Global Peatland Distribution

Peat area: 300,813,500 Ha

Peatland Development in SE Asia

SE Asian Peat area:
363,490 km^2
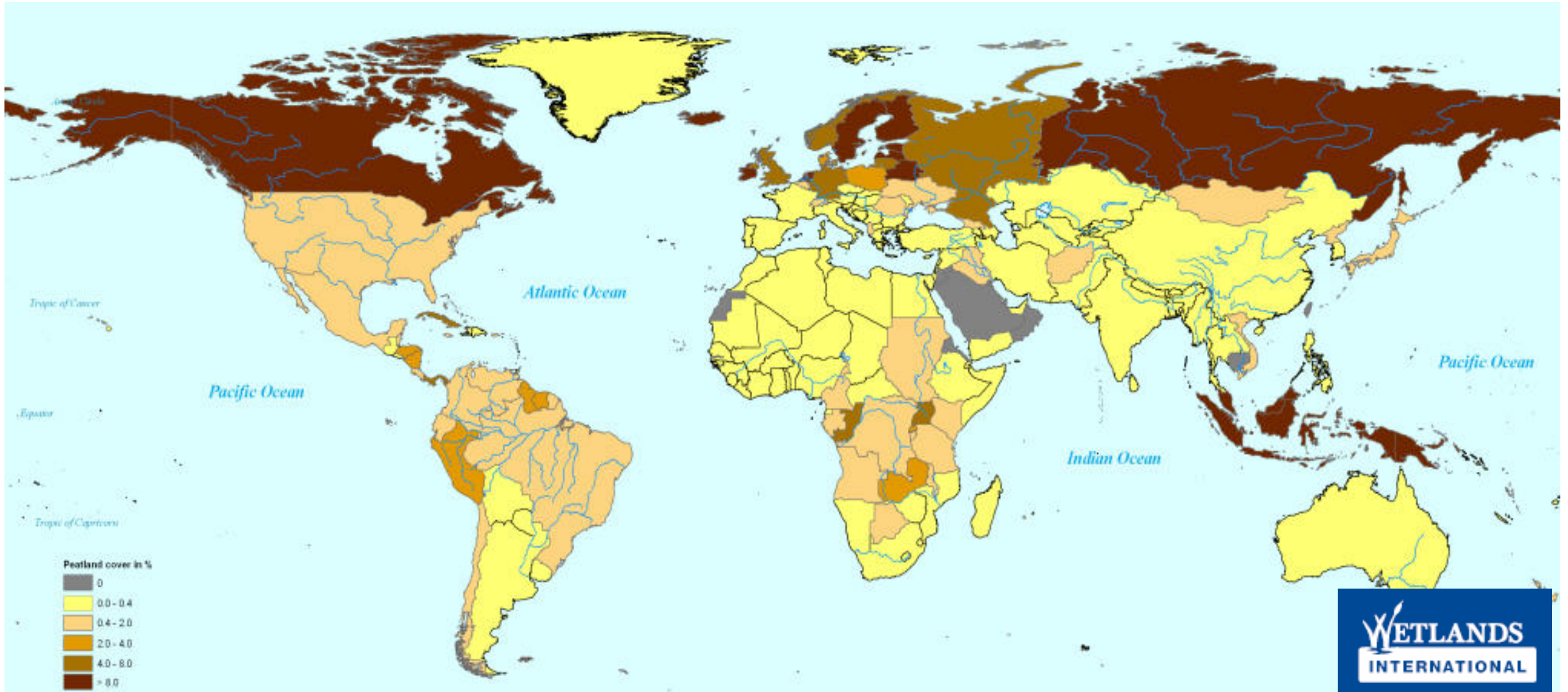
(including Papua New Guinea)

- 70% deforestation of Indonesian and Malaysian peatlands, mostly since 1990
- 50% of peatlands converted to oil palm and *Acacia* pulpwood plantation, 25 % degraded

Miettinen et al., Global Ecol Cons (2016)

Industrial plantation areas on peat
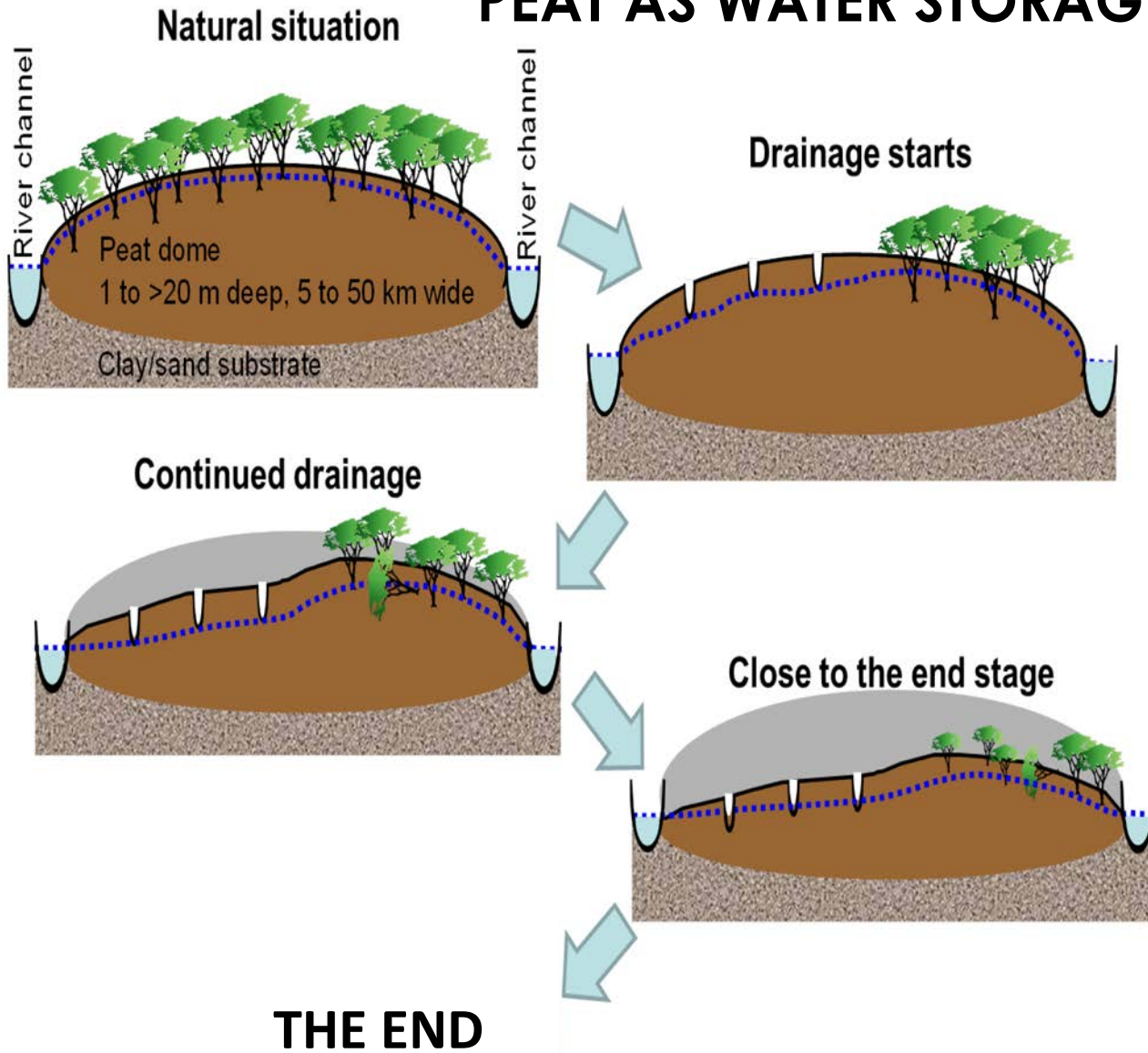
LARGE SCALE OF BUSINESS

Remaining Natural Conditions

Peatlands are water

- 10% fresh water storage in over the world
- Source to river
- Huge water storage and supply fresh water
- Role in dry and flood control

Marcel Silvius

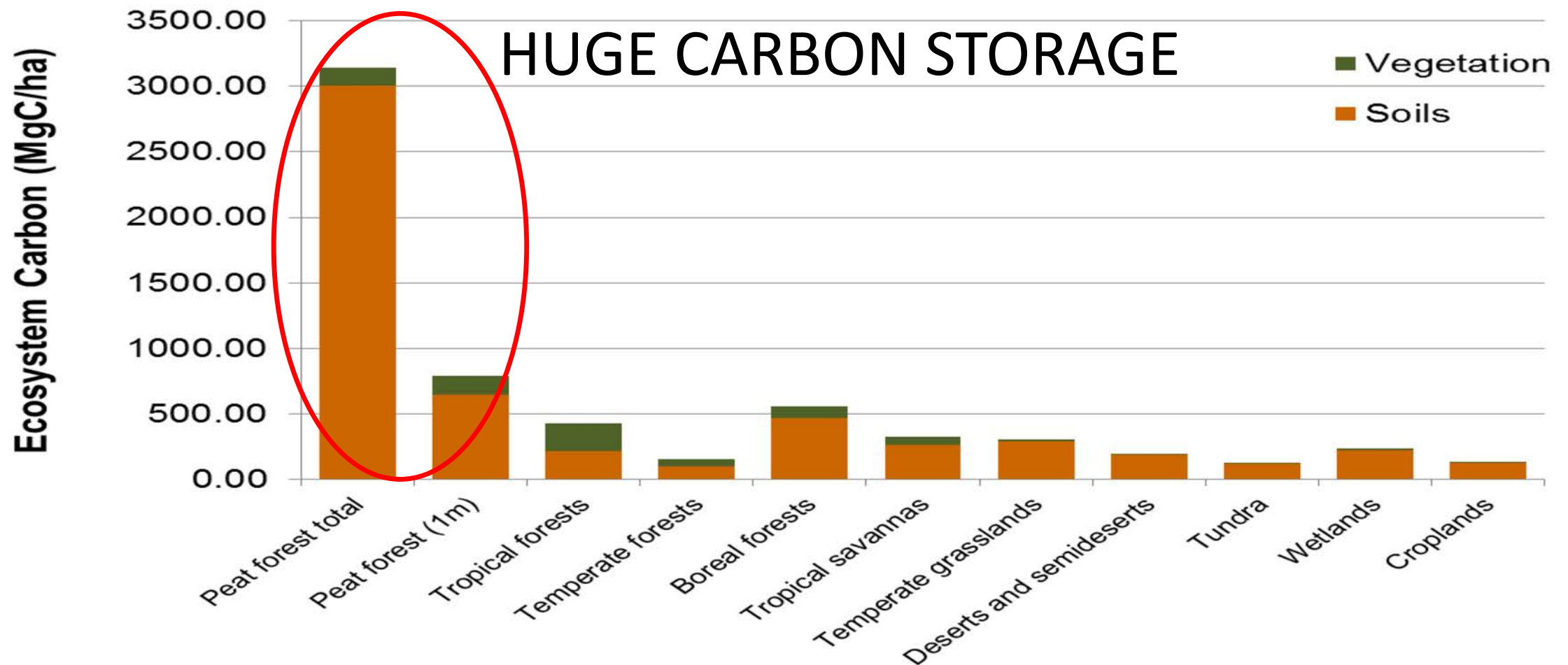# PEAT AS WATER STORAGE

Natural situation

River channel | River channel
Peat dome
1 to >20 m deep, 5 to 50 km wide
Clay/sand substrate

Drainage starts

Continued drainage

Close to the end stage

THE END

©Jyrki Jauhiainen

1995

2005

1995

2005

Ecosystem carbon stocks (MgC/ha) in global biomes and Indonesian peat swamp forest. Soil organic carbon estimates for global biomes are to 1m depth (Source: IPCC following Bolin et al., 2000). Estimate for *peat forest total* assumes mean peat depth = 4.73m; data from 15 peat forest sites and 63 individual peat cores (this study). Approximately 68% of Indonesia's 21 Mha of peatlands are >1m deep (Wahyunto et al. 2003, 2004, 2006).

Pressure: Peatland Fire
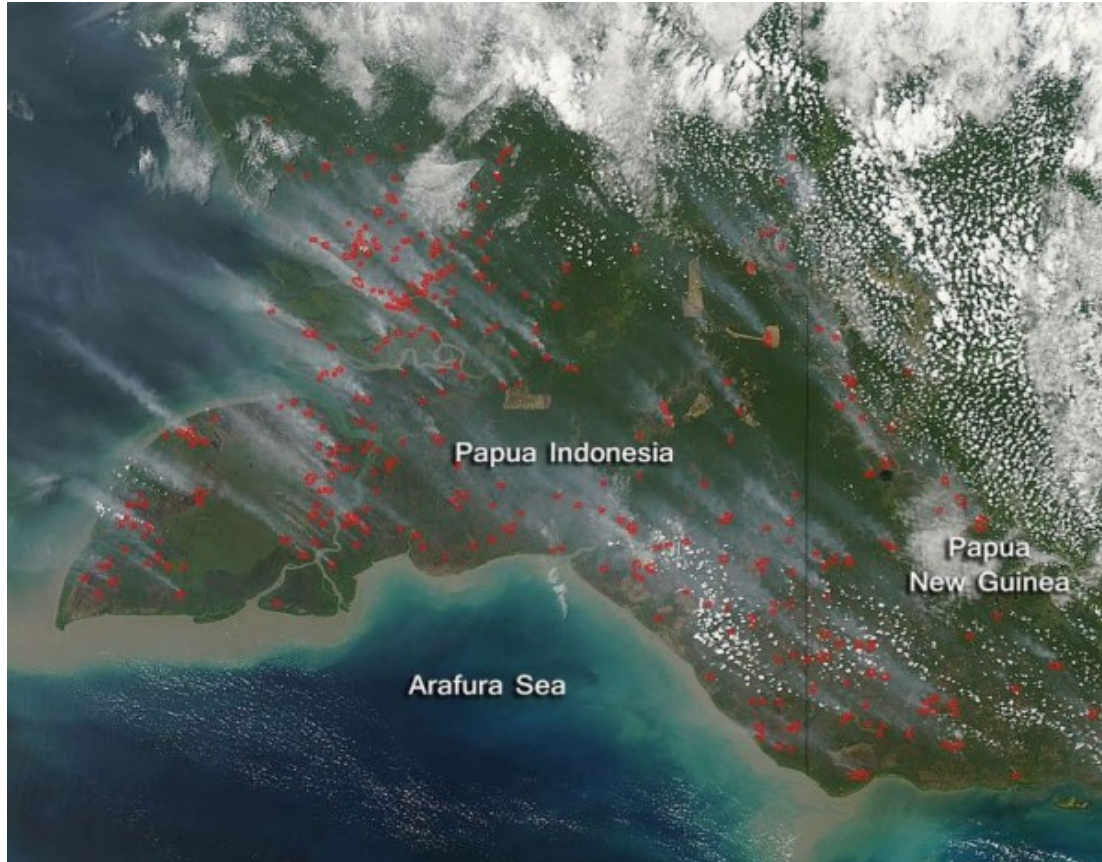
2015 El Niño fires, Southeast Asia (land clearance and illegal encroachment)

THE MOST SERIOUS HAZE DISASTER

"Peatland Restoration Agency (BRG) was established on January 6, 2016 in order to **accelerate** restoration of **its** **hydrological** of the peatland that caused by peat and forest fires

Thick Haze in Central Kalimantan 19-10-2015.

BRG Restoration target based on Presidential Regulation of the Republic Indonesia Number 1 of 2016

Riau
Jambi
South Sumatera

7 Provinces
Peatland Area

12,932,498

Central Kalimantan
West Kalimantan
South Kalimantan
Papua

± 2 Million Hectares

F O R

2 0 1 6 - 2 0 2 0

30%	20%	20%	20%	10%
2016	2017	2018	2019	2020

Peatland Restoration Steps (*restoration is a process*)

| Planning	Implementing	Monitoring & Reporting	Evaluation (*of success*)
• Survey • Analysis of survey data • Restoration Plan • Preparatory of restoration	• Hydrological functions (R1) • Revegetation (R2) • Revitalization of local livelihoods (R3)	• Monitoring Sites • Aspects monitored • Monitoring Methods & techniques • Monitoring report	• Level of success: Success, Partly Success, Failed • Recommendations for improvements

# Complexity of Integrated Peat Restoration: Case in Pulang Pisau and Kepulauan Meranti

- Case 1: Pulang Pisau District, Case 2: Kepulauan Meranti District
- Both are dominated by smallholders (farmers); but fire events in 2015 were not identical; social and biophysical factors may have impacts.
- Social factors include the awareness of people to keep peatlands wet; and Biophysical factors include the altered topography, peat moisture
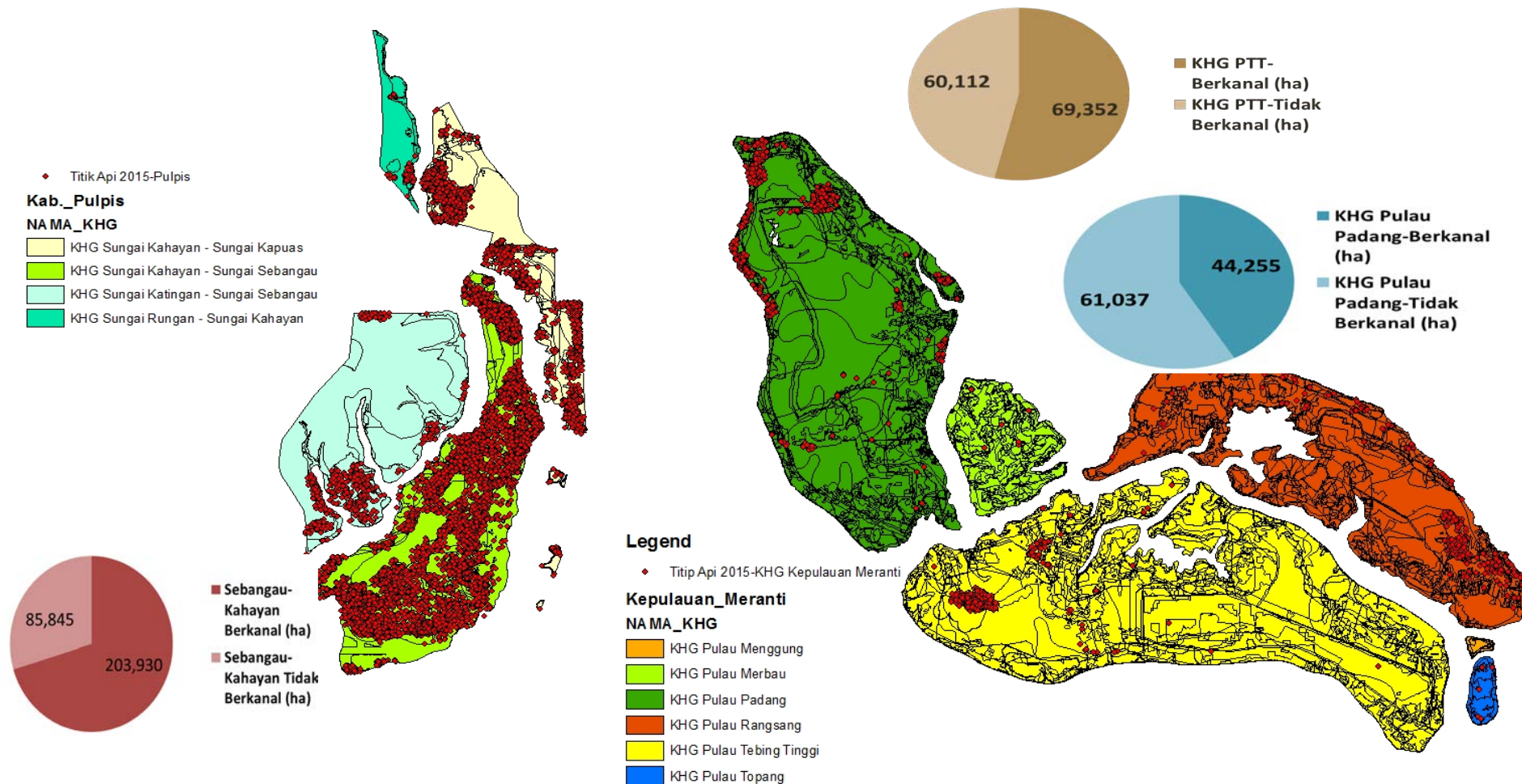
Research site of Restoration of Degraded Peatland

2010 : Burned Areas

February 2011 started restoration
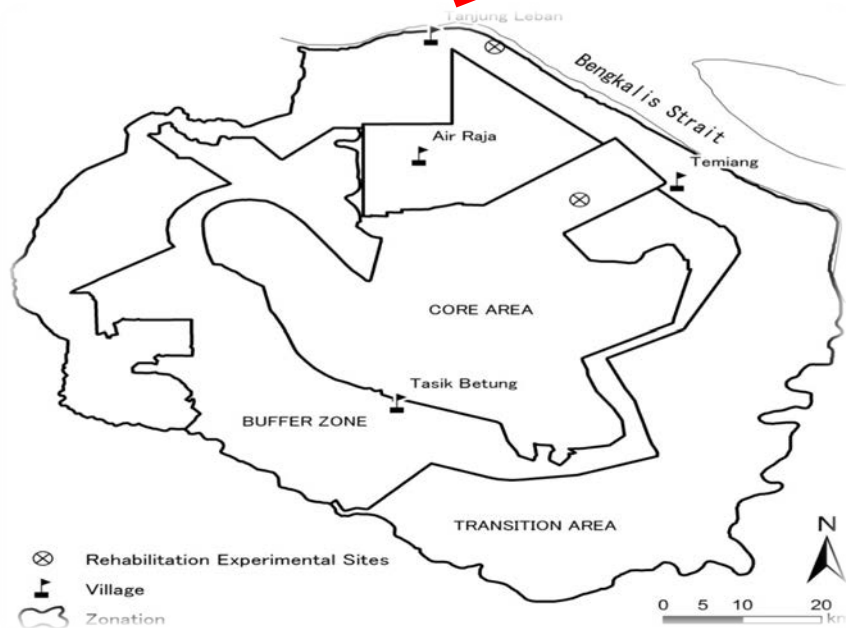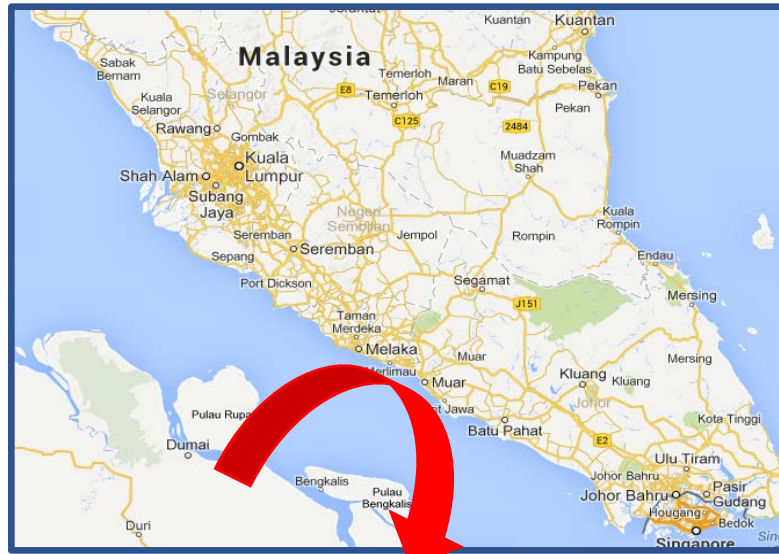
SMALL SCALE SUCCES STORY OF RESTORING DEGRADED PEATLAND S

Long time Processes to Restore Degraded Peatland-Research Action in Giam Siak Landscape

Nov 2011

Jan 2017

July 2018: Sustain with Communities

Lesson Learnt KHG Pulau Tebing Tinggi, Riau Province

SUCCESS STORY OF PEAT RESTORATION by Sago Palm and Wet-moist Peatland

Number of Hotspot in 7 Provinces of Priority Peatland Restoration Based on Rewetting Infrastructure Distance and Peat Care Village (DPG) Program

43.287 TITIK PANAS TERPANTAU SELAMA JANUARI–SEPTEMBER 2018 TERSEBAR PADA LAHAN GAMBUT DAN NONGAMBUT

33.685 Di Lahan Nongambut

9.602 Di Lahan Gambut

Jumlah Titik Panas di 7 Provinsi Prioritas BRG Berdasarkan Jaraknya dengan Infrastruktur Pembasahan Gambut

PENIMBUNAN KANAL: 4 / 9

SEKAT KANAL: 149 / 389

SUMUR BOR: 55 / 155

Keterangan:
- Radius 1 km
- Radius 2 km

Data:
- Satelit SNPP dan MODIS Terra/Aqua
- Data gambut BBSDLP, Kementerian Pertanian

PENURUNAN TITIK PANAS PADA DESA PEDULI GAMBUT DI 7 PROVINSI

Hingga September 2018

RIAU 91%
JAMBI 100%
SUMATERA SELATAN 99%
KALIMANTAN BARAT 23%
KALIMANTAN TENGAH 91%
KALIMANTAN SELATAN 95%
PAPUA 93%

Concluding Remark

- Peatland restoration in Indonesia is a processes toward in mitigation of carbon emission, enhancement of carbon stock, and improvement of community livelihoods

- It is expected that by effective peat restoration measures (rewetting, revegetation, and revitalisation of local economy), the peat restoration agency could perform carbon emission mitigation and contribute to suppress peatland fire

- Peat restoration requires integration of multiple stakeholders, to engage in restoration of a PHU; and maintained in a long term (until peat ecosystem is resilient)

どうも ありがとう ございました: **TERIMA KASIH**

Enjoy Ecotourism

Enjoy Restoration

JAGA KELESTARIAN EKOSISTEM GAMBUT UNTUK MASA DEPAN BANGSA #BRG2INDONESIA

Badan Restorasi Gambut   BRG_Indonesia   Badan Restorasi Gambut-BRG

Enjoy Conservation
ISPA to SPA-AIR GAMBUT

Peat land spa in Tokyo

Modified from Hayashi, 2010