Filiberto Pollisco, Jr., Ph.D. 2014. Presented in the “Capacity Building WS for Central, South and East Asia on Ecosystem Conservation and Restoration to Support Achievement of the Aichi Biodiversity Targets”, 14 – 18 July 2014, Jeju, South Korea

Mangroves & Mined Out Areas Rehabilitation/Restoration in Southeast Asia and Their Implication to Designing ECR Projects

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Contents:

- Part 1. Case Studies / examples of rehab / restoration in mangrove ecosystems and mined out areas
- Part 2. Implications to project designing for ECR

Mangrove Ecosystems Rehabilitation / Restoration


สิรินาถราชินี
ศูนย์ศึกษาเรียนรู้
ระบบนิเวศป่าชายเลน
PTT PetroChem Inc.
Thailand

Abandoned Fish Ponds, 1990s

Present Day 2013

Use:

- Scientific Research
- Education of school children
- Ecotourism
  - Showcasing local community culture and traditions

Facilities:

- Lecture Hall
- Video Room
- Walkways, Observation tower
- Museum
  - Dioramas
  - Exhibits, Photos, Posters
  - Interactive display of mangrove creatures
  - Section on local community house with kitchen & artifacts


ศูนย์ศึกษาธรรมชาติกองทัพบก
เฉลิมพระเกียรติ ๗๒ พรรษามหาราชินี
WWF
BANGPU NATURE EDUCATION CENTER
COMMEMORATE 72nd ANNIVERSARY
OF HER MAJESTY QUEEN SIRIKIT

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JICA
REGIONAL SYMPOSIUM ON
MANGROVE ECOSYSTEM MANAGEMENT
IN SOUTHEAST ASIA: MAINSTREAMING MANGROVE
ASEAN GOVERNMENT OFFICIALS' MEETING ON
MANGROVE ECOSYSTEM MANAGEMENT
February 27 - March 1, 2013
Surabaya - INDONESIA
MECS
KEHATI
WETLANDS INTERNATIONAL
LAWA POWER


KAWASAN MANGROVE
GUNUNG ANYAR SURABAYA


03 01 2013 16:57


Didukung
03 01 2013 16:02

Policy

Surabaya Call for Action on Mangrove Management and Mainstreaming

- Harmonize and develop comprehensive policies and plans with active participation and consultation of concerned stakeholders on sustainable coastal zone management including production, **conservation, restoration and rehabilitation, and usage of goods and services of the mangrove ecosystem**, reducing risks from disasters and climate change adaptation for the benefit (including livelihood) of coastal communities and the wider society.

- Recognize and safeguard the rights of local communities to access and share benefits for their livelihood from the uses of mangroves.

- Ensure the integration of mangrove ecosystem management and restoration for Disaster Risk Reduction and Climate Change Adaptation

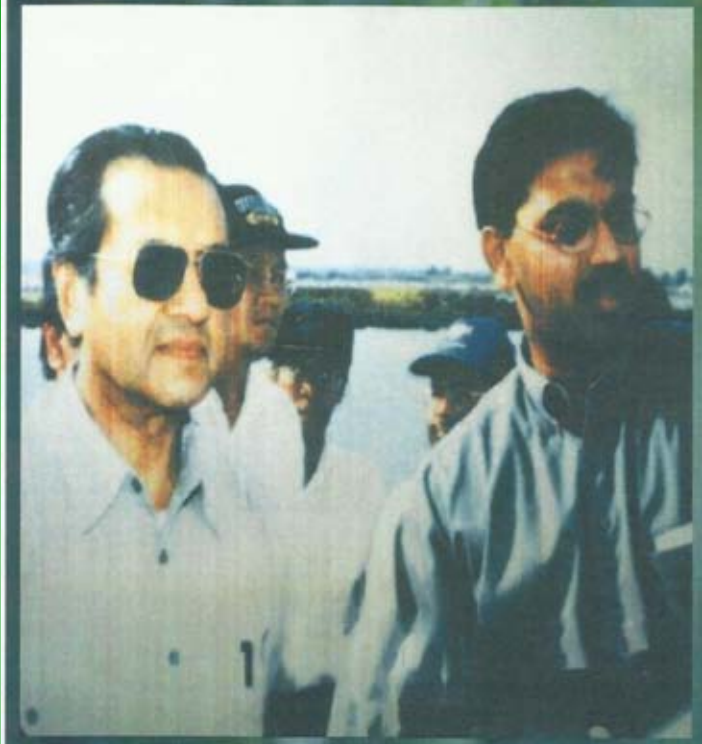
Rehabilitation / Restoration of Mined Out Areas

PAYA INDAH WETLANDS (PIW)

KUALA LANGAT DISTRICT
450.76 ha GAZETTED AS WETLAND RESERVE

Kuala Lumpur, Malaysia

THE TRANSFORMATION OF PAYA INDAH WETLANDS



The main idea to develop the area is from Malaysia's Former Prime Minister Tun Dr Mahathir Mohamad

Replanting trees by the developer

HISTORY OF PAYA INDAH WETLANDS

The view before the development of PIW

The tin-mining ship used in sand and tin mining on late 90's

The deserted land caused by the mining activities

REHABILITATION PROGRAMME IN PAYA INDAH WETLANDS

Stage 1
-Cleaning process of the aquatic plants
(*Salvinia molesta*)

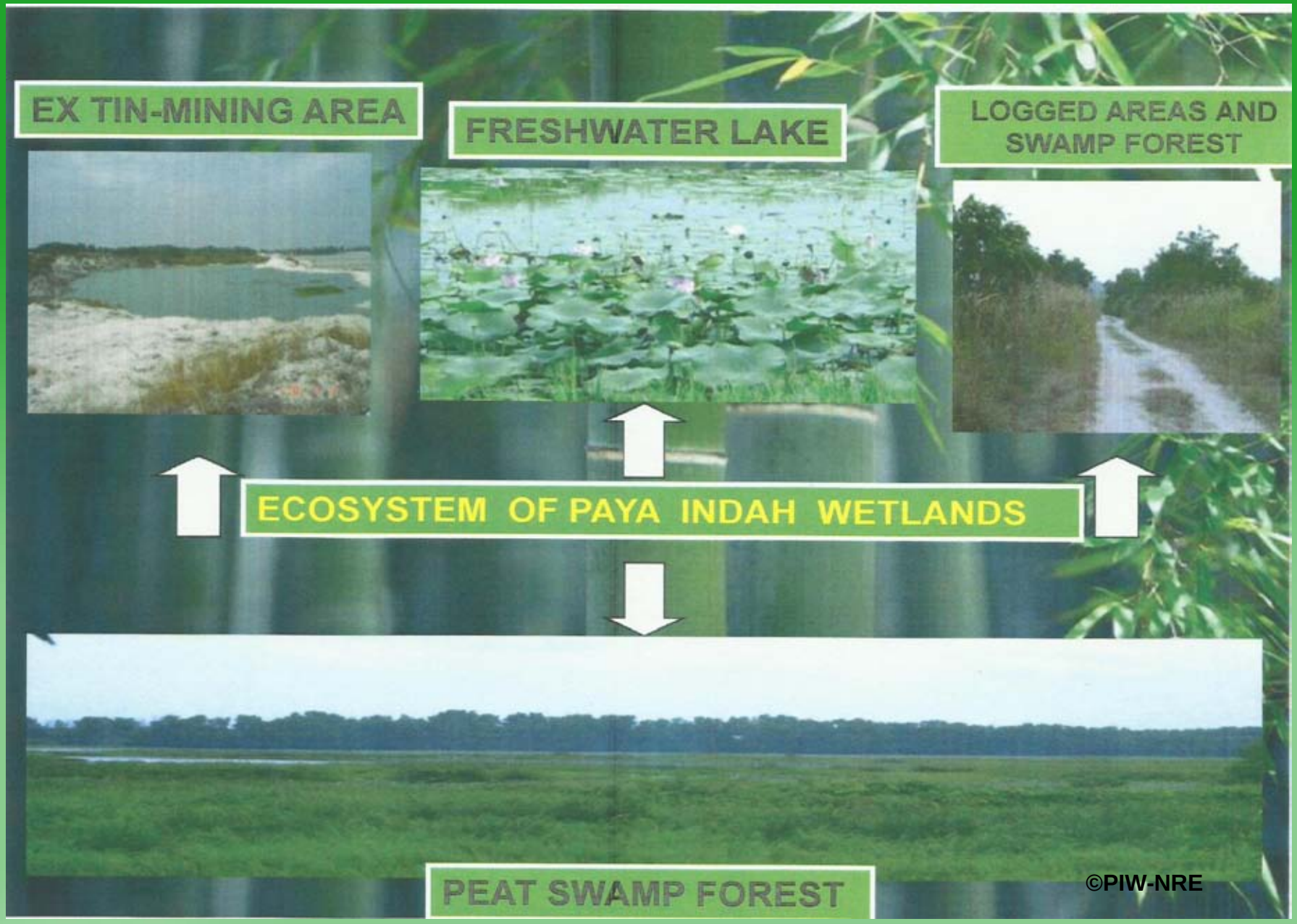
The purpose of cleaning the *Salvinia* is to make sure that the aquatic plants and ecosystem get enough light source.

REHABILITATION PROGRAMME IN PAYA INDAH WETLANDS

Stage 2
- Replanting project that aims to improve the structure of the soil due to mining activities.

Replanting projects in Paya Indah Wetlands.

The result from the replanting projects and one of the green programmes in Paya Indah Wetlands


EX TIN-MINING AREA
FRESHWATER LAKE
LOGGED AREAS AND SWAMP FOREST
ECOSYSTEM OF PAYA INDAH WETLANDS
PEAT SWAMP FOREST
©PIW-NRE

Present Day PIW

Nickel Mine in the Philippines


© Mitzi Pollisco
Sept. 2011


© Mitzi Pollisco
July 2013


© Mitzi Pollisco
Aug 2012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July 2013


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Aug 2012


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July 2013

Evidences of ecological succession

Presence of indigenous flora

2011

2013

Presence of decomposers - fungi

Presence of Soil biota

Presence of Soil Invertebrates

Other invertebrates


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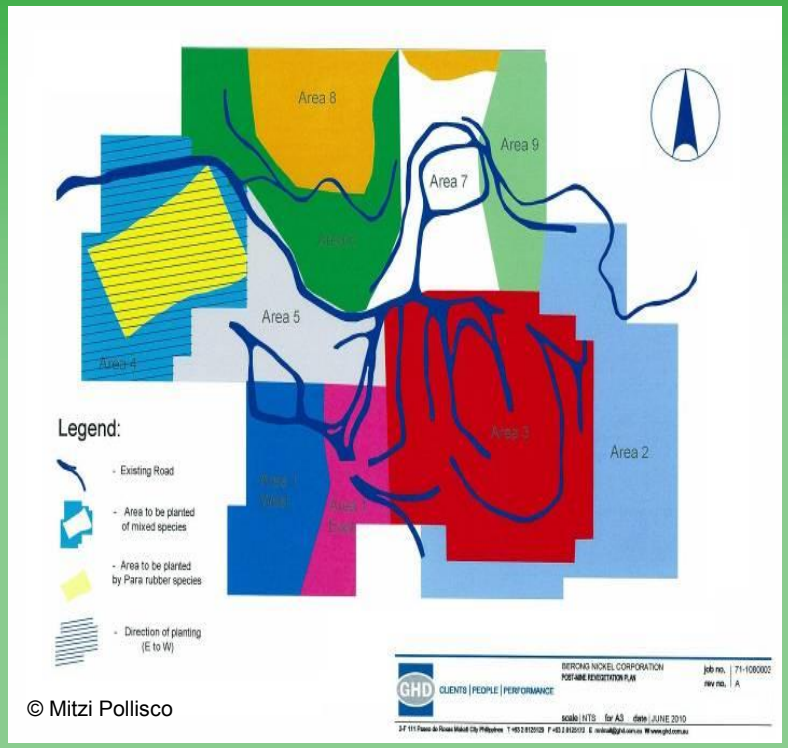
Part 2. Implications to ECR design

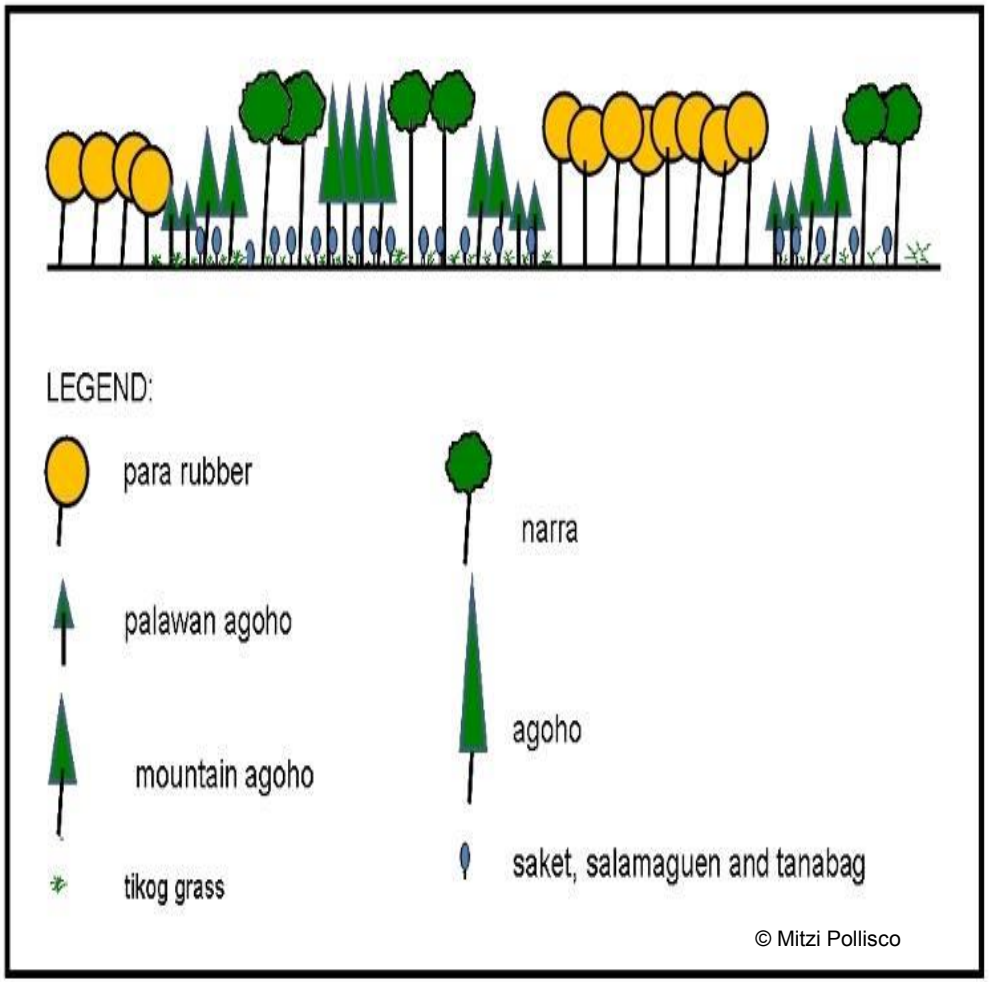


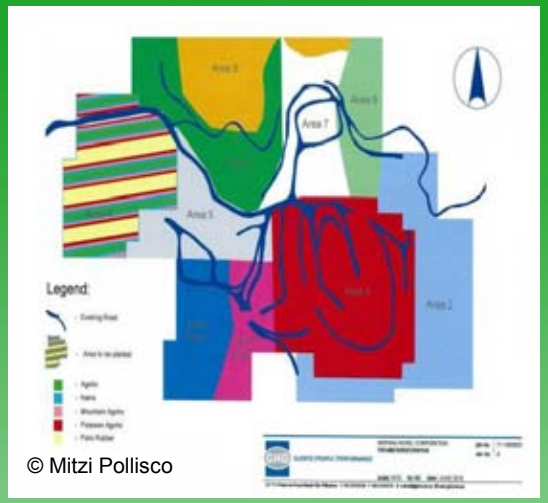
Factors to Consider:

- Site Conditions - biodiversity
- Topography / Landscape (LFA?)
- Soil substrate – soil biodiversity
- Weather / Climate
- Species to be brought back / to plant
- Stakeholders – communities!!!
- Ecosystem goods & services

Site Rehabilitation / Restoration

- Objectives of the rehab / restoration
  - Example: **Link biodiversity restoration to the major investment in plantation development such that economic benefits are also obtained**
- Strategy: example-**Native/indigenous species + naturalized landraces of economic importance (e.g. rubber trees)**
- Plan out the strategy….


LEGEND:
para rubber
palawan agoho
mountain agoho
tikog grass
narra
agoho
saket, salamaguen and tanabag
© Mitzi Pollisco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© Mitzi Pollisco

Last but not the least:

Consultation with stakeholders especially the local community!!!

Thank you for listening!!!