



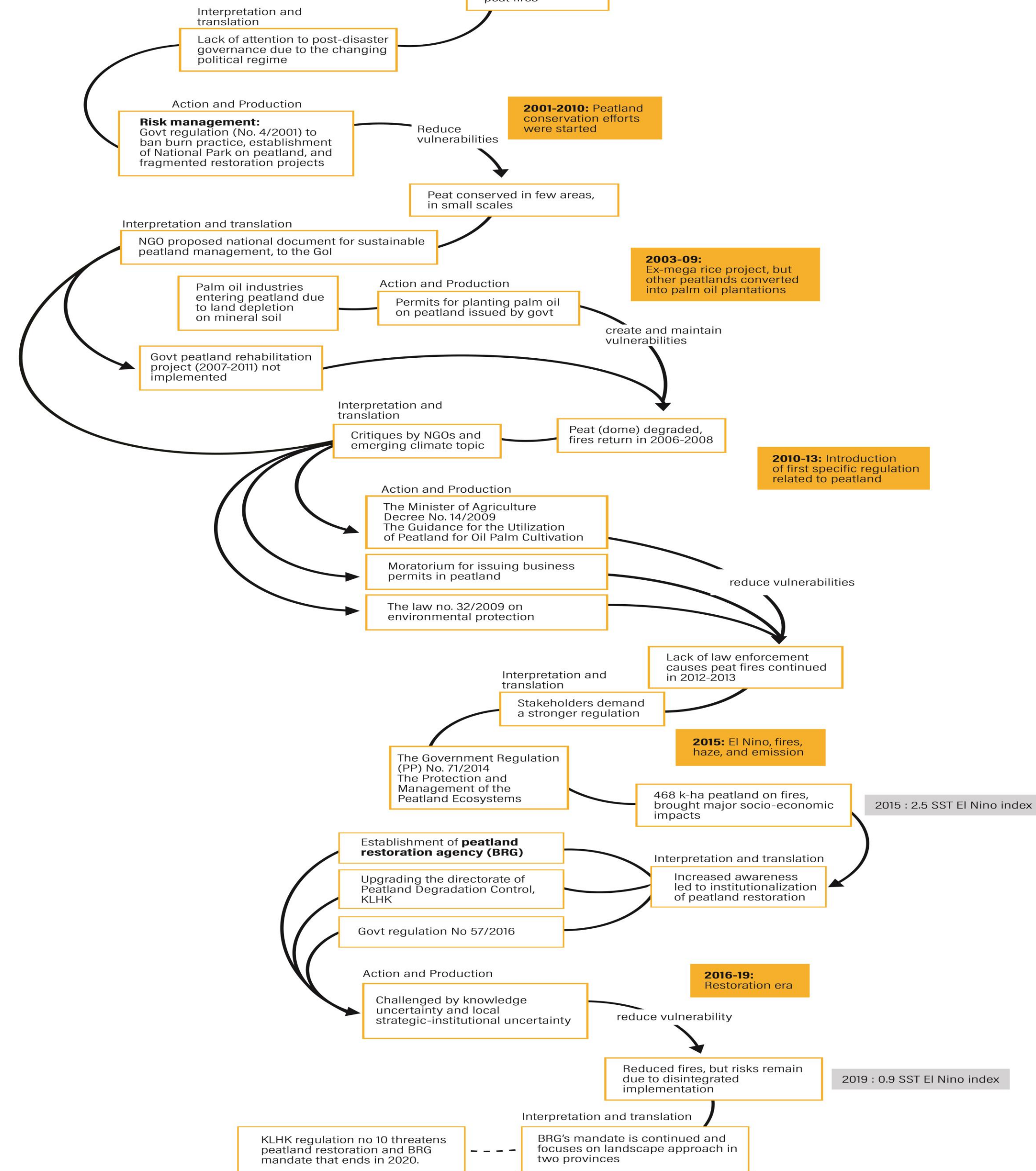
STRENGTHENING CONNECTIVITY FOR SUSTAINABLE PEATLAND MANAGEMENT



IBNU BUDIMAN, RIZKY J, WILLY D, RAHMAH DH, ELI NNS
WORLD RESOURCES INSTITUTE INDONESIA

INTRO:

- 22 m-ha peatland in Indonesia, **>2 m-ha degraded; devastating peatland wildfires** in the El Nino years (1982, 1997, 2015 and 2019)
- Existing policy instruments:
 - Conversion ban; **concession areas on peatland** are reduced
 - Restoration** is on progress
- Future risk** is complex and interlinked;
 - Land use & climate change, el nino, fires
 - Infectious diseases, economic crisis
- Further measures** are required



OUTLINE



- **Paludiculture** for sustainable peatland management
- **Special pilot economic zone** as a strategy to develop paludiculture
- Strengthening **connectivity** to develop special pilot economic zone for paludiculture

SOURCES



e-ISSN 2597-9949
JGLITrop Vol.4, No.1, February 2020
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**JURNAL GEOGRAFI
LINGKUNGAN TROPIK**
Journal homepage: <http://jglitrop.ui.ac.id>

Designing the Special Pilot Economic Zone: An Alternative Approach to Revitalize Livelihoods on Peatlands

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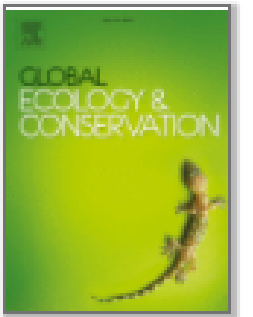
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ELSEVIER

Global Ecology and Conservation

Volume 23, September 2020, e01084



Original Research Article

Progress of paludiculture projects in supporting peatland ecosystem restoration in Indonesia

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<https://doi.org/10.1016/j.gecco.2020.e01084>

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PALUDICULTURE: 1. PLANTING NATIVE/ADAPTIVE SPECIES ON WETTED PEATLAND

Table 1

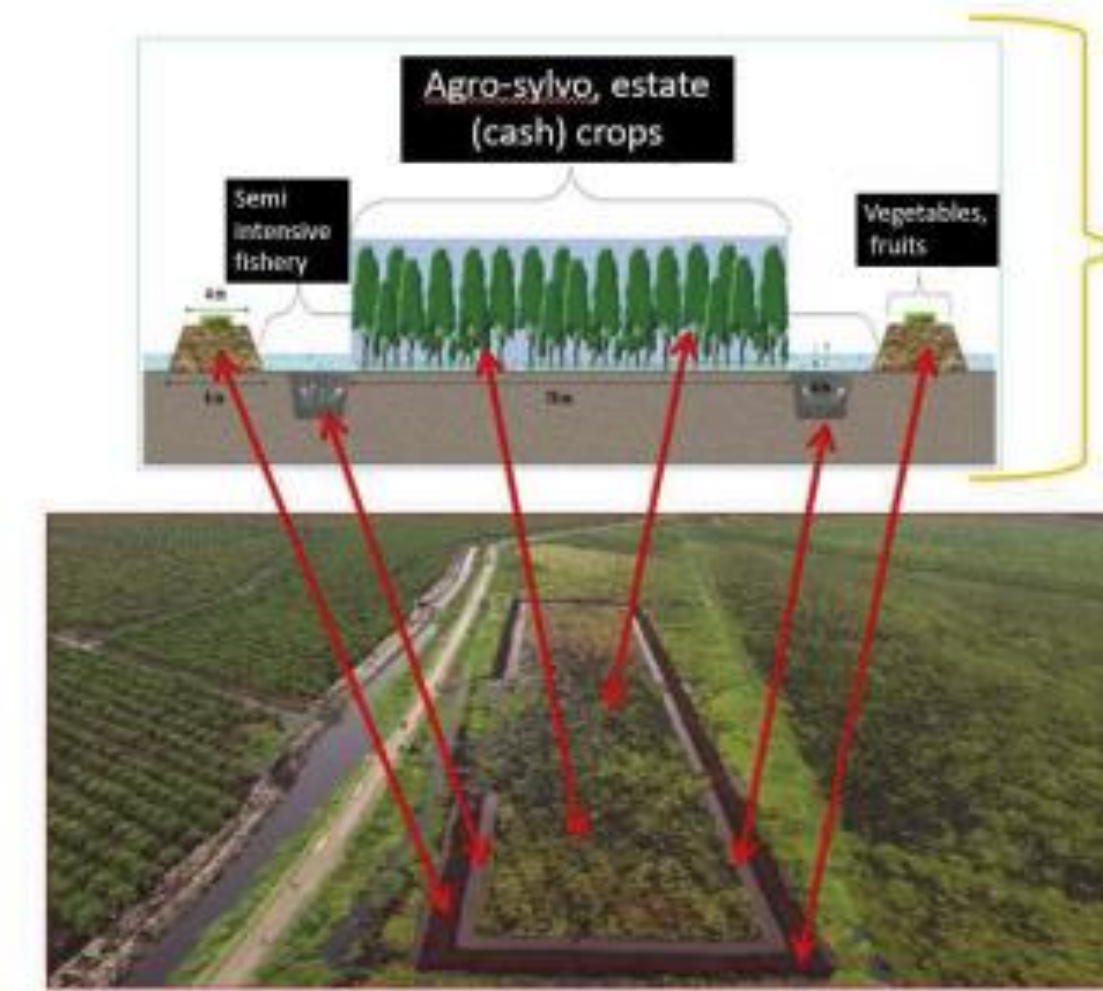
The four categories of paludiculture species (adapted from [Giesen, 2015](#)).

Category	Description	Species
Quick harvest	Species that can be harvested quickly but with a lower unit value ^a	<ul style="list-style-type: none"> • <i>Eleocharis dulcis</i> (purun tikus) • <i>Ipomoea aquatica</i> (spinach) • <i>Momordia charantia</i> (bitter gourd) • <i>Uncaria gambir</i> • <i>Nephrolepis biserrata</i> and <i>Stenochlaena palustris</i> (pakis)
Proven commercial crop	Well-known cash crop on peatlands	<ul style="list-style-type: none"> • <i>Aquilaria beccariana</i> • <i>Melaleuca cajuputi</i> (gelam/cajuput) • <i>Metroxylon sagu</i> (sagoo) • <i>Dyera polyphylla</i> (<i>D. lowii</i>) (jelutong) • <i>Nothophoebe coriacea</i> and <i>Nothophoebe umbelliflora</i> (gemor) • <i>Gonystylus bancanus</i> (ramin)
Unproven commercial crop	More research is required about its commercial values on peat lands	<ul style="list-style-type: none"> • <i>Garcinia mangostana</i> (mangosteen) • <i>Syzgium aqueum</i> (water apple) • <i>Aleurites moluccana</i> (candlenut) • <i>Shorea balangeran</i> (balangeran)
Potential species	58 species on which further research on ecological suitability and market demand is required (Giesen, 2015).	

^a The total value of the purchases / sales divided by the sum of the quantities.

2. CULTIVATION TECHNIQUES: NEEDS FOR KNOWLEDGE/TECHNOLOGY TRANSFER

- No/low drainage
- **Monitoring** biophysical and socio-economic characteristics;
 - › Groundwater table, Subsidence,
 - › Plant growth, carbon sequestration,
 - › Productivity

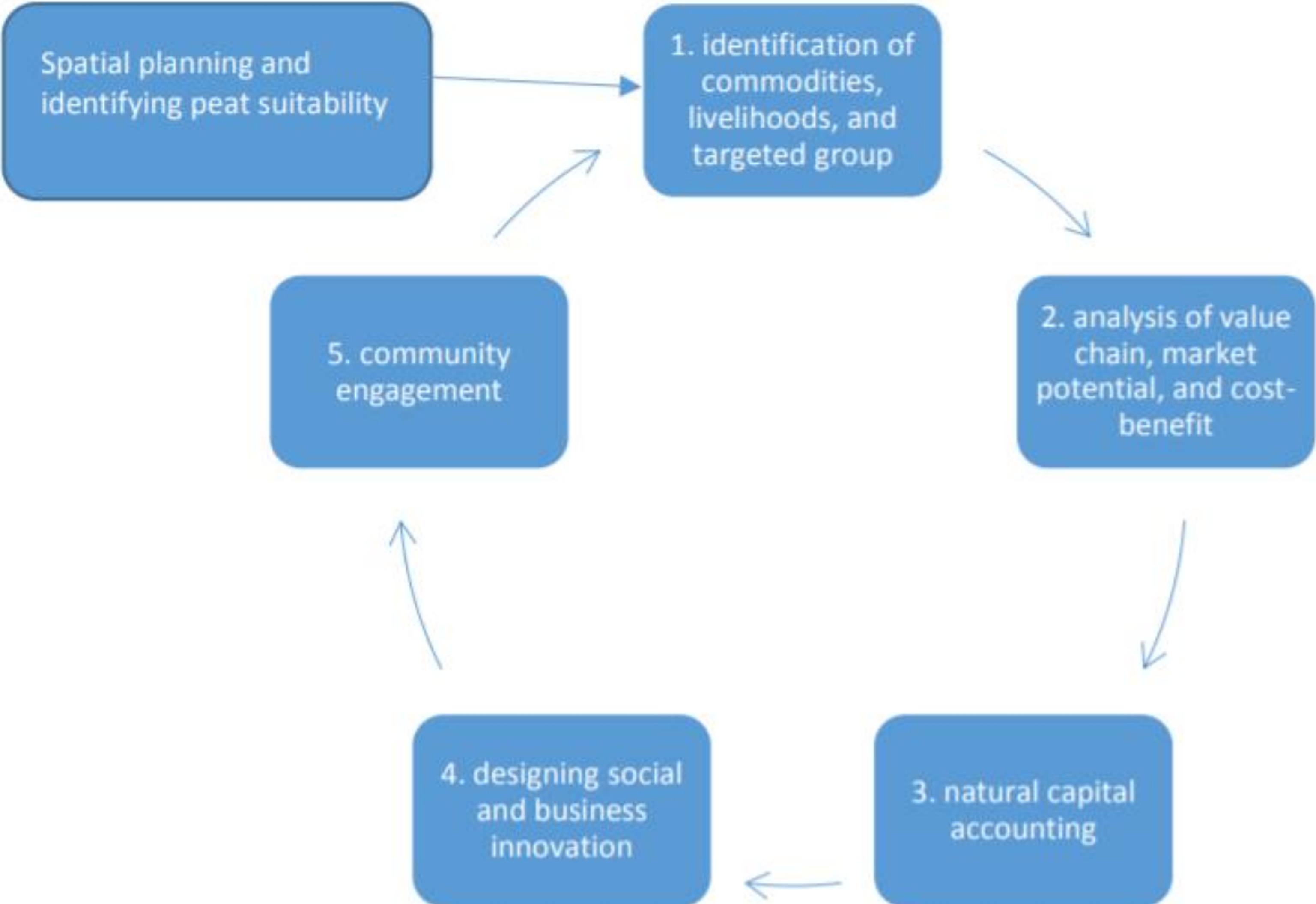


SPECIAL PILOT BIOECONOMIC ZONE FOR PALUDICULTURE



- An area that has the excellence in geo-economics and geo-strategy to accommodate sustainable economic activity.
- Involving the **socio-environmental outcome**
- Attracting **international investors** in establishing **sustainable businesses**
- Addressing market failures or binding constraints faced by **peatland products**, to support revitalization of **rural livelihood**.

SPECIAL PILOT BIOECONOMIC ZONE: DESIGNING SUSTAINABILITY





POTENTIAL CONNECTIVITY

CONNECTIVITY



- (Business) collaboration on
 - › Germany has experienced **paludiculture development for about 30 years**
 - › Sustainable Peatland Management, the **Netherlands** through Wetlands International.
 - › Special pilot economic zone, Hungary, etc.
- Potential to **strengthen the connectivity between Germany, Indonesia, and the Netherlands.**
 - › According to the ASEM SC Portal, Germany and the Netherlands has more than **8000 research collaborations**
 - › The **GIZ** (*Gesellschaft für Internationale Zusammenarbeit*) for climate action in Indonesia.
- Other potential networks: UK-RI, NMFA (Norway), EU (SUPA)

BIOECONOMIC ZONE WITHIN A PEAT LANDSCAPE



Whole peatland hydrological unit
Including forest area and non-forest area

Rewetting
Integrated water management system

Revegetation
Using native species

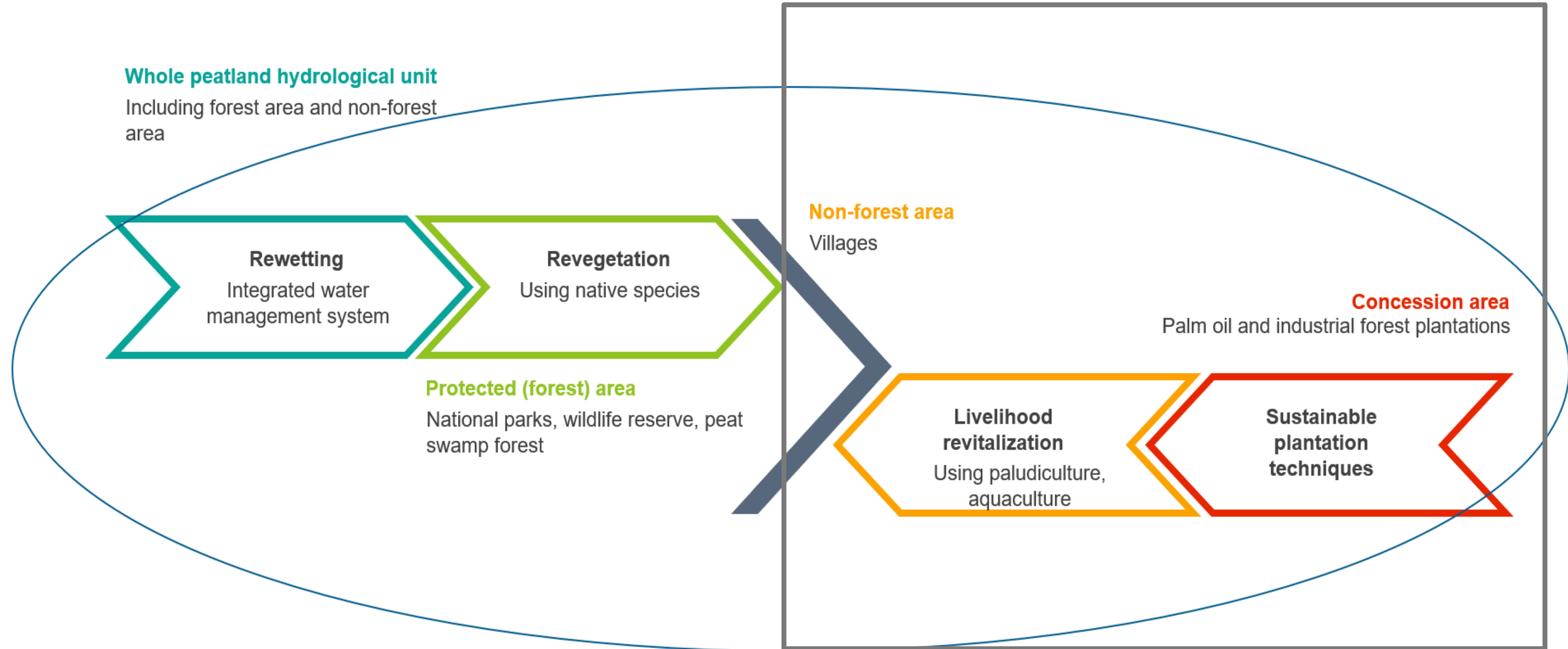
Protected (forest) area
National parks, wildlife reserve, peat swamp forest

Non-forest area
Villages

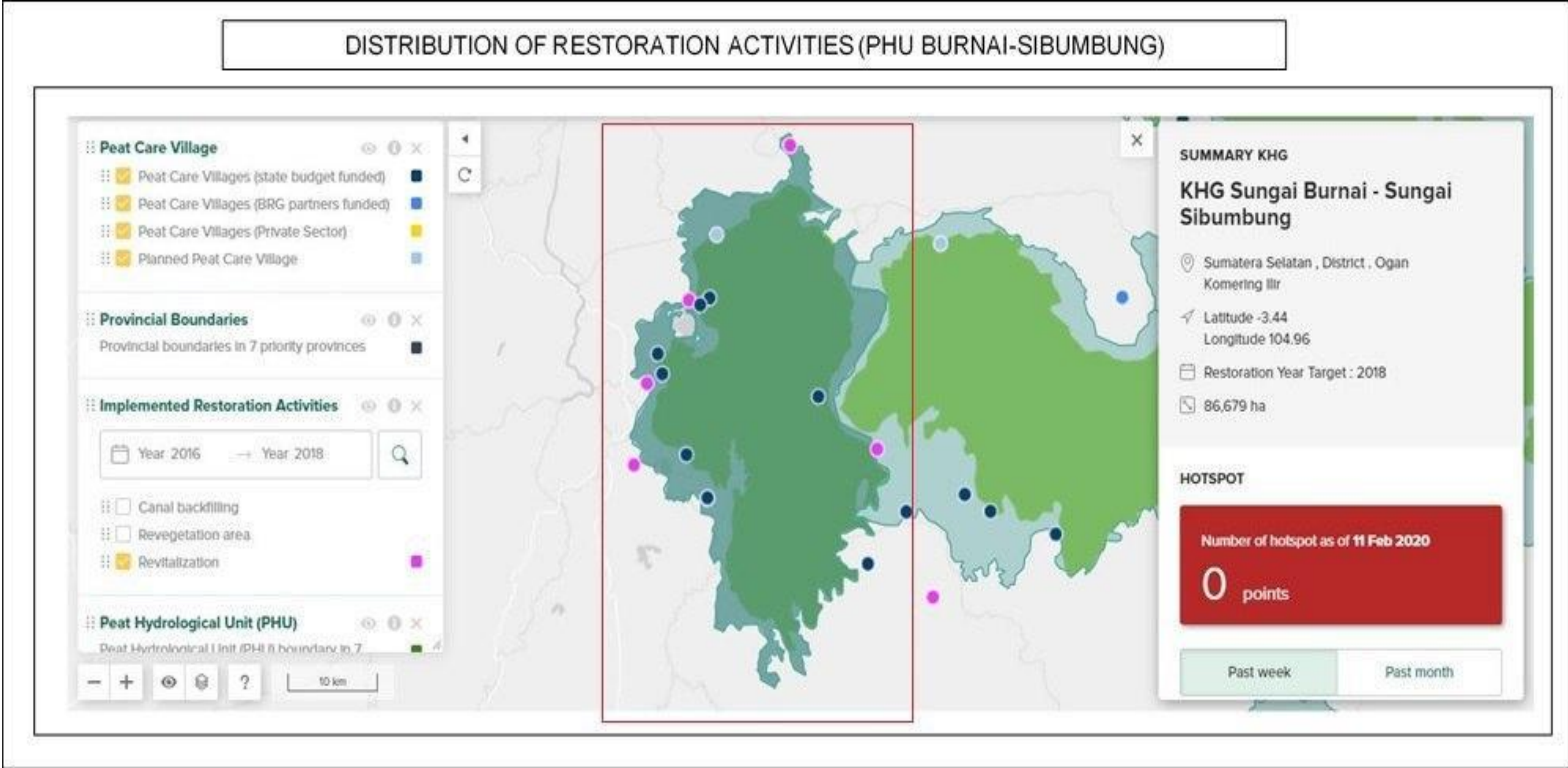
Concession area
Palm oil and industrial forest plantations

Livelihood revitalization
Using paludiculture, aquaculture

Sustainable plantation techniques



GLOBAL CONNECTIVITY IN LOCAL LANDSCAPE



FURTHER RESEARCH



- Assessment of policy instruments in both sides and its connectivity
 - › Indonesia; regulation on special economic zone & sustainable peatland management, restoration
 - › EU?

