
RESTORATION, REHABILITATION
AND SUSTAINABLE LIVELIHOODS:
THE IMPORTANCE OF ALTERNATIVE
INCOMES FOR TROPICAL PEATLAND-
DEPENDENT COMMUNITIES.

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INTRODUCTION

- The involvement of local communities is vital for the success of tropical peat restoration.
 - Communities whose livelihoods depend upon on peatlands may destroy restoration efforts through:
 - illegal forest felling,
 - the use of fire to promote agriculture,
 - the destruction of dams
 - Appropriate incentives are needed for local communities to substitute forest degradation-based incomes with alternative livelihoods.
 - This paper focuses on community agriculture and forest management as alternative livelihoods with potential for meeting ‘wise use’ goals
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SUSTAINABLE AGRICULTURE ON TROPICAL PEAT?

- Agriculture is difficult on tropical peat due to the nutrient deficient and frequently toxic soils.
 - But many people already live (or have been settled) on peatlands, so 'wise use' principles can minimize damage and raise incomes to help prevent 'the misuse of these areas by burning caused by careless use of fire' (Silpola: 2007: 4).
 - District-based land zoning approaches can identify where cultivation can succeed with minimal environmental damage
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COMMUNITY-BASED FOREST MANAGEMENT



- CBFM has potential to address the twin goals of tropical peat restoration and alternative income generation for peatland-dependent communities

Opportunities for CBFM in Indonesia

- According to an international study by Angelsen and Wunder (2003) three main types of CBFM have significant potential for poverty alleviation.
 - 1) Increased local control over and formalized benefits from natural (often state) forests (Benefit Sharing)
 - 2) Smallholder tree growing projects on private or community land
 - 3) Income generation from small-scale, wood-based enterprises
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Benefit sharing

- Benefit sharing be valuable to local communities so long as tenure is secure and benefit-sharing arrangements are clearly understood.
 - Formal rights to collect specified types of non-timber forest products (NTFPs), fuelwood and timber from local forests can be an important incentive to participate while incomes from tending tree nurseries, blocking drainage canals and planting trees are often popular.
 - Ecotourism-based CBFM in Meru Betiri National Park reforested degraded areas and raising local incomes
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- In areas with a high level of dependence on fuel wood for cooking, CBFM schemes could investigate opportunities for providing alternative energy household energy sources such as small biogas plants fed by kitchen waste and/or animal manure.

Smallholder tree growing

- Smallholder tree growing may be appropriate on the ex-Mega Rice Project where there is a need to increase land productivity and reduce fire risk.
 - Perennial crops such as rambutan, coffee, coconut, aloe vera and pineapple tolerate peat soils and high water tables thus promoting restoration.
 - Peat-friendly agribusiness involving peat tolerant crops that can easily be processed and marketed offer opportunities for income diversification. Promising examples include *nilam* for perfume oil production, *kumis kuching* for medicinal use, tomatoes for ketchup and *bungamasalan* flowers.
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Even oil palm helps to revegetate degraded peat and protect it from fire and carbon loss.



Small-scale, wood-based enterprises



- Income generation from small-scale, wood-based enterprises could be important for communities living on degraded peat or undertaking CBFM on peat swamp forests.
- Tree species that grow well on peat and can easily be processed locally include rubber (*Hevea brasiliensis*) and *Acacia mangium*
- Soft loans plus training and extension to deliver business skills is very important setting such enterprises up

Limitations of CBFM in Indonesia

- There are limits to the degree of poverty alleviation that can be provided from CBFM without some degree of commercial forestry, so ecological/livelihood trade-offs will have to be made.
 - It is important not to over-romanticize the desire or ability of local communities to be involved in CBFM as they may be far more interested in converting forests for agricultural purposes than in rehabilitating them
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Important criteria for successful CBFM

- Combine land zoning approaches with socio-cultural data to target the most suitable areas
 - Once promising communities are identified, investigate local livelihood portfolios, chart existing peatland uses, determine existing access rights and explore the underlying causes of peatland deforestation/degradation.
 - A detailed analysis of intra-community livelihood priorities can be very important for identifying appropriate income-generating strategies and restoration activities as program incentives must be closely linked to local requirements.
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- Clear economic incentives are needed to stimulate local participation and projects should offer income generating activities that produce a quick return e.g.
- small-scale food processing
- goat/poultry breeding
- biogas plants
- vermicomposting

FUNDING MECHANISMS FOR PEATLAND RESTORATION

- To achieve the twin goals of tropical peatland restoration and alternative income generation, additional funding sources are needed to supplement what is available from existing government forest rehabilitation budgets. Two possibilities are:
 - Payment for ecological services (PES)
 - Carbon credit schemes
 - Biorights schemes.
 - All have potential but are largely still untested
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Payment for Ecological Services (PES)

- PES is based on direct, conditional payments to local landusers for providing environmental services such as carbon sequestration/storage, biodiversity conservation and watershed protection.
 - PES can reduce rural poverty by offering additional incomes to communities willing to be involved in forest/watershed protection.
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- Community peatland restoration lends itself well to PES type payments if ‘buyers’ can be found
- If not, rewards for environmental services (RES) may be an alternative way of linking resource protection to benefits such as tenure security.

Carbon credit funding for peatland restoration

- ‘Avoided deforestation’ (AD) schemes in the voluntary carbon markets sector and ‘Reducing Emissions from Deforestation and Forest Degradation’ (REDD) initiatives offer significant incentives for protecting of carbon stocks in natural forests.
 - They may reduce poverty if suitably targeted.
 - Tropical peat is a good candidate for REDD in terms of preventing further emissions from drainage and fire.
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Biorights

- Biorights involves the ‘establishment of business contracts, providing micro-credit for sustainable development, in exchange for the conservation or rehabilitation of globally important biodiversity or environmental values’ (Silvius and Diemont, 2007: 35).
 - Biorights schemes implemented by WI are currently operating in the buffer zones of the Berbak National Park in Sumatra. The scheme has potential to pay local communities to build dams, block logging canals, and participate in community fire prevention (Limin, *et al* 2003).
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CONCLUSION

- For global concerns regarding carbon emissions to result in sustained action on the ground by resource poor communities whose priorities reflect daily subsistence needs, significant economic incentives are needed.
 - PES, REDD and biorights offer important opportunities but must be flexible and responsive to local needs to promote either tropical peatland restoration or alternative livelihoods.
 - There is uncertainty about whether buyers will invest in peatland restoration and how poor people can take advantage of these emerging markets.
 - Unless these issues can be resolved, the future is problematic for tropical peatlands
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