COMPLETION REPORT

ITTO Project RED PD 064/11 Rev. 2 (F)

"Promoting Local Community Initiatuve on The Rehabilitation of Mangrove Ecosystem with Demonstration Activities in Bintan District, to Reduce Further Deforestation and Forest Degradation"

Host Government :
Indonesia

Executing Agency :
Directorate General of Watershed Management and Social Forestry Development, Ministry of Forestry

Jakarta, December 2014

Project Number	: ITTO RED PD 064/11 Rev. 2 (F)	
Project Title	: Promoting Local Community Initiatuve on The Rehabilitation of Mangrove Ecosystem with Demonstration Activities in Bintan District, to Reduce Further Deforestation and Forest Degradation	
Starting Date	: December 2012	
Duration of Project	: 24 months	
Project Cost	: Total	US$ 555,887
	ITTO	US$ 504,317
	Government of Indonesia	US$ 51,570
Type of Report	: Completion Report	

Project Staffs

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Executing Agency	: Directorate General of Watershed Management and Social Forestry Development, Ministry of Forestry
Place and Date Issued	: Jakarta, March 2012

FOREWORD

Project ITTO RED PD 064/11 Rev. 2 (F) is a cooperation project between the Government of Indonesia in this case the Ministry of Forestry and the International Tropical Timber Organization (ITTO). General objective of the project is to promote activities of sustainable community based Mangrove ecosystem management in Bintan. While the specific objective of the project is to support increasing damage control on mangrove ecosystem.

Shoreline areas and mangrove ecosystems subjected to exploitation of natural resources and environmental pollution due to the demands of development. Therefore this project was closely related to the REDD program (Reduced Emissions from Deforestation and forest Degradation).

Based on the fact above, it is expected that this project can provide an increasing of community capacity in forest management through the application of the principles of Community Forestry. Communities suround forest should have access to the knowledge and skills necessary to implement Community Forestry, thus fulfilling their role in the implementation of REDD.

ACKNOWLEDGEMENTS

We would like to take this opportunity to acknowledge those individuals and institutions that have actively involved in the project cycle, from its development stage to project completion. First of all, we would like to express our sincere thanks to ITTO and donor countries for financing the project that made its implementation possible, we are particularly indebted to Mr. Emmanuel Ze Meka, the ITTO Executive Director, and Mr. Steven Johnson, the ITTO Assistant Director of Trade and Industry, for their continued support to the project implementation.

Secondly, we are also thankful to Dr. Ir. Hilman Nugroho, MP, Director General of Watershed Management and Social Forestry Development in his capacity as the Chair of the Project Steering Committee and as the Head of the Executing Agency; Dr. Ir. Murdiyono, MM, Secretary of Directorate General of Watershed Management and Social Forestry Development; Dr. Ir. Haryadi Himawan, MBA, former Director of Social Forestry Development; Ir. Wiratno, M.Sc, Director of Social Forestry Development; and Ir. Sutrisna, Head of Riau Islands Watershed Management Center, for their respective useful and valuable advices that facilitated the smooth implementation and completion of the project. In addition, our special thanks should also go to Drs. Ahmad Izhar, Head of Bintan District Agriculture and Forestry Service, for their excellent support in making the necessary arrangements for implementation of project activities.

Finally, we would like to express our sincere gratitude to the Consultants, Trainers, Heads of Community Forest FMUs, local community groups and other parties as well as individuals, whose names cannot be each mentioned here, for their respective excellent cooperation and support in one form and another to project implementation.

LIST OF ABBREVIATIONS AND ACRONYMS

Bakau	: Part of Mangrove
BPDASPS	: *Balai Pengelolaan Daerah Aliran Sungai dan Perhutanan Sosial* / Watershed Management and Social Forestry Development
CBFM	: Community Based Forest Management
CIFOR	: Center for International Forestry Research
DAS	: *Daerah Aliran Sungai* / Watershed
DG	: Directorate General
FGD	: Focus Group Discussion
FMU	: Forest Management Unit
HKm	: *Hutan Kemasyarakatan* / Community Forestry
ITTO	: International Tropical Timber Organization
IUPHKm	: *Ijin Usaha Penggunaan Hutan Kemasyarakatan* / Community Forest Utilization Permit
Menhut	: *Menteri Kehutanan* / Minister of Forestry
MIC	: Mangrove Information Center
MoF	: Ministry of Forestry
NGO	: Non Government Organization
NTFP	: Non Timber Forest Product
Perpres	: Precidential Decree
PC	: Project Coordinator
PMU	: Project Management Unit
PSC	: Project Steering Committee
REDD	: Reduced Emissions from Deforestation and forest Degradation
RLPS	: *Rehabilitasi Lahan dan Perhutanan Sosial* / Land Rehabilitation and Social Forestry
SFM	: Sustainable Forest Management
YPO	: Yearly Plan Operation

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EXECUTIVE SUMMARY

This project aims to contribute to the improvement of mangrove ecosystem quality in Indonesia by using demonstration Area in Bintan District through local community participation. Its specific objective is to rehabilitate the degraded ecosystems in Bintan District to promote their sustainable management**.**

According to Government Regulation No. 73 Year 2012, the policy of community-based management of mangrove ecosystems is to improve and preserve important ecological values, socio-economic and cultural, in order to increase incomes and support sustainable development.

Community-based management of mangrove ecosystem is a dynamic and ongoing process that brings together the various interests (government and society, science and management, as well as sectoral interests and the general public). This project emphasizes that community as the main resource, should be an actor in the management of mangrove resource.

The expected outputs of the project are: (1) Draft policies and strategies for the management of mangrove ecosystems in Bintan District; and (2) Increased capacity in community-based management of mangrove ecosystems (Community Forestry / HKm) in the Bintan District. It is expected that after project is completed, District strategies on mangrove forest management will be institutionalized and adopted by various levels as action program in improving mangrove ecosystem in Bintan District by local communities and thus promote reducing emission from deforestation and degradation.

The successful implementation of the project will generate awareness among local people and stakeholders to participate in managing mangrove forest in a sustainable way. Local government, communities and private sector will get incentives from the ongoing effort in implementing conservation and forest management in reducing emission from deforestation and degradation.

Target location of the project is Bintan District, Riau Islands Province. Mangrove forest in Bintan has coverage ± 8,023 H area. Mangrove vegetation conditions in Bintan has a fairly high species diversity , as many as 50 species belonging to 27 families scattered in Siolong Island, Kelong Island and Mangrove Bay. Common types of mangrove that we can find in Bintan are Avicenia mariana, A. officionalis, A. alba, Bruguera gymnarrhiza, B. parviflora, B. sexangula, Rhizophora apiculata, R. mucronata, Sonneratia alba, S. caseolaris, Excoecaria agalloca, Xylocarpus granatum, X. moluccensis, Nypa fruticans, and others. Associate mangrove species are also very common to find such as hibiscus, ketapang, coconut, butun and various other types.

Mangrove forest in Bintan is used as a protective buffer zone. Current conditions of mangrove ecosystem in Bintan is changes in land use for other purposes is still going on, especially in the mangrove area. Therefore, the protection of the mangrove ecosystem needs to be improved so that the existence and preservation of mangrove forests as protected areas is maintained.

1. Project Identification

1.1. Context

Indonesia is an archipelago consisting of ± 17.500 islands with a shoreline of around 95.181 km, making Indonesia to possess very extensive shore area, a land area lying next to the sea with a high complexity of problems. In its management, shoreline area outside forest is managed by multi stakeholders, among others the Ministry of Forestry, Ministry of Maritime and Fisheries, Ministry of Public Works, Ministry of Internal Affairs, District/City Government, and others.

Shoreline area consists of mangrove ecosystem, coral reef ecosystem, seagrass and shoreline forest vegetation. The Ministry of Forestry regards shoreline area as part of a downstream watershed area, and commensurate with its habitat is dominated by mangrove forest and shoreline vegetation/forest. Mangrove is a forest type growing naturally in the ebb and tide area.

As an archipelago with 28 large islands and 92 outermost small islands, Indonesia has a sufficiently large area of mangrove forest spread in 257 Districts/City and in 32 Provinces. Based on result of inventory and identification conducted in year 2006 by the Directorate General of Land Rehabilitation and Social Forestry, the Ministry of Forestry, mangrove forests in Indonesia covers an area of more than 7,7 million hectares spread in the islands of Sumatera : 4.174.041 ha, Java: 338.243 ha, Bali, West Nusa Tenggara and East Nusa Tenggara: 61.214 ha, Sulawesi : 201.266 ha, Kalimantan : 1.373.300 ha, the Moluccas and Papua: 1.610.343 ha.

Mangrove as an ecosystem has various functions already familiar for a long time, among others: 1). Physical function. The typical root system of mangrove is able to control shore abrasion, the pounding of the sea waves/tsunami, absorb and mitigate polutants from water bodies and the air, trap sedimentation, and control the intrusion of sea water inland, mangrove also reduce high velocity wind speed; 2). Biological function. Mangrove is a habitat for various species of flora and fauna, a place of breeding, nurturing and food niche for many aquatic biotas; 3). Economic function. Mangrove wood is used to produce charcoal, construction wood and other purposes, non wood forest produce and environmental services such as clean water, ecotourism and others; 4). Ecological function. Have the role of carbon sink, absorbing carbon from the air and enhance the world carbon reserve.

However, mangrove area is continually decreasing every year as a result of the lack of attention on its aspects of sustainable management and utilization to such an extend that out of the total area of mangrove in Indonesia which is recorded to be + 7,7 million ha, 3,250 million ha (41,9%) is recorded to suffer serious damage, 2,13 million ha (27,4 %) is damaged and only 2,38 million ha (30,7 %) is in good condition.

Most, about 70%, of the mangrove ecosystem damage occurred in outside forest area which is caused among others by conflicts in tenurial rights, conversion of mangrove land into fish ponds and other land uses, as well as conflicts in rights and posession of mangrove wood and its derivatives. The increasingly stronger economic demand on mangrove exceeds its carrying capacity, most often ignoring its ecological function.

Bintan district is an archipelago District because the area consists of several islands - large and small islands, which accounted for 241 of the island. The total area of Bintan District is 87.717,84 km2, but the land area is only 1.313,40 km2 or 1.49% of the total area of the district. This condition indicates that the region is dominated by coastal ecosystems that are specific and have a diversity of biodiversity and genetic resources is high. As an archipelago, partly overgrown with mangrove forest area with a width of a few meters to hundreds of meters and historical developments have relatively different. Mangrove areas in Bintan district has a very important function for the protection of biodiversity and ecosystems as well as a life support system.

Extensive mangrove forest in Bintan regency reached 7.956 hectares spread over 10 districts and has great potential to be developed as a supporting livelihoods around (DG BPDASPS 2013). Characteristics of mangrove areas in Bintan district, among others are:

- Productivity biological richness is high enough.
- Being activity centers: recreation, transportation, industrial, residential, ports, and services.
- The population density is high enough.
- The intensity of development is quite high.
- In some people there who assume that the coastal region is an area of open access (open access).
- Vulnerable to changes in the environment (including small islands).
- Vulnerability to natural disasters due to abrasion, hurricanes, etc.

In general, the condition of mangroves in Bintan district is still pretty good, but in some areas have suffered damage as a result of the development of human settlements, land transport infrastructure development, as well as logging community. Damage to the mangrove areas is expected to be greater in the future, because of the development of society and the interests of economic development Bintan regency increasing every year.

Through funding proposal to ITTO, the project has the aim of promoting the rehabilitation activities to reduce degraded mangrove ecosystem and improve critical land quality along the shoreline by having sample activities at Bintan island, Riau Islands Province. The short term aim of the project is to control mangrove forest exploitation activities by communities through pilot activities in the area.

The output are 1) Policies legislation on mangrove forest Management in Bintan District formulated; and 2) capacity of communities to rehabilitate the degraded mangrove area at Bintan Island improved.

The project beneficiaries will be the communities, Government sectors, and private sectors. Longterm impact of project are among others: a). CO2 emissions reduced, 2) Reduced poverty and improved livelihoods; and 3). Avoided vulnerability to disasters.

The project activities will be finalizing the draft) Policies legislation on mangrove forest Management of Bintan District through coordination meeting among stakeholders, review on the existing regulation, carry out training to improve capacity of the communities in managing mangrove forest, giving extension and facilitation to the communities on appriate knowledge and technology on marove forest management and product processing.

The project cost is US $ 555,887. A significant amount of fund is expected to come from main donor (ITTO), estimated about US$ 504,317 (90 %) which will be needed for twenty four months. Other contribution will come from the Executing Agency – Directorate General of Watershed Management and Social Forestry Development – US $ 51,570 or 10 % (in-kind) of project cost

1.2. Origin and problems addressed

Combating climate change is one of the main priority of the Government of Indonesia in forestry sector and the environment. The Government has put the target that by 2020 it would be able to reduce emissions by 26%. It is well known that deforestation and forest degradation – including in community forests – caused by improper forest management are the main contribution to the emissions. Illegal land conversion and clear felling contributes to the release of CO2 to the atmosphere.

Capacity building for community forests through adoption of the principles of community based forest management (CBFM) is essential to the success of Reduced Emissions from Deforestation and forest Degradation (REDD). Forest-dependent communities and indigenous people must have access to the necessary knowledge and skills in order to implement CBFM and

thus fulfill their role within REDD implementation. It provides a sound framework through which REDD can provide financial and livelihood benefits to forest-dependent communities and indigenous people by acknowledging their essential long term role in sustainable management of forest ecosystems.

Shoreline area and mangrove ecosystem are the targets of natural resource exploitation activities and environmental pollution as a result of development demand which has a tendency to focus on economical aspects. More profit and economic benefit that could be gained, the heavier the destructive weight is burdened on the environment. These environmental impacts could be identified by the presence of shoreline area degradation and the diminishing area mangrove ecosystem.

At the present time conversion of mangrove ecosystem has occurred to become agriculture land, fisheries, and human settlements spread over almost all of Indonesia.

The damage on shoreline areas will have influence on ruining the socal economic condition of the communities living within the area or in its environs. The degradation of mangrove ecology will impact on the lowering of fish catch and the reduction of income of small fishermen in the said shoreline area. Uncontrolled exploitation and degradation of mangrove area will result in ecosystem change of the shoreline area such as destruction of coral reefs, lowering of fish biodiversity, reduction of mangrove forest area, shore abrasion, intrusion of sea water and extinction of rare flora and fauna.

From the total mangrove area in Indonesia of around 7,7 million ha, it is recorded that about 3,250 million ha (41,9%) has experienced heavy damage, 2,13 million ha (27,4 %) are in a damaged condition and only 2,38 million ha (30,7 %) is still intact.

Excessive felling of mangrove forest not only reduces water infiltration area, increases abrasion and natural disasters such as erosion and floods but also causes the loss of circulation hub and production of carbon dioxide (CO2) and oxygen (O2) gasses needed by human beings for the perpetuity of their lives. Mangrove has an important role in absorbing free carbon. Photosyntesis changes inorganic carbon (C02) into organic carbon in vegetation. In most ecosystems, this vegetable material will rot and releases back its carbon into the atmosphere in the form of CO2. But mangrove forests contain largely of organic materials which do not rot. Because of it, mangrove forest functions more as a carbon absorber rather than a carbon source.

According to CIFOR's Research, mangrove forest could store 800-1.200 ton carbon per hectare and release emissions smaller than emissions from terresterial forest. That is why mangrove forest very important in maintaining the micro climate. Evapotranspiration of mangrove forest is able to maintain humidity and precipitation of the area, as such it keeps the microclimate in balance. Mangrove ecosystem is also able to prevent the development of acidic sulphate soil due to the prevention of the oxidation of pyrite layers and prevent its development in its natural condition.

The damage to the mangrove forest will affect the lowering of welfare and quality of life of communities living in the shoreline and disturb the environmental function of mangrove forest in the location. Therefore, damaged mangrove – within as well as outside forest – must be rehabilitated to return the function of the mangrove ecosystem and at the same time utilize mangrove commensurate with its carrying capacity and function so that mangrove could protect the existence and productivity of shoreline ecosystem and provide meaningful social economic and ecological benefit to communities living in the shoreline and its environs.

Through the project proposed by ITTO funding, activities of mangrove wood utilization from mangrove area by the communities will be controlled. Through facilitations and assistance in mangrove area management by using various schemes such as Village Forest, Community Forest, People Forest and others, it is assumed that positive results will be reached which are: mangrove tree cutting will be better planned in order that sustainability of mangrove forest functions in aspects of economy, ecology, social and cultural could be guaranteed. With schemes of Community Forest or Village Forest, government has a clearcut tool in its development and

control. Promoting of community's forest scheme in the conservation and protected area will have more significant impact on the environmental improvement as they will not be allowed to harvest timber but rely only on non timber forest produce and/or benefits from environmental services The Indonesian Draft Revised National REDD+Strategy (24 September 2010) indicates plantation establishment by communities as one of the instruments to be used. Within this Strategy, the Forestry Sector Development Reformation Program includes activity: "Improvement of reforestation in the deforested areas that is transparent, accountable and participative, particularly inside the forest areas through Partnership, Village Forests, Community Forest Programs and other programs".

Such project in Indonesia has tried to improve the livelihood of local communities living inside and in the surrounding forest areas as well as to estimate carbon emission and finding emission reduction effort in several type of forests. Mangrove forest is one of the target area.

2. Project Objectives and Implementation Strategy

2.1. Project rationale

Conservation of mangrove ecosystem must be controled through implementing the strategy of mangsove ecosystem management with the principle of “no net loss” Mangrove ecosystem management should be implemented as an integral part of watershed management as a whole. Therefore, mangrove ecosystem management need political commitment and strong support from the Central Government, Regional Government and related stakeholders.

Coordination and cooperation among institutions, vertical and horizontal, and with other stakeholders is very important to guarantee the emplementation of mangrove ecosystem management policies.

National mangrove management policy has been stipulated in Presidential Decree number 73 of 2012 on the National Strategy Mangrove Ecosystem Management. Presidential Decree is a national policies and programs to achieve sustainable management of mangrove ecosystems for the welfare of society. Presidential Decree intended to implement the mandates that in order to do the mangrove ecosystem management strategies, the Local Government (both provincial and district / city) need to develop Mangrove Ecosystem Management Strategy at the level Provincial and District / City. The mangrove management strategy serves as a guideline for the parties in the sustainable utilization of mangrove areas.

Within the framework of community development around the forest, the Ministry has established a policy on the use and management of forests for local communities through Community Forestry and Village Forest as stipulated in the Regulation of the Minister of Forestry Number: P.37 / Menhut-II / 2007 (and amendments) and P .49 / Menhut-II / 2008 (and amendments). Through this policy, the people who live in and around forests and life depends on the forest, given the opportunity to use or manage forests to improve the economic security. Based on the ministerial policy, then there are opportunities to improve the well-being of people around the mangrove area in Bintan district scheme through Community Forestry or Village Forest.

This project was designed to deal with capacity building for the application of Sustainable Community Based Mangrove Management involving stakeholders through drafting District Policy and increasing capacity of communities in mangrove management and rehabilitation.

2.2. Project objectives and implementation strategy

The development objective of the project was to promote the rehabilitation activities to reduce degraded mangrove ecosystem and improve critical land along the shoreline of Bintan island. Its specific objective was to rehabilitate and controle mangrove forest exploitation by communities at Bintan island

The implementation strategy pursued can be outlined as follows:
In formulating Draft policy and strategy on community based mangrove ecosystem management in Bintan District :

- Provide baseline data of mangrove ecosystem in Bintan District through data collection and processing of mangrove potential, carbon potential and carbon emisions from mangrove.
- Collect and analyze data and information of Communities Social economy
- Facilitating the coordination in the making of community based mangrove ecosystem management policy amongst related stakeholders in Bintan District
- Conduct stakeholder consultation/dialogue and participatory discussions with local communities, private sectors and other relevant stakeholders (local government, independent

assessment body, , etc.) concerning the importance and benefit of mangrove ecosystem management in Bintan
- Carry out intensive discussions with community forestry group member in Bintan District
- Carry out intensive discussions with related stakeholder in formulating draft Policies and Strategies for the community based mangrove ecosystem management in Bintan District, and facilitate the legality of the policies

To Increase the capacity of community based mangrove ecosystem management (Community Forestry)

- Preparing the materials of dissemination on the implementation of community participation in the community based mangrove ecosystem management (Community Forestry).
- Conduct trainings for communities
- Provide structure for developing mangrove ecotourism (Mangrove Information centre, mangrove nursery, motor boat)

2.3. Assumptions and risks

The assumptions made regarding the development objective were: i) local governments support policy on Community Based Sustainable Mangrove Management application, and ii) Community is aware and of sustainable mangrove management. The Ministry of Forestry (MoF), consistently supported implementation of Community Based Sustainable Mangrove Management; local governments have always involved in the training or dissemination activities indicating their support on Community Based Sustainable Mangrove Management..

The assumptions made on the specific objective were: all relevant stakeholders are committed, the communities actively participated and the local governments support project activities. These assumptions held true during the project duration. Implementation of the project, fortunately, faced no problem relating to these assumptions.

The risks that were also anticipated were related to unavailability of training instructors as scheduled and reluctance of local communities to attend scheduled training sessions and meetings. Un-availability of training instructors, however, had been anticipated by listing larger number of experienced instructors than actually needed for implementation of the training program. These professionals had been contacted in advance to ensure their in time availability. For instance, for any training session, one primary trainer and one alternate trainer had always been appointed to ensure on schedule implementation of these training sessions.

The communities actually were enthusiastic to attend the meetings. They were eager to know the information on what is the purpose and benefit mangrove and how the manage. At training activities the instructors/facilitators had explained what the benefits of mangrove and how to use for environment sustainability and for their prosperity.

3. Project Performance

3.1. Planned vs realized project elements

Table 1 shows realisation of project elements; several activities have been adjusted or added from Project Document. The changes has been reported and approved by ITTO.

3.2. Project duration

The Project commenced in December 2012 planned for 24 months. addition to salary for the month of December 2014 for PMU for reporting was treated like recording for Auditor (accrual charged in November 2014)

3.3. Project budget

The total amount of budget was US $ 555,887 comprising ITTO's and GOI contributions in the amount of US$ 504,317 and US$ 51,570, 10 % (in-kind) respectively. The amount of ITTO's contribution, disbursed to GOI through Project Management Unit in two installments, was US$ 300,000. The funds were to pay for project personnel-from total US$ 504,317 (24%), sub-contract (13%), duty travel (11%), capital items (0.1%), consumable items (2%) and miscellaneous expenditures (9%). The most expenditure budget was for project personnel and sub contract components, since most activities were devoted to dealing with training, meetings and procure the facility. The budget on project personnel were using to pay the Resource Persons, Training instructors, Facilitators and sub-contract (for e.g baseline study, built and procure Mangrove Information Centre, procure turism boat, film documentation and web design). Until the completion of planned activities, ITTO funds disbursed only 60% it is because there are differences in the calculation of the exchange rate at the time of the planning activities of 1US $ = IDR 8,500 while at the implementation of the exchange rate 1US $ = range between IDR 9,000-12,000.

The first financial auditing already commence in March-April 2013 and the Final Audit Report is planned for submission to ITTO early in January 2015. The final audit report will disclose the actual amount of project expenditures at the project closing date.

Table 1. Realisation of project elements based on YPO 1 and YPO 2

Description of Output/Activities	Realisation	Remarks
Objective: • General Objective : To promote activities sustainable management of mangrove ecosystems in Bintan • Spesific Objective : To support increased mangrove ecosystem damage control		

Description of Output/Activities	Realisation	Remarks
Output 1 Draft policy and strategy on community based mangrove ecosystem management in Bintan District is formulated		
Activity 1.1 a Provide baseline data of mangrove ecosystem in Bintan District through data collection and processing of mangrove potential, carbon potential and carbon emmisions from mangrove.	100%	
inventory of mangrove blocks, measure mangrove potential and forest carbon potential	100%	
compilation and discussion on data analysis	100%	
Activity 1.1 b collect info on socio economic of communities surround forest areas	100%	
Activity 1.2 Review and evaluate existing regulations and policies on community based mangrove ecosystem management in Bintan District	100%	
Collect information and analyze existing policy and regulations on community based mangrove ecosystem management in Bintan District	100%	
Discussions and meetings	100%	
Activity 1.3 Facilitating the coordination in the making of community based mangrove ecosystem management policy amongst related stakeholders in Bintan District Meeting and discussion with relevant stakeholders	100%	

Description of Output/Activities	Realisation	Remarks
Activity 1.4 Formulate draft Policies and Strategies for the community based mangrove ecosystem management in Bintan District through a participatory process and facilitate the legality of the policies Discussions to formulate draft policy and strategy on community based mangrove ecosystem management in Bintan District Workshop	100%	
Output 2 Increased Capacity in community based management of mangrove ecosystems (Community Forestry/HKm) in Bintan District		
Activity 2.1 Preparing the materials of dissemination on the implementation of community participation in the community based mangrove ecosystem management (Community Forestry)	100%	
Activity 2.2 Implement community empowerment in the management of mangrove ecosystem	100%	
sub activity 2.2.1 Conduct extension and technical assistance on community based mangrove ecosystem management (Community Forestry)	100%	
a. Developing a model of community based eco-friendly mangrove Ecosystem Management (Training on community capacity building)	100%	
b. Training on mangrove ecosystem management for Non Timber Forest Product (Note : including procurement of Mangrove NTFP processing tools)	100%	

Description of Output/Activities	Realisation	Remarks
c. Training on mangrove ecosystem management for Silvofishery Procurement of demonstration plots floating cages for maintain mud grouper	100%	The procurement of demonstration Plot of floating cage is canceled. This because of the development of floating net cages will equipped with grouper seed to be cultivated. However, due to the implementation time along with the rainy season (November), which is harmful to the death of fish seed, then by consideration of the losses due to death then demonstration plot is canceled.
d. Training on mangrove ecosystem management for nature tourism activity (Note : including procurement mangrove ecotourism facilities)	100%	
e. Training for community on mangrove carbon measurement	100%	
f. Create web design for web-info and film documentation	100%	
sub activity 2.2.2 Develop a mangrove information center		
a. Built Mangrove Information Center	100%	
b. Inauguration of the Mangrove Information Center	100%	Already conducted in the same day with Exit Strategy meeting.
sub activity 2.2.3 Comparative Study for Local Gov't & Community Leaders	100%	
sub activity 2.2.4 Completion Activity of the Project		
Workshop	100%	Not in specific format of workshop concerning the same of audience. All achievement of the project presented in the beginning of the Exit Strategy meeting.
Exit Strategy Meeting	100%	Implementation of workshop and exit strategy in the same time with considerations of same audiences/ participants. We are concern to focus on the folow-up of the activity and the procurement

4. Project Outcome and Target Beneficiaries Involvement

4.1. Specific objective achieved

- Planned activities pertaining to individual outputs, in their original and modified forms as well as approval additional activities, were all implemented and completed to fully deliver Outputs 1 and 2

- Achievement of the specific objective has been assessed using the outcome indicators presented in the project document as follows:

Outcome indicator # 1

- baseline data of mangrove ecosystem in Bintan District through data collection and processing of mangrove potential, carbon potential and carbon emmisions from mangrove and also info on socio economic of communities surround forest areas has been disseminated to the related stakeholders in Bintan District ho involves in the drafting of Policy and Strategy on Sustainable Community Based Mangrove Management in Bintan District
- Intensive discussion on Facilitating the coordination in the making of community based mangrove ecosystem management policy amongst related stakeholders in Bintan District
- Policy and Strategy on Policy and Strategy on Sustainable Community Based Mangrove Management in Bintan District has handed over to Bintan Regent


Figure 1. (Left Photo) Hearing Director of Social Forestry about project activity to the Regent of Bintan and (Right Photo) The delivery of policy and strategy of community-based mangrove ecosystems management in Bintan District to the Regent of Bintan.

Outcome indicator # 2

- Communities has trained in several trainings to increase capacity in sustainably managing mangrove forest.
- To support in the development of mangrove ecotourim, the Mangrove Information Centre which equiped with small library. A Motor boat also has provided for ecotourism. Development of environmental services is because the rights granted to the communities in forest management is the protection forest.

Above assessment indicates that the pre-specified outcome indicators as presented in the project document have been fully satisfied through delivery of two outputs. Therefore, the specific objective has been truly and fully achieved.

Consequently, achievement of the specific objective is a significant contribution to the objectives of REDDES Thematic program, namely: i) enabling condition and capacity building for reducing deforestation and forest degradation and enhancing environmental services in tropical forest, throuh establishing policy and strategy of Sustainable Community Based Mangrove Management; and ii) capacity building among government agencies, civil society organisations, community based forest organisation, and other relevant stakeholder through several training which relevant.

Figure 2. Training series that have been implemented : a. Training of Strengthening the Community Institutional Capacity in Mangrove Ecosystem Management in Bintan District; b. Silvofishery training for Community Forestry Group in Busung and Kuala Sempang Village in Bintan District; c.Training of Carbon Calculation for Community Forestry Group in Busung and Kuala Sempang Village in Bintan District; d. Training of Ecotourism Management for Community Forestry Group in Busung and Kuala Sempang Village in Bintan District; e. Training of Non-Timber Mangrove Forest Products Utilization for Community Forestry Group in Busung and Kuala Sempang Village in Bintan District; and f. Dissemination of Carbon Benefits for Local Government in Bintan District.

4.2. Existing situation at project completion vs pre-project situation

a. Tangible outputs of the project

- The information on Sustainable Community Based Mangrove Management disseminated through the workshops, meetings and discussions to facilitate comprehension of the issues and processes on application of Sustainable Community Based Mangrove Management , attended by people representing community forestry group member, government officers and staffs as well as private sector;
- The training on Sustainable Community Based Mangrove Management application at selected community forest group member of Busung Vilage and Kuala Sempang vilage have enabled the communities to properly managing mangrove forest.
- The infrastructure (MIC, motor boat) will increase the capacity of communities in developing mangrove ecotourism

b. Sectoral policies and programs

Application of SUSTAINABLE COMMUNITY BASED MANGROVE MANAGEMENT has been announced by the MoF as mandatory that the mangrove ecosystem is a land resources wet coastal areas and life support systems and natural resources whose value is very high, by because it needs the protection, preservation and sustainable use of welfare the community; b. that to manage the ecosystem sustainable mangrove which is an integral part of integrated coastal zone management with Watershed management is required coordination, integration, synchronization and synergies across sectors, agencies and institutions;

c. The physical environment

Application of Sustainable Community Based Mangrove Management to Indonesian mangrove forests in general, to community forestry in particular, should reduce occurrence of forest degradation thus positively contributes to Sustainability Forest Management. Therefore, building the capacity in of Sustainable Community Based Mangrove Management application by the project is a significant contribution to SFM in Indonesia. Indeed, it is too early to assess degree of this contribution since the project has just been completed.

4.3. Involvement of project beneficiaries

The primary beneficiaries of the project are: local government, community forestry group, Involvement of these beneficiaries in project implementation can be summarized as follows:

- Attended the meetings on elucidation of existing rules and regulations concerning community based mangrove management;
- Participated in the meetings on the development of policy and strategy
- Acted as trainees of the training program implemented by the project;
- Central and local governments were actively engaged in the discussions on the issues surrounding implementation of Ministry of Forestry's decree No. P. 37/Menhut-II/2007 about Community Forestry ; and Government Regulation No 73 year 2012 about Mangrove Ecosystem Management.
- Participated in the public consultation on Policy and Strategy for Sustainable Community Based Mangrove Management in Bintan.

4.4. Project sustainability

Sustainability of the project rests primarily on the follow-up actions of the primary beneficiaries. The evaluation meeting carried out towards end of the project indicated that impacts of the project intervention are sustainable as evident by the facts that The Forestry Service and other related institution in Bintan are planning to allocate sufficient funds to finance activities on continued development of Sustainable community Based Mangrove Management as well as conduct institutional strengthening for Mangrove Information Centre and other activities to support community Based Mangrove Management.

Figure 3. (Clockwise) Tourism Motor Boat, Mangrove Information Center, Mangrove Diorama, and processing equipment for non timber mangrove forest products, provided by the project to the community in Busung and Kuala Sempang Village.

5. Assessment and Analysis

5.1. The project rationale and identification process

Within the framework of community development around the forest, the Ministry has established a policy on the use and management of forests for local communities through Community Forestry and Village Forest as stipulated in the Regulation of the Minister of Forestry Number: P.37 / Menhut-II / 2007 (and amendments) and P .49 / Menhut-II / 2008 (and amendments). Through this policy, the people who live in and around forests and life depends on the forest, given the opportunity to use or manage forests to improve the economic security. Based on the ministerial policy, then there are opportunities to improve the well-being of people around the mangrove area in Bintan district scheme through Community Forest or Village Forest. Based on the real condition of the mangrove area in Bintan district, as well as guidelines for mangrove management strategies and policies empowering communities around the forest, then the policies and strategies of mangrove ecosystem management in Bintan district will be implemented with the use of sustainable approach based on community empowerment. This policy direction is to improve and preserve the value of important ecological, economic and social, in order to improve the welfare of society within the framework of sustainable development.

To properly implement Sustainable Community Based Mangrove Management, a huge resource must be made available in terms of institutions, financial and technical skills. This project was formulated in response to the provision of this needed resource focusing on training of stakeholders on the technical skills required for applying Sustainable Community Based Mangrove. As such, the main feature of the project is capacity building with emphasis on technical training of the stakeholders to be involved in Sustainable Community Based Mangrove Management Scope of the project was also confined to application of Sustainable Community Based Mangrove Management to community forestry. Confining the scope was necessary considering limitation of project resource. Community forestry in Bintan selected as the sites considering the fact that Community Forestry on Mangrove area will be will be used as example of the application of community forest enterprise development in mangrove area.

It should be clear at this stage that identification of the project was a long process and involved different stakeholders coincided with the formulation process of National Strategy on Mangrove Management and Community Empowerment. Therefore, understanding on the issues to be tackled by the project was particularly strong while the issues addressed were unquestionably relevant and consistent to the need of the forestry sector.

5.2. Problems addressed, objectives and implementation strategy

Shoreline area and mangrove ecosystem become the target for natural resources exploitation and environmental pollution as a result of development demands which is inclined to emphasize on economic factors. The more economic benefit and profit that will be gained, the more burden the environment must bear on the damage caused by pressure. These environmental impacts can be identified by observing degradations on shoreline area and the reduction of mangrove ecosystem area.

Mangroves in Indonesia covers an area of + 7,7 million ha; among which 3,250 million ha or 41,9% is heavily damaged, 2,13 million ha or 27,4 % is damaged and only 2,38 million ha or 30,7 % is in good condition.

Most (70%) of mangrove ecosystem damage occurs outside forest areas are caused by among others: conflict in land tenurial rights e.g among the communities, and other sectors outside forestry, conversion of mangrove area into fishponds, and uncontrolled felling of mangrove for charcoal production. The increasing demand on the economic function of mangrove which tend to

override the carrying capacity and most often ignore the ecological function of mangrove ecosystem itself. The similar case is affecting condition of mangrove area located at the Bintan Island, Province of Riau Islands that will become the pilot activity of the project. Based on the mangrove forest survey done in 2007, mangrove ecosystem in the district of Bintan is recorded to cover an area of 23.934,70 ha out of which 1.253,70 ha is in good condition; 3.024,36 ha slightly damaged; and 19.656,64 ha heavily damaged. No inventory is being done on the latest condition of mangrove ecosystem (source of data: Directorate General of RLPS, MoF) especially after the development of several Resort Areas along the shore of Bintan which was giving cocontribution to the destruction of mangrove ecosystems.

The production of *bakau* charcoal is the main livelihood of communities in Bintan island and has been done for generations. Unplanned mangrove utilization until small diameter trees and roots is a waste of resource, causing a lowering of quality and price of *bakau* charcoal and a high supply of the commodity in the market.

All of uncontrolled harvesting of mangrove forest is mostly caused by inappropriate policies legislation on mangrove management. This inappropriate policies for example, unplanned conversion of mangrove ecosystem to agricultural land, fisheries and human settlement as well as opening and development of resort areas happened almost at allover of Indonesia since the land use change was not comply to the National Spatial Planning under the National policies.

Excessive unplanned felling and harvesting of mangrove forest by communities are continuously occurred caused by the appropriate scheme of community forest mangamant such as village forest, community forest, or community plantation forests are not properly promoted by the local government.

Those inappropriate policies legislation continuously applied since the absence of national Strategic Plan on mangrove forest management which shows lack of commitment of several stakeholders. The document of National Strategic Plan had been formulated, however, was not having consensus yet by several stakeholders outside of forestry sector.There was lack of coordination among stakeholders that will result weak commitment between them to respect the will be used as examples of the application of community forest enterprise development in mangrove land best practices of mangrove forest management. As mentioned before, mangrove ecosystem management should be done as an integral part of watershed (DAS), therefore, mangrove ecosystem management need political commitment and strong support from the Central, Regional Government and related stakeholders.

Another cause affecting inappropriate policies is lack of awareness on policy failures and best practices of mangrove forest management. Absence to review the existing regulation related to mangrove issues is one factor to be resolved. Many rules and regulations have been enacted about the management of mangrove area, and it has never been evaluated whether they are still relevant or not. Rules are superimposed between one and another, some are contradictory with other regulations or among sectors. Therefore, existing rules and regulations need to be evaluated and reviewed in order to attain an increase of benefit and function of mangrove ecosystem as a life support system.

Limited involvement of local communities in the rehabilitation of degraded mangrove ecosystem is caused by inadequate capacity of the communities and lack of financial supports. Communities have not reached similar understanding on the existence, status, function and benefit of mangrove ecosystem. Uncontrolled mangrove exploitations were unavoided. The rate of degradation of mangrove ecosystem increases and its quality is decreased. People and community groups in general has not yet understand a model for conservation and culture of mangrove ecosystem management which is environmentally friendly and community based.

Lack of capacity is caused by lack of trained persons in doing mangrove rehabilitation and restoration. The absence of training activity for communities is caused by weak capacity of local government in planning and doing monitoring and evaluation of mangrove forest management. They were in poor capacity to provide these services caused by lack of financial supports. Lack of

extensions and facilitation program as well as assistance for communities causes lack of knowledge of the communities to involve in the rehabilitation of mangrove forest. They are on the opinion that mangrove area have existed since time immemorial are owned by their acestors and for them to utilize its wood and its derivative products according to their sishes without any control from anyone.

The damage on shoreline areas will have influence on ruining the socal economic condition of the communities living within the area or in its environs. The degradation of mangrove ecology will impact on the lowering of fish catch and the reduction of income of small fishermen in the said shoreline area. Uncontrolled exploitation and degradation of mangrove area will result in ecosystem change of the shoreline area such as destruction of coral reefs, lowering of fish biodiversity, reduction of mangrove forest area, shore abrasion, intrusion of sea water and extinction of rare flora and fauna. Besides this ecological impact, the economic income will decrease since lost of export opportunities from mangrove productsExcessive utilization of mangrove forest not only causing the reduction of water infiltration areas, abrasion, natural disasters such as erosion and flood but also the loss of the hub for circulation and formation of carbon dioxide (CO2) and oxygen (O2) gasses needed by human being for the perpetuity of their life. Mangrove has a very important role in absorbing free carbon. The process of photosynthesis changes inorganic carbon (C02) into organic carbon is the form of vegetative materials. In most of the ecosystems, these materials decompose and release back the carbon into the atmosphere as carbon dioxide (C02). However, mangrove forests retain most of the undecomposed organic material. Because of it, mangrove forest functions more as a carbon absorber rather than as carbon source. It is also true in maintaining microclimate. The evapotranspiration of mangrove forest is capable of maintaining humidity and precipitation of the area, which maintain the balance of the microclimate. Mangrove ecosystem is also able to prevent the development of acidic sulphate soil due to the prevention of the oxidation of pyrite layers and prevent its development in its natural condition.

The key problem addressed by the project was “lack of capacity of communities to rehabilitate the degraded mangrove forest area Accordingly, the specific objective of the project was “to develop the capacity of relevant stakeholders in implementing mangrove area management sustainably. Its development objective was to promote rehabilitation activities to reduce degraded mangrove ecosystem and improve critical land along Bintan island.

The strategy pursued in implementing the project was collaborative in nature with the following main elements:

Output 1. Drafting Policy and Strategy of Sustainable Community Based Mangrove Management in Bintan District

- Provide database on mangrove forest management through inventory of mangrove forest damage at Bintan island and inventory of carbon potential and carbon emissions in the said mangrove area.
- Collect data and info on socio, economic of communities surrounding the mangrove forest areas in Bintan island.
- Review and evaluate existing regulations and policies on mangrove management.
- Coordinate and integrate program amongst related stakeholders in the mangrove ecosystem management through meetings, FGD and seminar.
- Drafting Policy and Strategy of Sustainable Community Based Mangrove Management in Bintan District through participative process

Output 2. Increased Capacity in community based management of mangrove ecosystems (Community Forestry/HKm) in Bintan District.

- Improved capacity of communities to rehabilitate the degraded mangrove forest area
- Preparing the materials of dissemination on the implementation of community participation in the community based mangrove ecosystem management (Community Forestry)

- Training on community capacity building(Developing a model of community based eco-friendly mangrove Ecosystem Management)
- Training on mangrove ecosystem management for Non Timber Forest Product
- Training on mangrove ecosystem management for Silvofishery
- Training on mangrove ecosystem management for nature tourism activity
- Training for community on mangrove carbon measurement
- Create web design for web-info and film documentation
- Develop a mangrove information center
- Comparative Study for Local Government & Community Leaders

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5.3. Critical differences between planned and actual project implementation

As has been highlighted in Section 3.4, no change has been made to the development and specific objectives, outputs and to most of planned activities. Modifications were made to Activities to reach the output 2. The modifications made are:

- Activity 2.2.3 Training on community based mangrove ecosystem management (Community Forestry) for local Government and Community leader canceled from the project, due to this activity carried out with Government budget (Riau Islands Watershed Management Center)
- Activity 2.3. Facilitate and assis communities for processing permit of the mangrove forest management right, also canceled because of this activity also carried out with Government budget (Riau Islands Watershed Management Center)
- The budget alocated for the activity 2.2.3.and 2.3 then used for motor boat and Mangrove Information Center.

This change has been submitted and approved by ITTO on March 2014

In conclusion, the difference between planned and actual project implementation is not significant. In fact, the changes made have increased effectiveness of project operation and enriched outcome of the project.

5.4 Adequacy of time and project inputs

The project duration was initially planned for 24 months. The project start on December 2012 and terminate in the end of November 2014. Project need one month to finalize the completion report and audit by independent auditor.

The financial contribution of ITTO disbursed to the Executing Agency, US $ 300,000 in amount, was sufficient to implement planned/modified as well as additional activities, purchase needed capital items and pay for project personnel. Disbursement of funds was made timely in two installments at the request of the Project Coordinator on behalf of the Executing Agency. Contribution of the Executing Agency in the amount of US $ 300,000 was fully realized timely as planned. The complete project financial figure will be presented in audited of financial report January 2014 – November 2014.

5.5. External influences

The assumptions made as regard implementation of the project were valid during the project duration. Local governments supported the policies announced by the central government because they were consistent with their regulations. The Ministry of Forestry consistently supported the implementation of Community Empowerment regulations. In fact, the MoF has targeted that each year 400 ha Community Forestry Right should have been legally certified. Local governments have always been involved in the training or dissemination activities. The

communities were actively participated in the training implementation and in information dissemination process; the local governments supported these activities. Implementation of the project faced no problem relating to the assumptions made.

There were no problem with the availability of training instructors and facilitators. This assigned instructors had been contacted in advance to ensure their in time availability.

The communities actually were enthusiastic to attend the trainings sessions and meetings. They were eager to know the information on the purpose and benefits of mangrove and how to manage in sustainable way. During the training implementation local communities had been clearly informed of the benefits of mangrove and that Sustainable Community Based Mangrove Management will soon become applied to all mangrove forest area. Indeed, the ultimate target of this project is to strengthen the capacity of Communities in mangrove management and promote the use of Mangrove for improve welfare without damaging the trees.

5.6. Project beneficiaries

The primary beneficiaries of the project were local communities owning or managing community forestry right, as well as local government institutions. Each of the beneficiaries had been actively involved in project implementation. The community forestry group member were involved in the training of skills as trainees, in the focus discussions as recipients of information on Sustainable Community Based Mangrove Management.

The local Government had also have Policy and Strategy on Sustainable Community Based Mangrove Management, that this is a first mangrove management policies at the district level. It is worth emphasizing that the active participation of the primary beneficiaries was induced by the facts that application of Sustainable Community Based Mangrove Management will be replicated to all area (district) who have mangrove forest.

Another beneficiaries of the project were NGOs, academicians and forestry professionals whom had taken part in project implementation through their direct involvement in carrying out individual activities as appropriate, as instructors of training on technical skills, resource persons of the workshops and discussions or as experts

5.7. Sustainability

Among the project activities that to be implemented continuously after project completion include:

1. To obtain certainty in the business development of the Community Forestry Group of Busung and Kuala Sempang village, then there needs to be immediate establishment of Community Forest Utilization Permit (IUPHKm) by Regent Bintan based on the determination of the Community Forestry working area apointed by the Minister of Forestry Number: SK 114 / Menhut-II / 2014 dated January 30, 2014.
2. The Institutional of community forestry groups in the village of Busung and Kuala Sempang today is still not steady yet in managing sustainable community forestry. For that, at the time of HKM Utilization Permit (IUPHKm) released by Bupati should accompanied by a community group institutional strengthening of the Department of Agriculture and Forestry of Bintan District and the Central of Watershed Management of Riau Islands.
3. In accordance with the mandate of Presidential regulation number 73 of 2012 on the National Strategy of Mangrove Ecosystem Management, then to realize the sustainable of community based mangrove ecosystem management development in Bintan regency, it is required public policy in the management of mangrove areas. Therefore, the Draft of Policy and Strategy for Community-Based Mangrove Ecosystem Management in Bintan regency which has been drawn up needs to be determinatted by Bintan District Government.

4. To implement the policy of sustainable of mangrove areas management based on community empowerment in Bintan District is required the participation of stakeholders at every stage of policy implementation. In connection with this, the socialization of Community based Mangrove ecosystems Management should implemented sustainably by the local government to utilize the facilities and extension materials that have been made by the ITTO project, with the involvement of the Regional Working Group on Mangrove of Riau Islands Province.
5. To increase the capacity of community forestry groups, has done a variety of skills training in order to optimize the sustainable utilization of mangrove areas, such as mangrove nurseries, mangrove Non Timber Forest Product (NTFP) development, Silvofishery, mangrove eco-tours, study tours etc. Some of these initial activities need ongoing development by the related local government offices in accordance with the specifications and priority activities.
6. ITTO project has facilitated the procurement of boats which is representative for the development of eco-tourism activities by community forestry groups. To realize the success of ecotourism activities managed by community group, capacity-building and sustainable development by the Department of Local Government is necessary, especially by conducting development of tourist places boat dock and tourist track.
7. In order to disseminate information on mangrove areas management, Project has Mangrove Information Center (MIC) Building in the village of Busung. Building facilities is still very limited, so it needs to increase infrastructure and institutional strengthening of MIC management to function optimally. Websites that have been built can be used for information dissemination.
8. At this time has developed for utilization of mangrove Non-Timber Forest Products (NTFPs) for various types of food and other products. ITTO project has facilitated skills training to improve the quality of these products. These efforts need to be continued by Local Government, especially in terms of improving the quality of the packaging, capital and marketing aspects. It is required to obtain lawful consumption certificate of competent institution

The institutions that are responsible for implementing above critical activities are: the provincial and district government units through their respective forestry agencies and also the Ministry of Forestry through its technical regional offices (Watershed Management Centre). These institutions are respectively required to assign sufficient number of staffs to implement the activities. The funds needed for financing implementation of selected activities are to be sourced regularly from state budget appropriated through central, provincial and local treasures. To ensure adequacy and timely availability of funds, each responsible party must develop yearly budget plan and timely submit to the Ministry of Finance in accordance with existing state budget allocation cycle.

5.8. The institutions involved

The institutions involved in project implementation were:

- Local community groups;
- Local related agencies that involve in community empowerment, and mangrove management
- Forestry Agencies of provincial and district governments;
- Directorate General of Watershed Management and Social Forestry Developmentof the Ministry of Forestry and its regional offices who is responsible for watershed management and mangrove management.

- Local University
- NGOs that have the experience working with local communities, private sector and local governments as well.

6. Lessons Learned

6.1. Project identification and design

This project was a prompt response to forestry ministerial decree No. P.37/Menhut-II/2007 on Community Forestry. In this decree, the implementation of community forestry is intended for development capacity and provision of access to the local communities in managing Sustainable forest in order to ensure the availability of jobs for local communities to solve economic and social problems. Based on this ministerial decree, community of Busung Village and Kuala Sempang Village of Bintan District propose to Minister of Forestry to have right to manage state forest in both villages.

Based on the real condition of the mangrove area in Bintan district, as well as guidelines for mangrove management strategies and policies empowering communities around the forest, then the policies and strategies of mangrove ecosystem management in Bintan district will be implemented with the use of sustainable approach based on community empowerment.

Key problem to be addressed was thoroughly analyzed involving the main stakeholders; main causes as well sub-causes of the key problem were adequately identified and then used as the basis for defining the project intervention. By adequately and correctly identifying causes of the key problem, vertical logic of project elements was strong. Therefore, the project design was sound for the following reasons: i) project activities were defined correspond to the sub-causes identified; ii) project outputs were defined correspond to the main-causes identified; and iii) the specific objective was defined correspond to the key problem identified. Indeed, the project design was sound due to the strong relevance as well as sufficiency of the project intervention to resolve the problems at hand.

To ensure project sustainability after project completion, a exit-project strategy has been designed which include selection of critical activities to be implemented, appointment of the institutions involved including the leading one, and identification of resources needed including their sources. This exit-strategy has been developed adequately through formal consultation with the primary beneficiaries of the project, namely the local communities, concerned government institutions, i.e. Directorate General of Watershed Management and Social Forestry Development and its regional offices, Center of Watershed Management as well as district governments through their respective forestry agencies. Financing of selected activities is through state budget appropriation following existing cycle of state budgeting process.

6.2. Operational matters

The project was implemented by Directorate General of Watershed Management and Social Forestry Developmentof the Ministry of Forestry in a collaborative manner. The collaborators included those institutions from outside MOF, e.g. ITTO Secretariat, Provincial and local government units, NGOs, universities and from inside MOF, e.g. Center for Watershed Management of Riau islands.. The active participation of those collaborating institutions had eased arrangement and implementation of the project activities especially in the completion of administrative or bureaucratic processes, coordination as well as motivation of stakeholders to cooperate and support. The collaborative manner of project implementation had considerably contributed to the smooth operations without any major difficulties. The smooth project implementation was also attributable to the hardworking project management team.

The inputs to project activities had been provided sufficiently in terms of quantity, quality and timing due to the full support of the ITTO Secretariat and timely submission of yearly plans of operations consistent with the existing ITTO guidelines. Project funds had been transferred by ITTO in twice installments upon the requests made by the Executing Agency.

Roles and responsibilities of the parties involved were made clear prior to commencing with execution of individual activities; they were clearly defined and adequately elaborated in the respective relevant terms of reference. In this way, confusion of the parties during operational stage was avoided as regards their roles and responsibilities.

Project documentation was adequately performed and facilitated the sharing of information in an effective manner. Technical report on Policy and Strategy on Community Based Mangrove Ecosystem Management in Bintan and training activities reports. Draft of Policy and Strategy on Community Based Mangrove Ecosystem Management in Bintan has been hand over to Bintan Head of District.

Monitoring and evaluation of project operations had been accomplished satisfactorily by the PSC chaired by the Director of Social Forestry Development and by the Project Coordinator. The PSC met once during the project duration in the begining of second year of the project, and provided valuable directives and technical advices while the PC also paid visits to several project sites to gather first hand information on project operations.

Bintan regency has a mangrove forest area covering 7956 hectares spread over 10 districts and has great potential to be developed as a supporting livelihoods around it. In general, the condition of mangroves in Bintan regency is still pretty good, but in some areas have suffered damage as a result of the development of human settlements, land transport infrastructure development, as well as logging community.

Based on the real condition of the mangrove area in Bintan regency, as well as guidelines for mangrove management strategies and policies empowering communities around the forest, then the policies and strategies of mangrove ecosystem management in Bintan regency will be implemented with the use of sustainable approach based on community empowerment.

Busung and Kuala Sempang village is Villages in Bintan regency territory. Society of both villages have applied for rights management of Community Forestry (Forest State granted rights to communities through Regent license) which requested forest area of 138.19 ha for Busung Village and 147.58 hectares for the village of Kuala Sempang. Petitioned forest management rights are Protected Forest with mangrove stands. Community groups from those villages are being targeted to be institutional strengthening communities in mangrove management through trainings. Because the forest area to be managed is a protected forest (there should be no use of wood), the more the management of non-timber forest product utilization, and development of environmental services such as ecotourism.

Lessons learned from project activities in the villages and the village of Busung and Kuala Sempang Bintan regency was already aware and understand the importance of the mangrove, including the importance of protecting forests for carbon storage in anticipation of climate change.

Community and Village governments of Busung and Kuala Sempang hopes that the existing mangrove area in the village can be a community-based ecotourism and can be used as a field laboratory to learn about Mangrove.

7. Conclusions and recommendations

7.1 Conclusions

- Identification of the problem to be addressed by the project was accomplished through an adequate process involving the main stakeholders and the key problem addressed was consistent with the issues on mangrove ecosystem management in Indonesia.
- The project design was sound because it was derived from a thorough problem analisys involving the main stakeholders; the project intervention was relevant for solving the key problem addressed because it corresponded to the main causes and sub-causes of the key problem;
- The project was smoothly implemented due mainly to the collaborative strategy pursued, cooperative primary beneficiaries and partners, hardworking project management team, competent PSC and supportive ITTO Secretariat;
- The project was managed in full compliance with existing ITTO rules and procedures. As of completion date, two YPOs, three bi-annual progress reports, two yearly financial audit reports had been submitted to ITTO and approved. Employement of project personnel, national consultants and sub-contractors as well as procurement of capital items had been made with the prior expressed approval of ITTO;
- The specific objective of the project has been fully achieved through delivery of all planned outputs and execution of the activities pertaining to individual outputs; and
- The project results have been disseminated through the meetings of the PSC and distribution of technical reports to relevant stakeholders.

7.2 Recommendations

- The key problem to be addressed by a proposed project must be adequately analyzed involving competent profesionals in order to correctly identify relevant main-causes and sub-causes of the problem as the basis for defining relevant project elements and intervetion; soundness of a project design is closely linked with adequacy of problem analisys;
- It is strongly advisable to re-examine with the primary stakeholders the strategy to be pursued prior to commencing with project operations; by doing so, conformity of the strategy to actual project environment is assured and its risk to change is minimized during the course of project implementation;
- To facilitate a smooth and successful implementation of a project, a well dedicated project management team is required, timely availability of inputs in terms of funds and professionals must be ensured and established PSC has to be able to provide fruitful advices to project management team
- Any project is best to be implemented in a participatory manner; involvement of the main stakeholders and partners will create ownership and increase support to the project during its implementation and after completion as well;
- The exit strategy has been defined, should be implemented after project completion. The institution(s) to implement the activities and sources of needed resources; such a strategy would help guide future ownership and management of the project and infrastructure has been developed.

Responsible for the report

Name : Mrs. Rektarini

Position held : Project Coordinator

Date : December 2014

Signature :