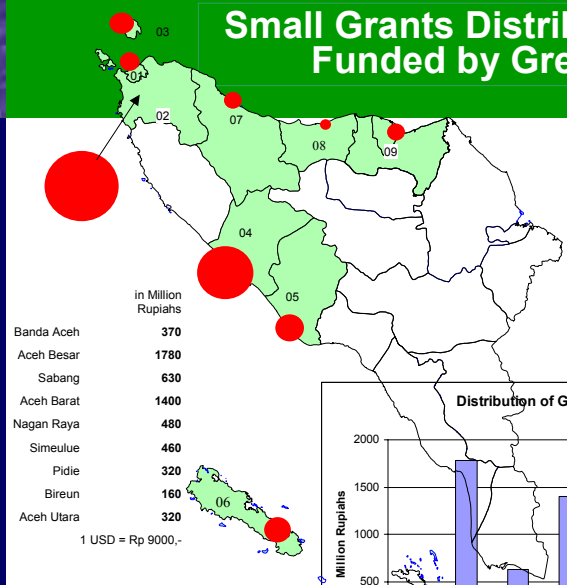
Achievements in Indonesia by WIIP

- Assessment study has been completed, launched and distributed (Indonesian & English version)
- 60 small grants have been distributed in all stretches (various types of livelihood projects created and about 1.5 millions seedlings have been planted)
- Awareness materials have been produced and distributed (posters, flyers, brochures, comics, newsletter etc)
- Mangrove guide books 3000 copies
- Interactive Multimedia Database has been developed (need input from other GC member countries)
- GC project's synergizes with UNEP, FFI, Hatfield, Care projects (more to come with CI, GTZ, etc)

Other partnership

UNEP: awareness, seedlings preparation, twinning programme, green database
FFI : assistance on nursery & seedlings preparation + rehabilitation techniques
GTZ : ditto (under negotiation)
CI : ditto (under negotiation)

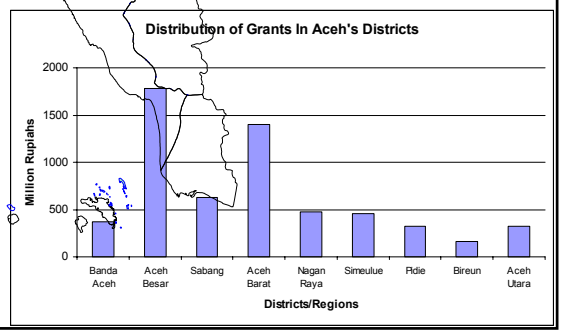
Small Grants Distribution in Aceh Funded by Green Coast



	in Million Rupiahs
Banda Aceh	370
Aceh Besar	1780
Sabang	630
Aceh Barat	1400
Nagan Raya	480
Simeulue	460
Pidie	320
Bireun	160
Aceh Utara	320

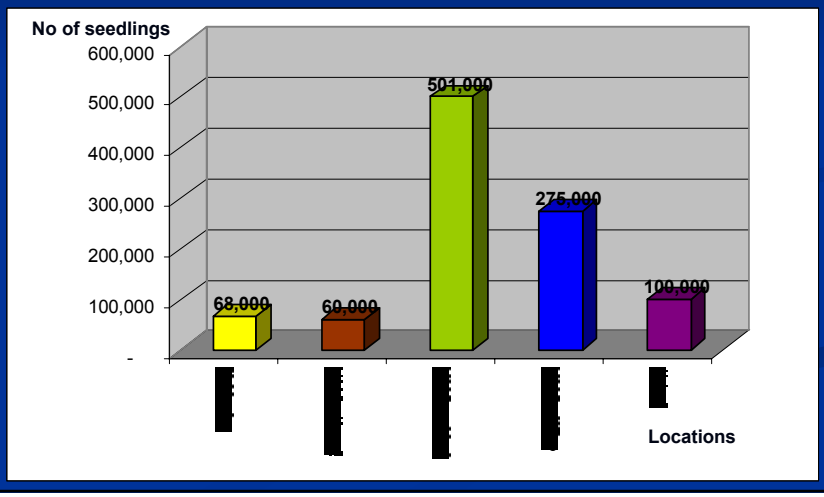
1 USD = Rp 9000,-

Total Rp 8,434,650,000 (Dec 2007)



GC performances on coastal rehabilitation

- **Total coastal area rehabilitated= 630 Ha**
- **Total seedlings' planted : 1,004,000 (mangrove, survived 20 – 90%) + 187,650 beach trees (survived 6 – 95%)**




GC-Rehabilitation Demo site in Kajhu-Aceh - 26 species planted
Launching 21 Nov 05
7 months after, June 06
17 months after, Apr 2007
13 months after, Dec 2006


Results of GC in Lham Ujong-Aceh: Livelihood + Rehabilitation
17 months after, Apr 2007

LIMITATIONS AND CONSTRAINTS IN THE FIELD

1. No blueprint for coastal rehabilitation (where and what to plant)
2. Rehabilitation only a secondary activity (current focus : Restoration)
3. Lack of rehabilitation preparation & skills (nursery & planting techniques)
4. Planting in unsuitable locations (substrates, pests)
5. Problems concerning land ownership status of planting site
6. Business as usual (Rehabilitation using a project approach)
7. Conflict of Interest (rehabilitation vs conversion)
8. Lack of replacement planting and seedling maintenance
9. Lack of monitoring and evaluation
10. Force majeure

No blueprint for coastal rehabilitation

Blue print should at least described:

- how many and where stakeholders working on coastal rehabilitation.
- spatial planning of the district
- information on land suitability,
- land conditions/level of damage,
- the plans of parties concerned with the land's utilization,
- land ownership status, etc

As a result of no blueprint:

- **implementer freely chooses sites,**
- **activity undirected and unorganised.**
- **different implementers planting on the same site.**
- **planting is done arbitrarily without finding out who the site belongs to nor what plans there may be for its development**

Issues: Planting sites, transportation & nursery

pest invaded areas & sandy substartes

dry mud areas

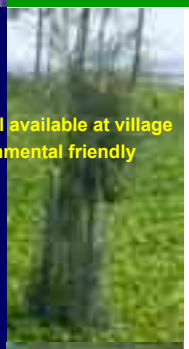
Seedlings removed from poly bags to relieve from transportation

Nursery ground is flooded

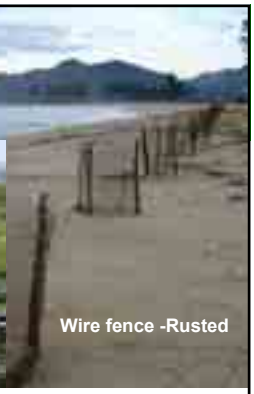
Seedlings protection

- Seedling costs : 30 – 80 Cent US
- Fences costs : 2.5- 5.0 USD

Cheap
Strong
Material available at village
Environmental friendly



Cheap, material easy to find, flexible



Wire fence -Rusted

Fence swallowed by climbing plants, and seedling eventually dies

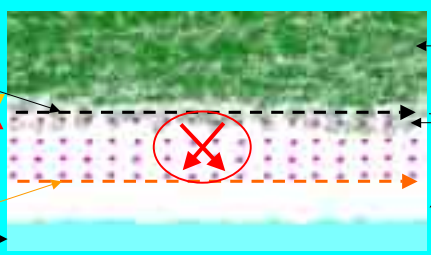
No maintenance & waste of resources

Conflict of interest

Seedlings pulled up from aquaculture ponds as they had been planted without the owner's permission who lived outside Aceh

SG fund to purchase goats
But goats eat planted seedlings

Lessons No1 : where to start ?



PROTECT the sites with Natural regeneration-

Threats: uncontrolled taking of wildlings, forest fire, and land conversion.
GC has been taking care with this issue

1 hectare contain 3,825 natural saplings

Lessons No 2: used biological Indicators

- **Mangrove location: Mud-skippers**
- **Beach trees : Ipomea pes caprae**

Avoid areas infected by barnacles

Lessons No 3: Sites & species selection

Improvement of awareness raising

Recommendation

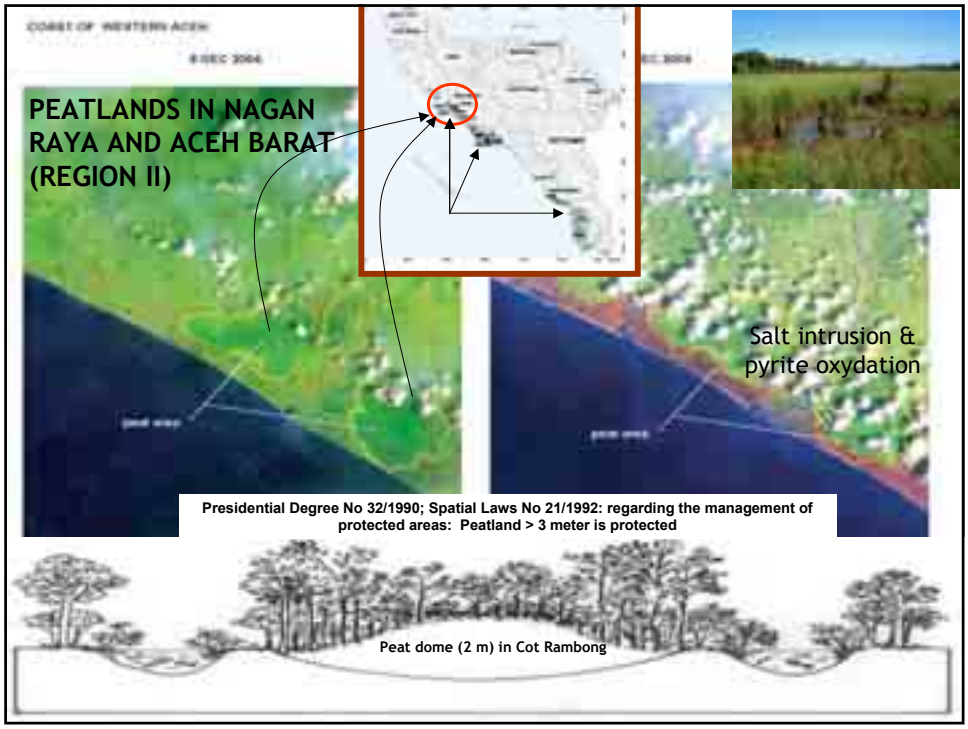
- Proper site and species for rehabilitation
- Enhance community participation
- Capacity building (technical training)
- Establish integrated pilot project sites (livelihood-rehabilitation-policy)
- Data Updates on rehabilitation (sites & number & survival status)
- Improved coordination
- Establish Spatial planning and Green Belt
- Continues Maintenance and MonEv
- Avoid Mono species → Species Enrichment
- Prepare post Rehabilitaton and Recontruction's "Exit strategi"

WHAT & WHERE NEXT ??

GC II in Indonesia (April 07 – March 08):

- Rehabilitation + Livelihood 16 more sites
- Develop Best Practice
- Technical Assessment & input on reconstruction + awareness raising
- GC Network & Lessons learned
- Partnership dialogue with other stakeholders
- M & E

Rehabilitation on Ponds Areas, Lagoons, Peatlands, estuarines, etc
Establish more demo sites



Challenges in Introducing SILVO-FISHERY concept

The way to protect nature and at the same time provides livelihood

Potential area of aquaculture ponds can adopt silvofishery concepts

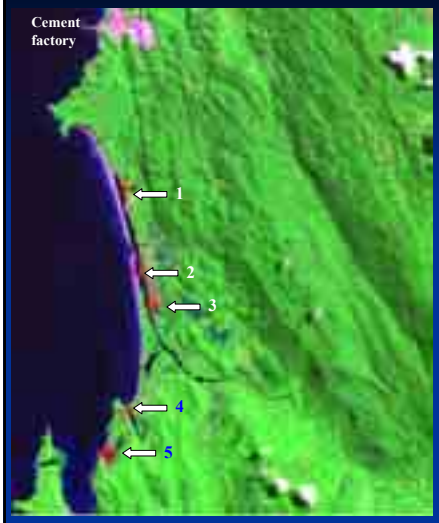
District	Pond area (ha) before tsunami	Damaged pond area/potential for planting (ha)
Banda Aceh	724	724
Aceh Selatan	25	10
Aceh Timur	7,822	2,347
Aceh Utara	10,520	4,208
Pidie	5,056	2,573
Aceh Barat	289	289
Aceh Besar	1,006	1,006
Kota Sabang	28	28
Langsa	2,122	424
Total	27,592	11,609

NB No data are available for Lhoksumawe, Aceh Jaya, Aceh Singkil, Aceh Tamiang, Aceh Bireun, Nagan Raya, Aceh Barat Daya, and Simeulue, which between them had had about 9,000 ha of ponds.

Lots more sites silvo-fishery can be implemented !

(Top) where mangrove could be planted. (Bottom left) Ponds has become a slough for buffalo to wallow. (Bottom right) Pond on Lhoong coast in danger of abrasion. Mangrove therefore needs to be planted along the shore in front.

Rehabilitation of Peatland areas & Lagoons



Location of lagoons in Aceh Besar and its water quality characteristics

Lagoon No 1:
Salinity 6 ppt, Conductivity 10.500µS/cm, pH 6.7, Temperature 29 °C, Dissolved Oxygen 6.8 ppm

Lagoon No 2 dried out.
Lagoon No 3:
Salinity 1.5ppt, Conductivity 2,250µS/cm, pH 7.25, Temperature 29 °C, Dissolved Oxygen 7.6 ppm

Lagoon No 4
Salinity 6.5 ppt, Conductivity 11,000µS/cm, pH 7.1, Temperature 29.1 °C, Dissolved Oxygen 7.0 ppm

Lagoon No 5
Salinity 5 ppt, Conductivity 2,400µS/cm, pH 6.98, Temperature 29.6 °C, Dissolved Oxygen 5.3 ppm


Sand quary
Jetty construction
Fish pond
Crabs cage farm
THREATS in Teluk Belukar-Nias (ICZM required)


Demo site at Pulot Lagoon-Aceh
Kantor perwakilan


Thank You