

The SFD & ISME Collaboration on Rehabilitation of Degraded Mangroves in Sabah: A Success Story towards Sustainable Forest Management



by,

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General Content

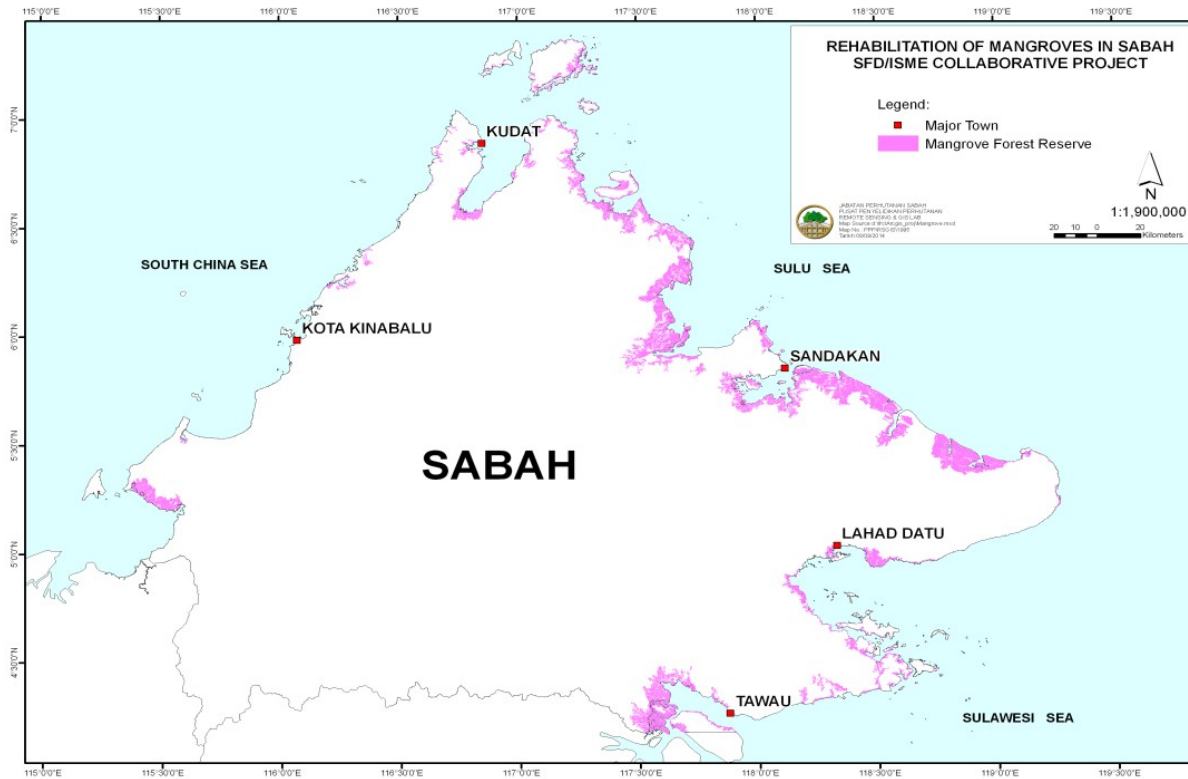
- Introduction
- The SFD & ISME Collaboration Project
- Case Studies
- Issues and Challenges
- Experiences and Achievements
- Conclusion



Introduction

An estimate of mangrove areas in Sabah ~ **341,000** ha (i.e. ~ **58%** of Malaysia's mangroves)

Based on the latest assessment of forest cover of Sabah in 2005, about 3,300 ha of mangrove areas have been illegally encroached and exploited, thus needing restoration program.



Introduction

- Currently there are 17 Mangrove FR (Class V) ~ 281,374.56 ha. There are mangrove forest, designated as Protection Forest (Class I) and Virgin Jungle Reserves (VJR) Class VI~ strictly for biodiversity conservation and forestry research purposes. Part of FR consist of mixed forest with mangroves vegetation and designated as Amenity FR (Class IV) i.e. Padas Damit FR and Nabahan FR in Beaufort, and Trusan Sugut FR (Class I) in Beluran.
- There are four main zonation of mangrove in Sabah, i.e. *Avicennia-Sonneratia* forest (the seaward zone), *Rhizophora* forest (main mangrove zone), *Bruguiera* forest (back mangrove zone) and the *Nypa* forest (riparian zone).



SFD & ISME Collaborative Project

SFD delegations visited Okinawa in September, 2007



The State Government of Sabah represented by Sabah Forestry Department signed a Memorandum of Understanding (MOU) with the International Society for Mangrove Ecosystems (ISME) on the 10th November 2010, to implement a collaborative project to rehabilitate degraded mangroves in Sabah.

The project is funded by Tokio Marine & Nichido Fire Insurance (TMNF) Co. Ltd., Japan. Founded in 1871, the TMNF considers mangrove forests as an insurance for the future of earth and hopes to continue this project for the next 100 years.

FIRST PHASE
The first phase of the mangrove rehabilitation (from 2011 to July 2014) was a collaboration between both parties in the selection of site, the preparation of the site for planting, species for planting, as well as the preparation of planting and after care through the conduct of the ground assessments of the land.

SECOND PHASE
The second phase (2014-2019) continued on the success of the first phase, with the signing of the MOU of August 2014 between both parties. The second phase has the setting up of the ground training committee (GTC) to monitor the progress of the current project phase.

ACTIVITIES UNDER THIS COLLABORATIVE PROJECT

MEETINGS, WORKSHOPS AND FIELD VISITS
The second phase (2014-2019) continued on the success of the first phase, with the signing of MOU on the 10th of August 2014 between both parties. The second phase saw the setting up of a Project Steering Committee (PSC) to monitor the progress of the current project phase.

PLANTING ACTIVITIES
Planting of mangrove trees is major activity for SFD with technical guidance from ISME. The first planting was carried out in 2011 and continued in Sarawak. In 2014, under the collaboration, a pilot mangrove plantation of degraded mangrove forests, the Sabah National, comprised of a total of 302,000 planted seedlings.

LOCATION OF MANGROVE FOREST IN SABAH & PLANTING SITES UNDER THE SFD-ISME PROJECT

Region	Planting Site	Area (ha)	Planting Date
KUDAT	1. Kudat	100	2011
	2. Kudat	100	2011
	3. Kudat	100	2011
TUARAN	4. Tuaran	100	2011
	5. Tuaran	100	2011
	6. Tuaran	100	2011
SANDAKAN	7. Sandakan	100	2011
	8. Sandakan	100	2011
	9. Sandakan	100	2011
JESSELTON	10. Jesselton	100	2011
	11. Jesselton	100	2011
	12. Jesselton	100	2011

The commemorative mangrove planting ceremony was held at Sungai Lalasun, Sandakan, in conjunction with the 8th General Assembly of ISME in Sabah on 13 September 2011



(10 Nov. 2010)



(13 Aug. 2014)

Signing of Memorandum of Understanding (MOU) between SFD & ISME for Phase One (2011-2014) and Phase Two (2014-2019)

Case Study #1: SUNGAI ISME, Sandakan

Mangrove planting activity was carried out ~ **August - September, 2012**

40 staff members of Tokio Marine & Nichido Fire Insurance Co. Ltd. Japan also participated in the voluntarily mangrove planting program in Sungai ISME on 5-7 Sept. 2012.

2011



2012



2013



SUNGAI ISME, SANDAKAN

2014



2015



By adopting suitable planting techniques with the right choice of mangrove species, the re-planting exercise at Sungai ISME indicates greater survival rate.

At the same time we are also taking measurement data on the growth of planted seedlings and propagules at Sg. ISME since 2014. Collaborating with TBRC researchers



2016



Case Study #2: SUNGAI TOKIO MARINE, KUNAK

2013



2014



2015



SFD have taken the initiative in 2013 to rehabilitate this highly degraded mangrove under this collaborative project.

Planting areas in SungaiTokio Marine (~ 56 ha) is an area encroached for shrimp ponds with excavated pond substrates and bunds. Planting duration 2014-2015.

2016



2017



Case Study #3: SUNGAI TBRC Ryukyus, Lahad Datu

2016



This planting site is approximately **12 hectares** and encroached by illegal squatters, some holding an immigrants document.

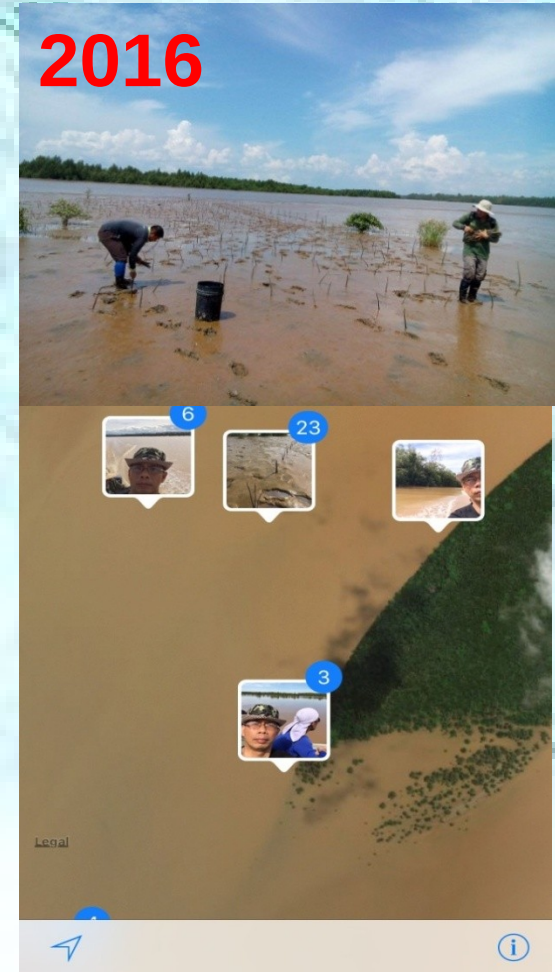
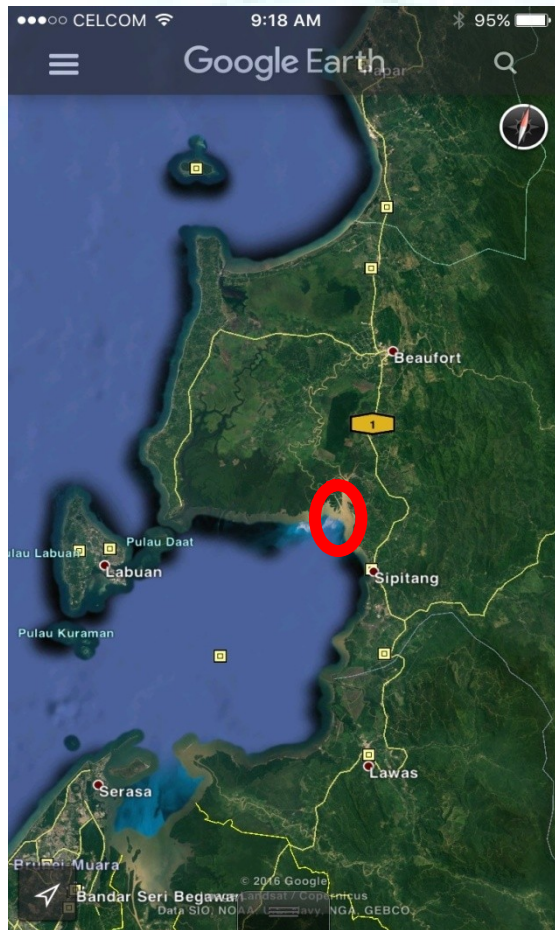
Planting was carried out by the SFD-ISME Mangrove Task Force since 2016 and also volunteers students from Sabah and Japan.

The main culprit of low survival rate of planted mangrove is due to the presence of goats, eating happily on the mangrove shoots.

2017



Case Study #4: restoration of mudflats



This planting site is approximately 39 ha caused by accretion of mudflats formation along the estuary of Weston bay in Beaufort district. Trial planting of ~ 500 *Rhizophora apiculata* propagules were carried out in October 2016.

The present natural vegetation on the accreting mudflats is the *Sonneratia caseolaris*.

Case Study #4: restoration of mudflats

2017



The used of *Rhizophora apiculata*, as planting material is because this species is known for higher survival rate.

Approx. ~ **1000** propagules were planted by the staff members of SFD-ISME mangrove project in January and February 2017.

Also, on 25 March 2017, nine (9) students and two (2) teachers from Tokyo Metropolitan High School, Japan, ISME and SFD staff members voluntarily planted ~ **2,500** mangrove

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Mangrove Rehabilitation Project
A Collaborative Project Of Sabah Forestry Department (SFD) And International Society
For Mangrove Ecosystems (ISME)
Total Planting Area : 39 Hectares
Year Of Planting : 2017
Name Of Forest Reserve: Weston Forest Reserve (Class V)
Location : Sg. Weston, Beaufort Forestry District
Funded By: Tokio Marine & Nichido Fire Insurance Co., Ltd Japan & SFD

Mission Accomplished

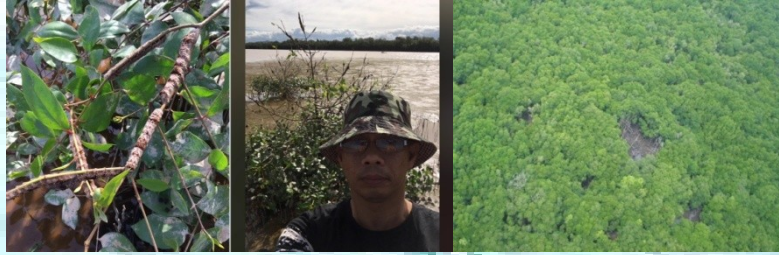


Issues and Challenges



Main issues are **encroachment**, **expansion of human settlement**, **erosion**, and eventually **extinction of mangrove**.

Experiences and Achievements



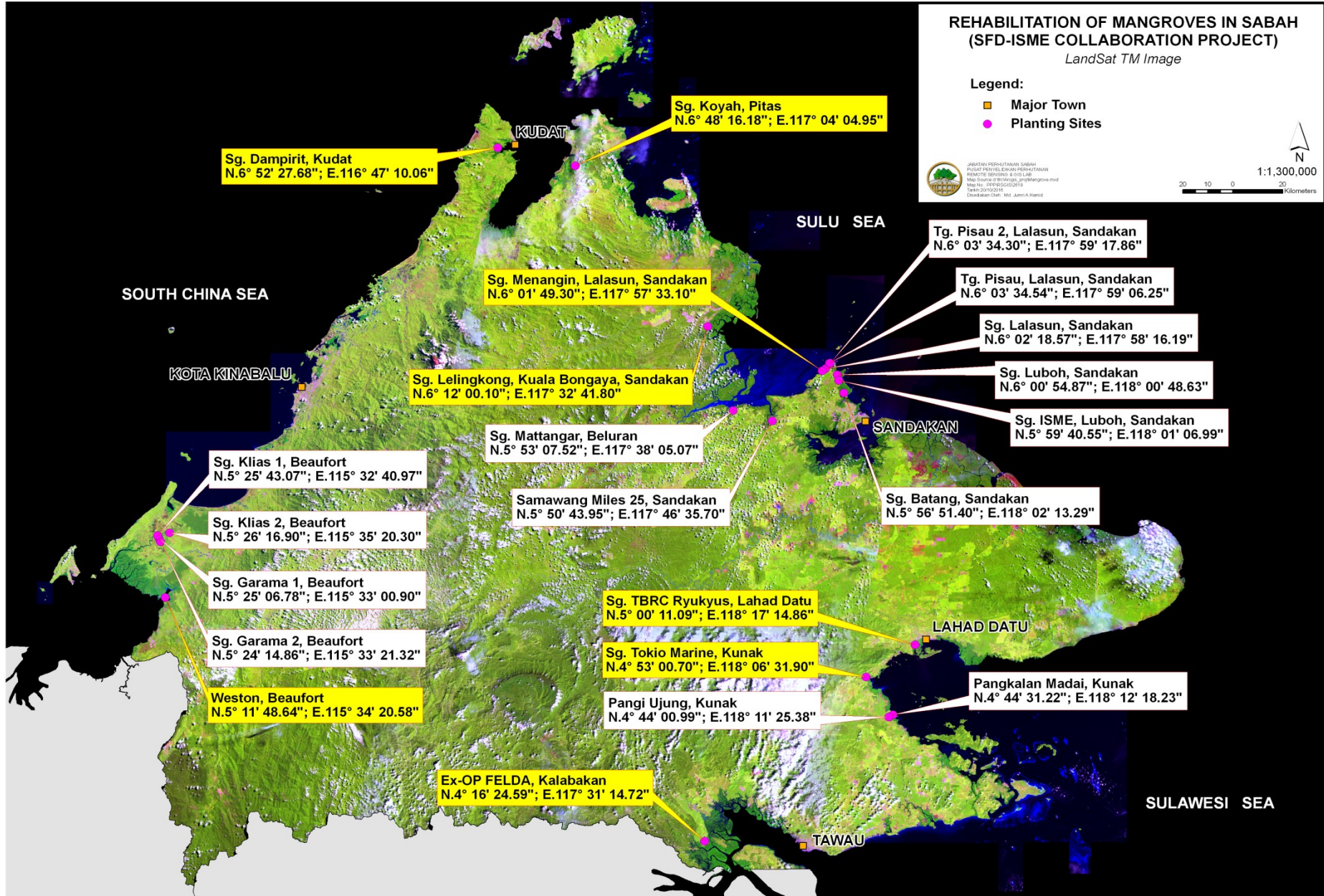
What is our experiences?

- ... we know how to rehabilitate degraded mangrove ecosystems**
- ... It is important to encourage local community participation**
- ... the strong support from government is paramount**

What have we achieved?

- ... by end of 2016 we managed to rehabilitated a total of 351.5 ha of degraded mangrove ecosystems and successfully planted a total of 407,891 planting materials.**
- ... greater cooperation among all the stakeholders i.e. local communities, SFD, ISME, TBRC, Tokio Marine & Nichido Fire Insurance and the State Government of Sabah**
- ... a book was published to commemorate the successful completion of Phase One (2011-2014) project.**

Location map of SFD-ISME project (2011-2019)



Conclusion

- Rehabilitated mangrove will prevent further erosion along the waterways, care for mangrove mudflats, and to improve the conducive mangrove environment
- In the long run this collaboration project will be beneficial to all related stakeholders of mangrove ecosystems
- The SFD-ISME project will continue to manage and rehabilitate all areas of degraded mangrove forest throughout Sabah's wetlands



Acknowledgement

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- We are also grateful to the Sabah Forestry Department (SFD) and Tokio Marine & Nichido Fire Insurance Co., Ltd. Japan for their continuous support to the mangrove collaborative project in Sabah.

For Further Reading

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THANK YOU

