



WORLD
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Revitalization of Livelihoods through Rice Cultivation as an Approach for Tropical Peatland Restoration

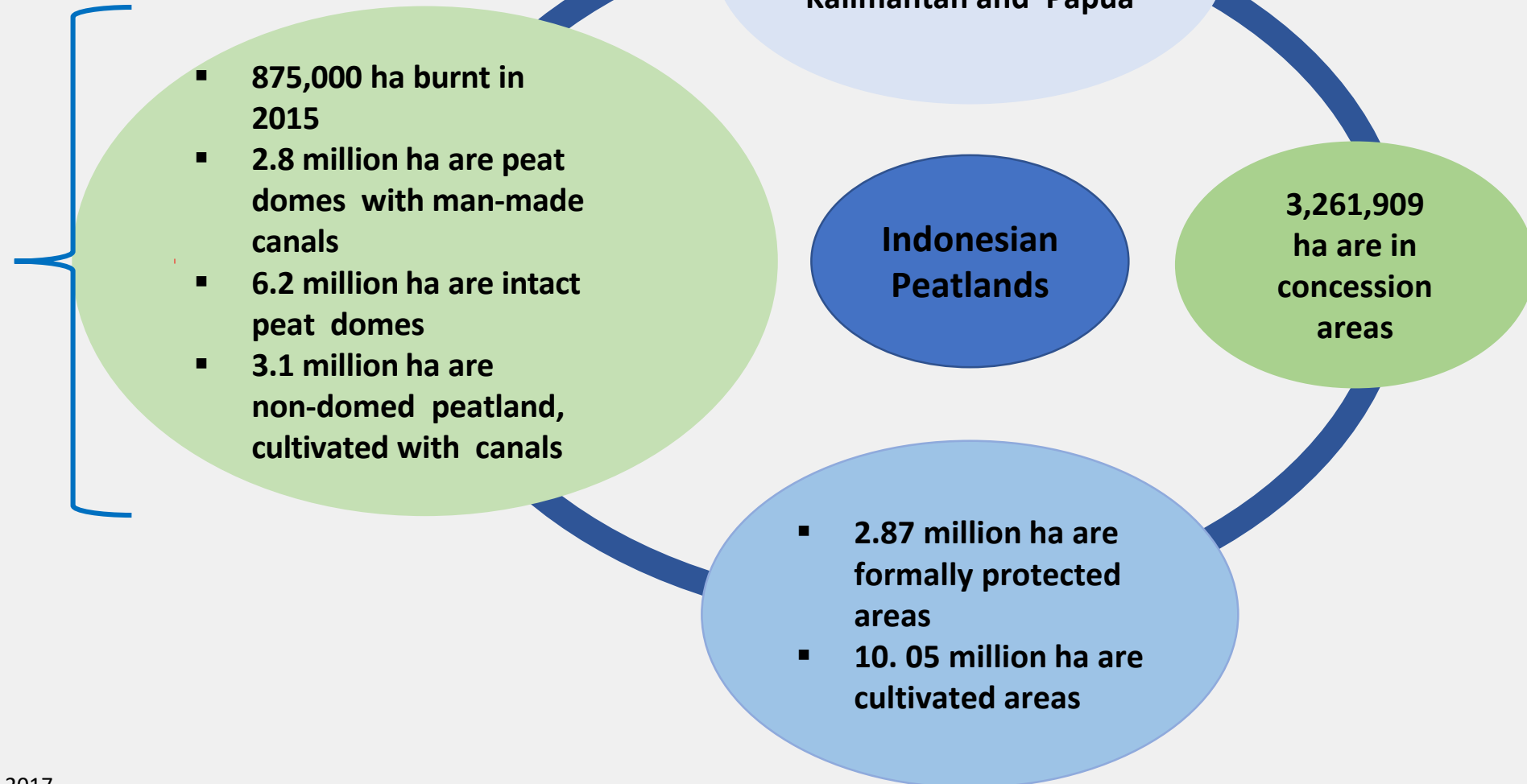
Eli Nur Nirmala Sari
(WRI Indonesia)

Targeted Peatland Restoration Area

2.4 million ha will be restored:

- 684,637 ha in protected areas
- 1.4 million ha in concession areas
- 396,943 ha in other cultivation areas

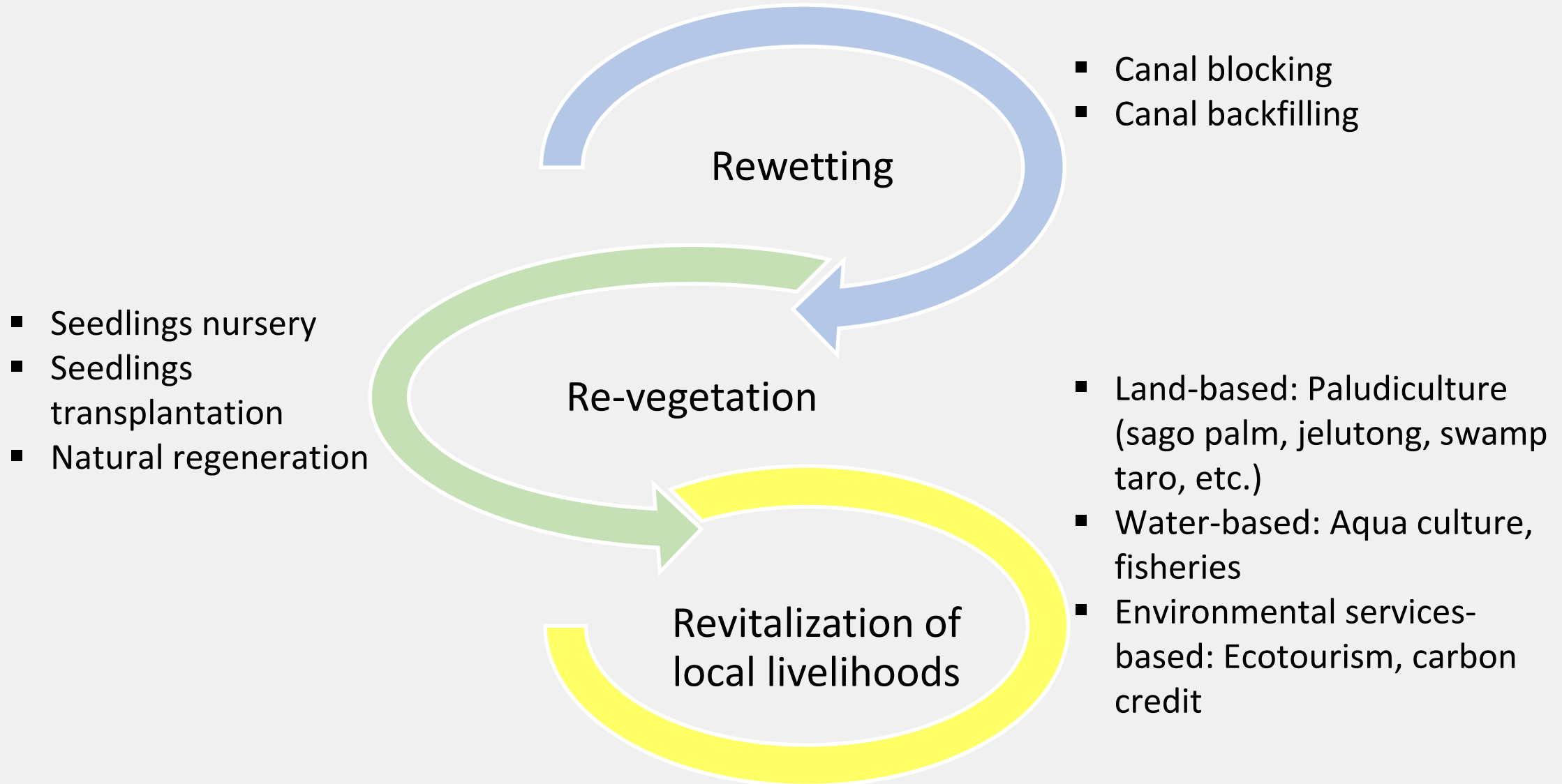
7 provinces





1. South Sumatra; 2. Jambi; 3. Riau; 4. West Kalimantan; 5. Central Kalimantan; 6. South Kalimantan; 7. Papua

Peatland Restoration Approach



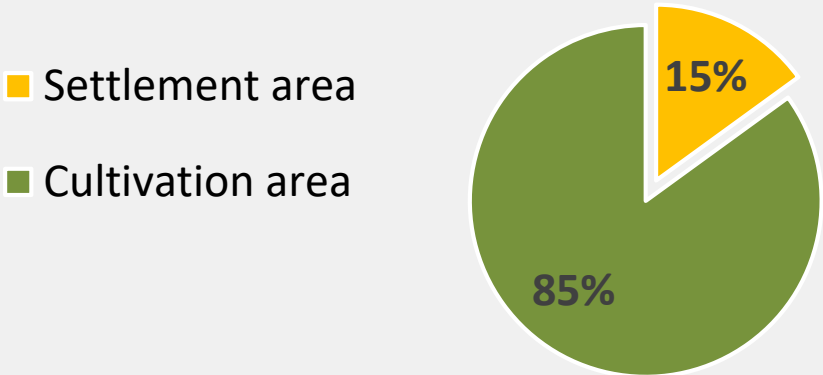
Targeted Site for Rice Cultivation on Peatlands



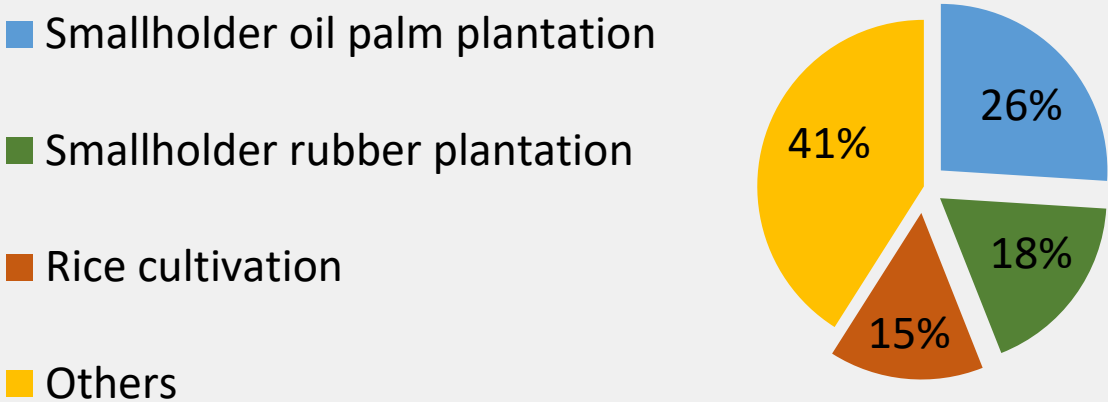
Sebangau Jaya Village, Sebangau Kuala Sub-district, Pulang Pisau District,
Central Kalimantan Province

Village Profile

Village area = 3,970 ha



Household number = 117



Cultivation Type	Production	Value
Rice cultivation (with burning)	2 tons/ha/rotation (4 months)	(Harvest dry grain) IDR 4,000,000/ha/rotation
Rice cultivation (without burning) without treatment	50kg/ha/rotation	(Harvest dry grain) IDR 100,000/ha/rotation
Oil palm plantation	600kg/ha/month	IDR 180,000/ha/month
Rubber plantation	100kg/ha/month	IDR 600,000/ha/month

Zero Burning Peatland Management for Rice Cultivation (without treatment)



- Peat depth: 50-100cm (shallow peat)
- pH = 4
- Area = 1 ha
- Production (without any treatment) = 50 kg/ha



Concept of Zero Burning Peatland Management for Rice Cultivation

	Rice Cultivation with Burning	Zero Burning Rice Cultivation (/with decomposer)
Methodology	Land clearing with burning	Land clearing done manually
	Using dolomite	Using decomposer
NPK fertilizer	✓	✓
Fertilizer application	Not well aorganized	Time arrangement
Peatland depth	Shallow peat/Peaty soil	Shallow peat/Peaty soil

1

Land Clearing



2

Land Management



3

Cultivation



Making a nursery

Transfer seedlings to land



Conditions after seedling are transferred to the land



15 days after planting



38 days after planting









65 days after planting





'Blast' disease



Not enough water



Weeds



Planthopper pest

79 days after planting





86 days after planting



89 days after planting







91 days after planting



Harvesting (110 days after planting)





Good condition of rice grains



Not good condition of rice grains

- ✓ Production = 4.5 ton/ha (Harvest dry grain)
- ✓ If the activity is carried out in accordance with the SOP, the production is expected to reach 5.9 tons/ha (Harvest dry grain)



PLTB PADI DI DESA SEBANGAU JAYA KECAMATAN SEBANGAU KUALA

KABUPATEN : Pulang Pisau
 KAWASAN : Pengembangan / PLTB Padi
 KOMODITAS : Padi varietas Impara 1 dengan sistem penanaman BK gambut dan Poni pupuk Bio Organik

Pengambilan sampel ubinan dilakukan di 4 (empat) titik dengan ukuran tiap titik sampel 2 m x 2 m = 4 m², hasil yang diperoleh tiap titik adalah :

- Titik 1 : 2,375 Kg
- Titik 2 : 1,3 Kg
- Titik 3 : 1,7 Kg
- Titik 4 : 1,9 Kg

Sehingga diperoleh total = 7,275 Kg : 4
 = 1,81 Kg x (10.000 : 4)
 = 4,5 Ton/Ha GKP


Dari pengambilan 4 (empat) titik sampel terdapat 1 (satu) titik dengan hasil 2,375 Kg/ 4 m², artinya produksi 5,9 Ton/Ha GKP akan mampu ditingkatkan apabila beberapa kendala yang di hadapi pada pelaksanaan demplot PLTB ini mampu diatasi, kendala yang dihadapi antara lain :

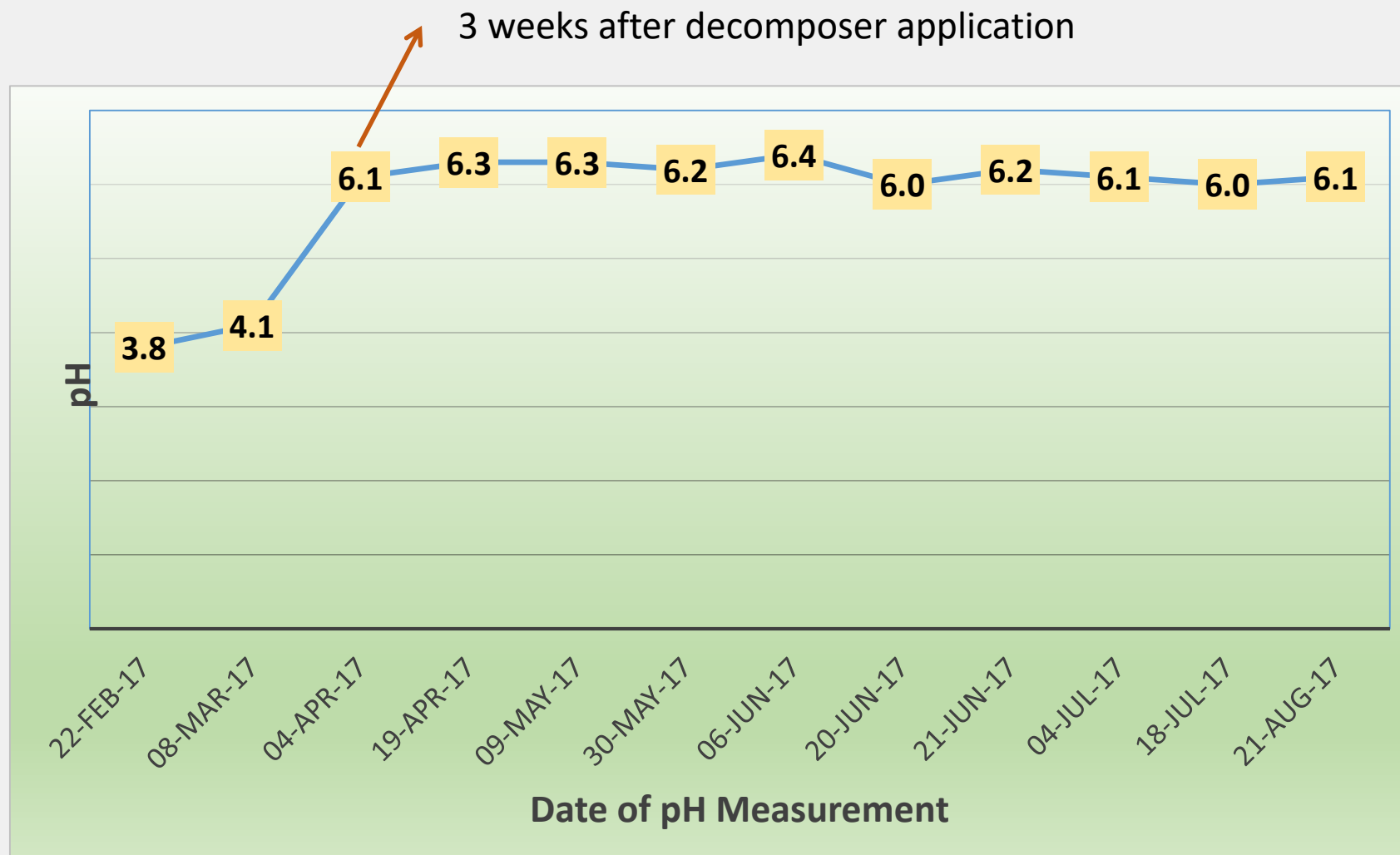
1. Musim tanam Asep rentan terhadap kekurangan air.
2. Jadwal pemupukan mengalami keterlambatan akibat kekeringan (pompa air belum dipasang)
3. Tingkat serangan hama tikus, penggerek batang pada musim tanam Asep cenderung tinggi dan lambat di antisipasi oleh petani pelaksana.
4. Lokasi demplot yang dikelilingi oleh semak belukar menyebabkan serangan hama burung dan rentan menurunkan hasil panen.

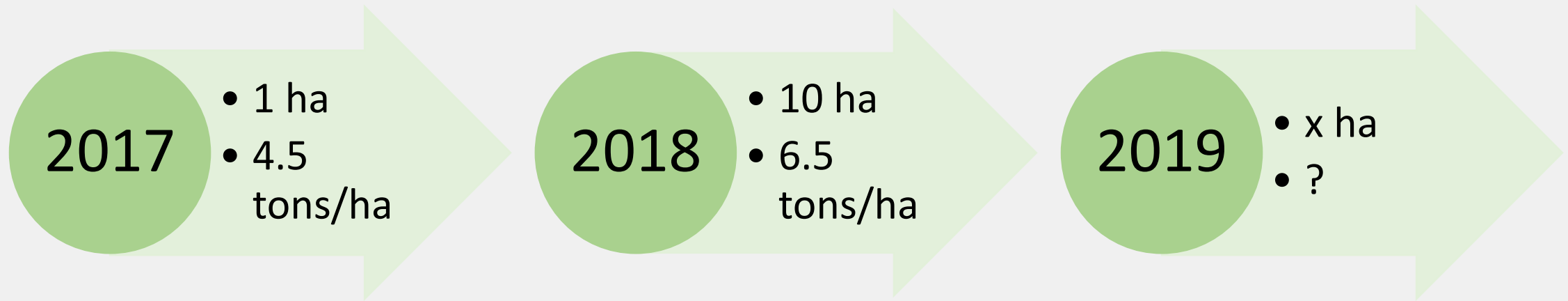
Demikian analisis hasil ubinan ini dibuat sebagai lampiran untuk dapat dipergunakan sebagai bahan pertimbangan.

Sebangau Kuala, 21 Agustus 2017

Kepala BP3K Sebangau


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Cultivation Type	Average Production	Price per kg	Value per year
Rice cultivation (with decomposer)	6 tons/ha/rotation (once/year)	IDR 2,000	IDR 13,000,000/ha
Oil palm plantation	600kg/ha/month	IDR 300	IDR 2,160,000/ha
Rubber plantation	100kg/ha/month	IDR 6,000	IDR 7,200,000/ha

CHALLENGES

Canals on peatlands are prepared for plantations, not rice fields. Thus, irrigation infrastructure needs to be prepared so that rice cultivation can be implemented 2 times per year (potentially to increase production).

NEXT RESEARCH



South Sumatra Province

Organic agriculture on peatlands?