



I-MHERE PROGRAM
(WORLD BANK)

Adik Su

**PROCEEDINGS OF INTERNATIONAL CONFERENCE ON
NEW PERSPECTIVES OF TROPICAL FOREST REHABILITATION
FOR BETTER FOREST FUNCTIONS AND MANAGEMENT**

17th-19th October 2011

Faculty of Forestry Universitas Gadjah Mada
Yogyakarta, Indonesia

Editors:

**Eko Bhakti Hardiyanto
Svein Solberg
Mitsuru Osaki**

**PROCEEDING OF INTERNATIONAL CONFERENCE ON NEW PERSPECTIVES
OF TROPICAL FOREST REHABILITATION FOR BETTER FOREST FUNCTIONS
AND MANAGEMENT**

Editors:

Eko Bhakti Hardiyanto

Universitas Gadjah Mada, Yogyakarta, Indonesia

Svein Solberg

Norwegian Forest and Landscape Institute, Norway

Mitsuru Osaki

Research Faculty of Agriculture, Hokkaido University, Japan

**Faculty of Forestry
Universitas Gadjah Mada**

2012

**Proceeding of International Conference on New Perspectives of Tropical Forest
Rehabilitation for Better Forest Functions and Management**

17th-19th OCTOBER 2011

Yogyakarta, Indonesia 2011

by Faculty of Forestry Universitas Gadjah Mada

Citation :

**Hardiyanto , E.B, Solberg, S., Osaki, M. (eds.) 2012. Proceeding of International
Conference on New Perspectives of Tropical Forest Rehabilitation for Better Forest
Functions and Management, 17th-19th October 2011, Yogyakarta, Indonesia. Faculty of
Forestry Universitas Gadjah Mada.**

**Published by Faculty of Forestry, Universitas Gadjah Mada
Jl. Agro No 1, Bulaksumur, Yogyakarta 55281**

ISBN : 979-9924-66-9

Cover Design: GLM Printika

Printed in Indonesia

CONTENTS

	Page
PREFACE	v
PHOTO SESSION	vi
CONTENTS	vii
ROBUST MONITORING TECHNIQUES ON LARGE SCALE CARBON DYNAMICS FOR REDD+ IN TROPICAL PEATLAND-FOREST	
Mitsuru Osaki, Kazuyo Hirose, Noriyuki Kobayashi, Muhammad Evri and Farhan Helmy (Keynote Speaker)	1-15
FOREST BIOMASS MONITORING	
Svein Solberg, Rasmus Astrup, Johannes Breidenbach and Arnt Kristian Gjertsen (Keynote Speaker)	16-22
FORESTRY FOR PEOPLE: WE NEED A REFRESHED APPROACH	
Sadanandan Nambiar (Keynote Speaker)	23-24
THE SOCIAL IMPACT OF REHABILITATION PROJECTS IN PROTECTED AREAS: CASE STUDY AT SEBANGAU NATIONAL PARK CENTRAL KALIMANTAN	
Tri Wira Yuwati and Petrus Gunarso	25-29
FOREST RESOURCE MANAGEMENT ON DAYAK KANAYATN COMMUNITY	
Emi Roslinda	30-33
ILENGI AGROFORESTRY SYSTEMS : A STUDY OF CONSERVATION AND UTILIZATION OF TREE SPECIES (Case Studies in South Dulamayo Village, District Telaga, Gorontalo Province)	
A. S. Hiola, N. Wijayanto, S. Adiwibowo, M. Collins	34-37
FARMERS PARTICIPATION ON DIPTEROCARP TREE PLANTING IN SMALLHOLDER RUBBER PLANTATION	
Hesti L. Tata and Meine van Noordwijk	38-41
COMMUNITY-CENTERED FOREST REHABILITATION IN INDONESIA: PAST EXPERIENCES AND FUTURE DIRECTION	
Didik Suharjito	42-46

COMMUNITY-CENTERED FOREST REHABILITATION IN INDONESIA: PAST EXPERIENCES AND FUTURE DIRECTION

Didik Suharjito¹

¹⁾ Department of Forest Management Faculty of Forestry, Bogor Agricultural University
(dsuharjito@gmail.com)

ABSTRACT

Forest resources utilization in Indonesia for very long time since colonialism era to present has been dominated by big forestry companies. This forest utilization practices have been a main cause of forest degradation. Meanwhile, since decades rural communities have actively carried out tree planting activities on their own agricultural land supported by government programs such as greening or afforestation and land rehabilitation. These programs have continuously encouraged the development of household owned forest (*hutan rakyat*). This fact shows that on one hand state natural forests have been degraded, but household made forests have been growing on the other hand.

The first objective of this paper is to describe the past experiences on household owned forest and community forestry development. The government of Indonesia has launched some programs for reducing forest degradation, enhancing forest resources productivity, and reducing forest-communities poverty. Nevertheless these programs have not achieved the goals satisfyingly because of inappropriate approach and inadequate policy. The second objective is to explain how future directions of community centered forest rehabilitation and community forest development should be done. The role of rural communities is inevitably needed in forest rehabilitation since not only they own manpower, but also local knowledge, social capital, and cultural capital. Conversely, forest resources could support communities livelihood and enhance forest communities welfare.

INTRODUCTION

Currently, in Indonesia there are of 6.89 million ha of land categorized as very critical land, 23.31 million ha as critical, and 47.61 million ha as slight critical. According to Directorate General of Land Rehabilitation and Social Forestry/DGLRSF (2008), critical land refers to a piece of land severely damaged due to its lost of vegetation cover so that its functions as water retention, soil erosion control, nutrient cycling, and micro climate regulator is completely depleted. Based on the property rights of the land, those are belong to state forest (inside forest area) of 51.03 million ha and belong to private land (outside forest areas) of 26.77 million ha (DGLRSF, 2008). The area of critical forests and land scattered across the country have increased since 1940s, and drastically increased during political reformation era in 1990s.

The number of degraded watersheds was recorded as 22 in 1984 and increased to 39 in 1992 resulting in 59 river basins in 1998. Since 2006, about 458 degraded river basins need to be rehabilitated. The extension of river basin degradation has increased mainly due to the uncontrollable forests and land degradations (Fulazzaky and Gany, 2009). One of the negative impact of the forest and land degradation is a shortened water-reservoir function. Some research results showed that afforestation or using trees in agricultural fields increased approximately three-fold infiltration. Plantations and agroforestry systems have no significant difference impact, but there was a tendency for agroforestry to exhibit less improvement than afforestation (Ilstedt et.al, 2007). Fulazzaky and Gany (2009) explained that uncontrollable soil erosion is the main

sediment accumulation in some reservoirs in Indonesia. For example, the upper Citarum reservoir in West Java has an average flow rate of 92.3 m³/s and brought about at least 100 million tonnes per year of suspended matter during the period of 1981–1982, it has accumulated 0.47 million tonnes per year in 2004 or about 40% increase within a period of 20 years. Then referred to the Directorate General of Water Resources (DGWR) that some reservoirs and lakes are continuously filled with sludge, such as Sengguruh, Sutami and Saguling reservoirs as well as Limboto and Rawa Pening lakes. Considering the erosion rate of 0.58 mm per year, the designed lifetime of Sengguruh reservoir was estimated for 20 years, however after 20 years (1988–2008) the reservoir was fulfilled with sediments.

LESSON LEARNED FROM THE PAST EXPERIENCES

The government of Indonesia c.q. the Ministry of Forestry has stimulated regreening, afforestation, and reforestation programs for decades. The program is renewed, improved, and continued through various manners including national movement, mass campaign and regreening campaign such as “Kecil Menanam Dewasa Memanen”, “One Man One Tree”, and “OBIT” (one million Indonesian trees) promotion. The ministry of forestry provided seeds which consist of various trees and multi-purpose tree species (MPTS) for private forest development (regreening program) and village nursery development, facilitated farmer groups development, established small farm demonstration plots, constructed check dam / retaining dam, gully plug, infiltration well, and others. During 2004–2008 the government carried out forest and land rehabilitation (GDA-BHL, GERHAN program), in the form of reforestation of 0.96 million ha and regreening program of 1.97 ha on private forest.

The forest and land rehabilitation program has faced some obstacles in the field particularly from local communities’ response. Some research results showed that local communities did not positively respond to the program. They were not interested to be participated in the private forest development as well as in the reforestation of state forest, except for getting work wages. Beside some technical constraints such as low quality of seedling, delayed seedling distribution and unsuitable tree species, local communities resistance is the main cause of program failure (Sulistyono Ekawati, 2006; Nawir, 2007; Amanupunnjo, 2011; Seran, 2011).

State forest rehabilitation has also been conducted through community forest (HKm) development. HKm has been executed since more than fifteen years ago. Recent years the ministry of forestry has also launched people plantation forest (HTR) and village forest programs. Those programs have enhanced more access and rights over state forestland for local communities. Nevertheless, those are still limited, during the period of 2007–2011 state forest allocated for HKm, HTR and HD are respectively 43,388 ha, 631,628 ha and 3,399 ha (**Table 1**). The government has been improving guidance of program implementation including technical procedure and launching training for enhancing knowledge, skill and attitude of the government officer at the field level as well as district and province level. However, it has not adequately shifted the paradigm approach from blue print program to people centered development (Chambers, 1993).

Table 1. HKm, HTR and HD development by province during the period of 2007-2010

No.	Province	HTR		HKm		HD	
		Area (ha)	No location/site	Area (ha)	No location/site	Area (ha)	No location/site
1.	Aceh	8,081	5				
2.	North Sumatera	50,420	9				
3.	West Sumatera	5,345	2				
4.	Riau	25,580	2				
5.	Riau Islands	21,530	2				
6.	Jambi	49,703	7			2,356	1
7.	South Sumatera	42,605	5				
8.	Bengkulu	19,660	1	2,068	2		
9.	Bangka Belitung	7,680	2				
10.	Lampung	24,835	1	33,224	6		
11.	DI Yogyakarta	328	1	1,240	2		
12.	Bali	375	1	150	1		
13.	NTB	3,236	4	4218	5		
14.	NTT	10,730	1	1,248	2		
15.	West Kalimantan	40,690	4				
16.	Central Kalimantan	11,942	1				
17.	South Kalimantan	29,758	6				
18.	East Kalimantan	2,090	1				
19.	North Sulawesi	48,140	9				
20.	Gorontalo	13,005	4				
21.	Central Sulawesi	23,375	5	500	1		
22.	South-East Sulawesi	68,945	5				
23.	South Sulawesi	40,535	13	890	1	1,043	3
24.	West Sulawesi	29,570	4				
25.	North Mollucas	24,120	4				
26.	Papua	29,350	2				
Total		631,628	101	43,388	20	3,399	4

FUTURE DIRECTION OF FOREST REHABILITATION PROGRAM

The government's slogan is *pro-growth, pro-job, pro-poor*. In line with revitalization of forestry sector, the objectives of HTR, HKm and HD programs are to increase forestry sector contribution to national economic development, support village infrastructure development, reduce unemployment, alleviate poverty, and facilitate socio-cultural function of forest, coincide with ecological forest function. The government is targeting that 5.6 million ha of HTR, HKm, and HD have been developed in 2030. The ministry of forestry will also be rehabilitating 11.6 million ha of state forestland until 2030, each year averagely 580 thousand ha. This program will become opportunity for income generating activities in forest villages.

The Indonesian people who categorized as poor people is 31.02 million, mostly (19.93 million) living in rural areas. The Indonesia people who live in or around forest area is now approximately 30 million, certainly most of them are categorized as poor people. The rural poor people are mainly who have agricultural activities as their main source of income. According to agriculture census of 2003, the Center of Statistic Agency reported that the number of

agricultural household is of 24.87 million, mostly (56.4 %) owned land less than 0.5 ha. However, poverty is not only in term of income or consumption, but multidimensional poverty conceived as having many dimensions including material poverty, vulnerability, physical weakness, bad social relations, and powerlessness (Chambers, 2007).

In the next time to come approach of forest rehabilitation program should be shifted from blue print program to people centered development. Forest rehabilitation program is necessary to be based on human, cultural, and social capital of the community. Local communities have ecological knowledge to be used in their daily life such as in agricultural and forestry activities (Salsitya Ekawati, 2006; Agus, 2007; Kieft, 2007; Rerkasem et al, 2009). Refer to Uphoff (2000), social capital has two categories, structural and cognitive forms (Tabel 2).

In the context of forest rehabilitation, collective action could be encouraged by using role and rule in the community. Role and rule are implemented in the decision making (for instance in tree species selection), resource mobilization and management (such as labor and financial sharing), communication and coordination (e.g. among household, among farmer group, between farmers and government field workers, and among government institutions), and conflict resolution (e.g. in term of land ownership and beneficiaries of the project). In the large scale of watershed, community or farmer groups could develop social relationship or networking for cooperation and exchange knowledge and experiences to enhance their capacity in so that achieve mutually beneficial collective action (MBCA). Social relationships among farmers, between farmers and forestry officer, and other stakeholders are developed based upon trust and reciprocation to achieve solidarity.

Table 2. Complementary categories of social capital

	Structural	Cognitive
Sources and manifestations	Roles and rules Networks and other interpersonal relationships Procedures dan precedents	Norms, values Attitudes, beliefs
Domains Dynamic factors	Social organization Horizontal linkage Vertikal linkages	Civil culture, <i>trust</i> , solidarity, cooperation, generosity
Common elements	Expectations that lead to cooperative behavior, which produces mutual benefits	

Source: Uphoff (2000)

REFERENCES

- Agus F. 2007. Use of *Leucaena leucocephala* to Intensify Indigenous Fallow Rotations in Sulawesi, Indonesia. In: Cairns M (ed). Voices from the Forest: Integrating Indigenous Knowledge into Sustainable Upland Farming. Resources for the Future, Washington, DC, USA.
- Amanupunnjo RH. 2011. *Analisis Kinerja Pelaksanaan Gerakan Nasional Rehabilitasi Hutan dan Lahan di Pulau Ambon Provinsi Maluku* (Analysis of the Performance of Forest and Land Rehabilitation National Movement in Ambon Island-Maluku Province). Thesis Graduate School, Bogor Agricultural University. Bogor.
- Chambers R. 2007. Poverty Research: Methodologies, Mindsets and Multidimensionality. IDS Working Paper 293.
- Chambers R. 1993. Challenging the Professions: frontiers for rural development. Intermediate Technology Publications.

- DGLRSF (Directorate General of Land Rehabilitation and Social Forestry). 2008. *Statistik Kehutanan Indonesia: Rehabilitasi Lahan dan Perhutanan Sosial* (Land Rehabilitation and Social Forestry). Jakarta.
- Fulazzaky MA, Gany AHA. 2009. Challenges of soil erosion and sludge management for sustainable development in Indonesia. *Journal of Environmental Management* 90: 2387–2392
- Ilstedt U, Malmer A, Verbeeten E, Murdiyarso D. 2007. The effect of afforestation on water infiltration in the tropics: A systematic review and meta-analysis. *Forest Ecology and Management* 251: 45–51.
- Kieft JAM. 2007. Farmers' Use of *Sesbania grandiflora* to Intensify Swidden Agriculture in North Central Timor, Indonesia. In: Cairns M (ed). *Voices from the Forest: Integrating Indigenous Knowledge into Sustainable Upland Farming*. Resources for the Future, Washington, DC, USA.
- Nawir AA, Murniati, Rumboko L (eds). 2007. *Forest rehabilitation in Indonesia: where to after three decades ?* Center for International Forestry Research.
- Rerkasem K, Yimyan N, Rerkasem B. 2009. Land use transformation in the mountainous mainland Southeast Asia region and the role of indigenous knowledge and skills in forest management. *Forest Ecology and Management* 257: 2035–2043.
- Seran P. 2011. *Strategi Pengembangan Hutan Rakyat untuk Menunjang Pasokan Bahan Baku Industri Kayu di Kabupaten Donggala-Sulawesi Tengah* (the Strategy of Private Forest Development for Supporting Raw Material Supply for Wood Industries in District of Donggala, Southeastern Sulawesi). Thesis, Graduate School, Bogor Agricultural University. Bogor.
- Sulistya Ekawati. 2006. *Kearifan Lokal Petani dalam Merehabilitasi Lahan Kritis (Studi Kasus di Desa Sumberejo, Kecamatan Batuwarno, Kabupaten Wonogiri)*. *Jurnal Penelitian Sosial dan Ekonomi Kehutanan* Vol 3 No 3: 191-204.