

# INNOVATIVE SOLUTIONS IN ADDRESSING FOREST AND LAND FIRE ISSUES IN INDONESIA

(Supported by ITTO  
Fire Project PP-56-340-1)

12 November 2024, 16:45 –18:15 hrs (UTC+4)

Blue zone, side-event room 2

ITTO–FFPRI side-event “Innovations to maximize tropical forests’ contribution to climate change mitigation and adaptation”

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Ministry of Environment and Forestry, Indonesia



# OUTLINE

- ❑ Introduction
- ❑ Integrated forest and land fire management
- ❑ Framework of ITTO program on Capacity Building on Forest and Land Fire Management in Indonesia
- ❑ Program implementation of Land Preparation Without Burning
- ❑ Lesson learned and challenges of program
- ❑ Way forward

# INTRODUCTION

Climate Change as part of the Triple Planetary Crisis:  
Indonesia is one of the countries most vulnerable to climate impacts

*Triple Planetary Crisis* (The crisis that threatens the future of the earth & humanity)

GLOBAL

## Climate Change

Around 50-75% of the global population could potentially be affected by life-threatening climate conditions by 2100. (IPCC, 2022)

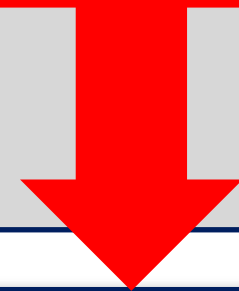
## Pollution and Environmental Damage

Air pollution has been named the world's biggest cause of disease and premature death, causing up to 4.2 million deaths each year. (UNFCCC, 2022)

## Loss of Biodiversity

Biodiversity loss threatens human health and ecosystem services. Currently, around 1 million plant and animal species are facing the threat of extinction. (IPBES, 2019)

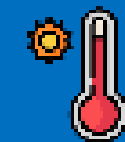
The emergence of the Triple Planetary Crisis could threaten the sustainability of development and the livelihoods of millions of people around the world, which has implications for the achievement of Indonesia's development targets.



NATIONAL



## Negative Impacts of Climate Change in Indonesia



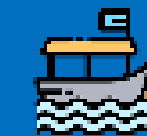
Temperature increase 0.45-0.75°C



Change in rainfall  $\pm$  75 mm/month



Sea level rise is 0.8-1.2 cm/year



5.8 million km<sup>2</sup> of Indonesian waters are dangerous for fishing vessels <10GT

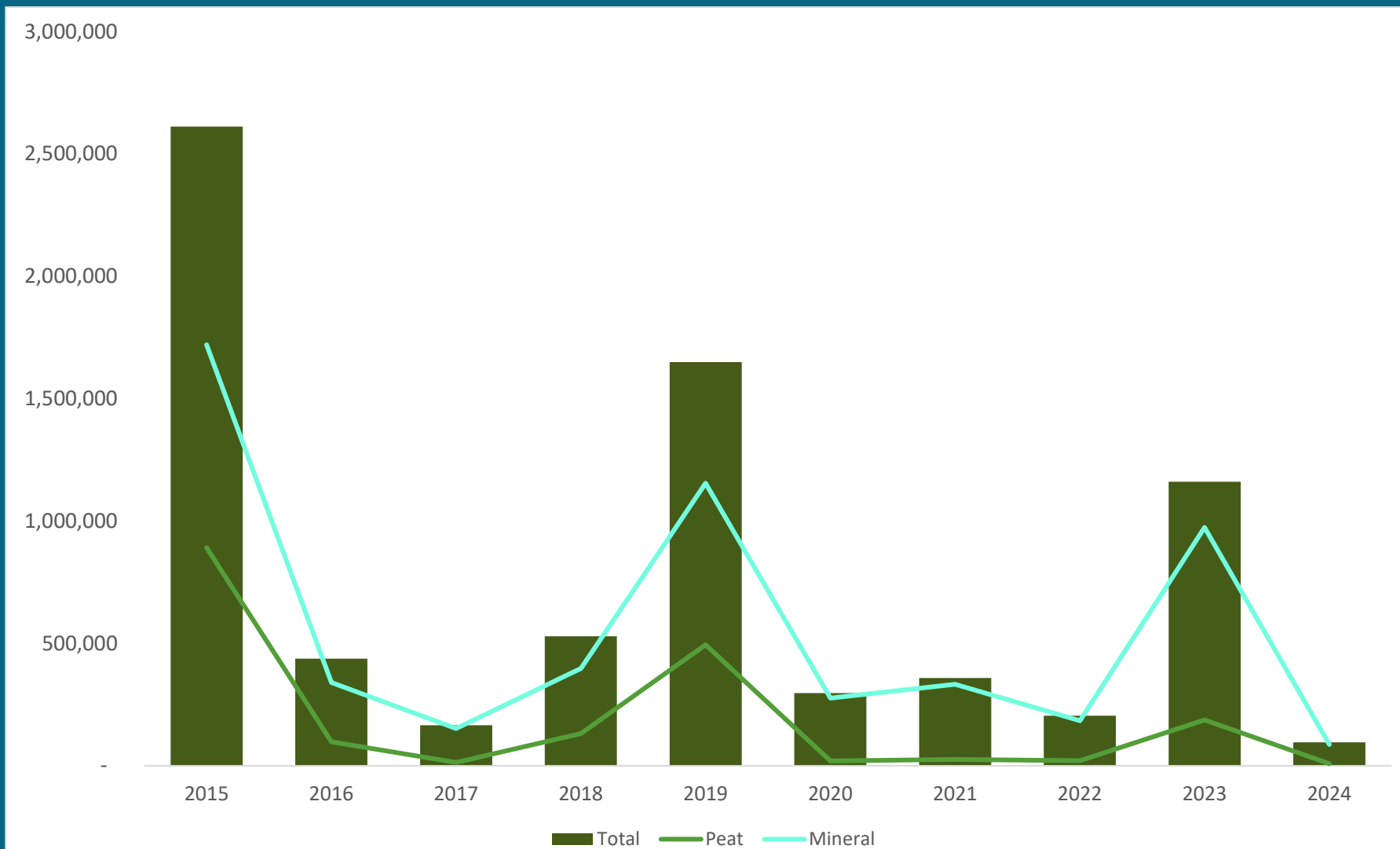


18,000 km of coastline falls into the vulnerable category

# INTRODUCTION

At 2023, forest and land fires has decreased significantly by 29.55% from the 2019 and 37% from 2015. However, the potential for forest and land fires still needs to be watched out for with the trend of increasing temperatures.

### Tren of Burn Area 2015 - 2024



The largest forest and land fires in Indonesia occurred in 2015 and caused various economic, social and environmental impacts

The Causes of Forest and Land Fire in Indonesia is mostly by human induce and give negative Impacts to soci economic and environment



**Economic losses**



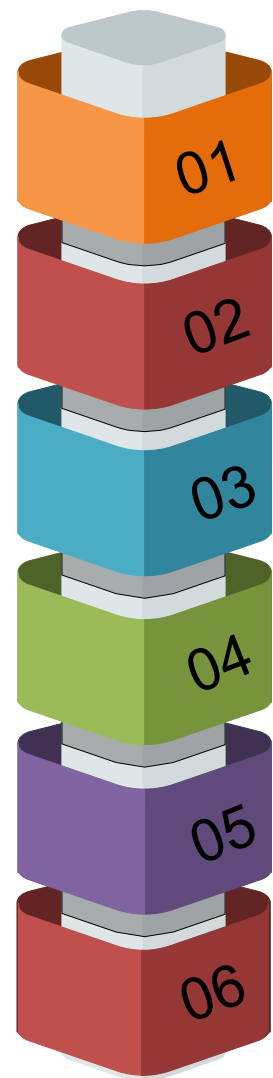
**Emission contribution**



**Environmental losses**

# MANAGEMENT OF FOREST AND LAND FIRES IN INDONESIA

## PREVENTION



01 Integrated Fire Patrol

02 Increasing awareness and campaign (publications, social media, etc.)

03 Capacity building

04 Strengthening regulation and intensive coordination between stakeholders

05 *Weather Modification peat rewetting and etc*

06 *Increasing community participation through Fire Care Community (MPA)*

## SUPPRESSION



Early Warning and Early Detection



Groundcheck Hotspot



Ground Suppression

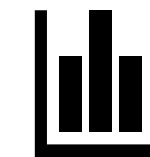


Air operation (water bombing, surveillance, etc)

## POST FIRE



Monitoring burned area



Estimation of burned area and its emissions



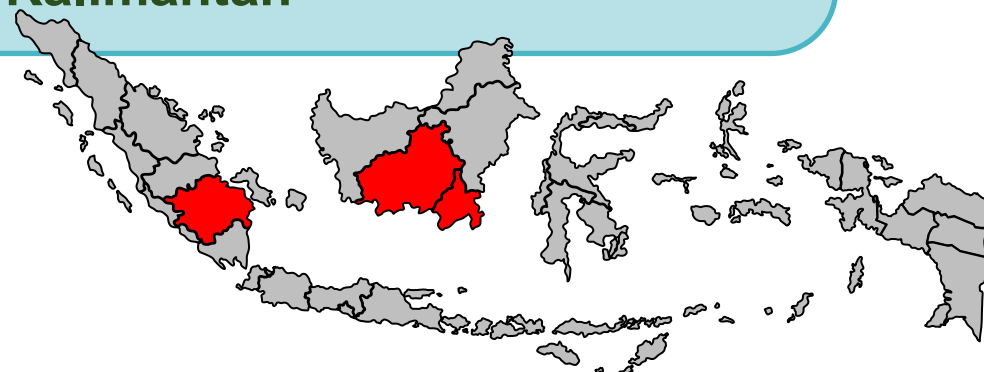
Law enforcement

# FRAME WORK OF ITTO PROJECT



## PROFILE PROJECT ITTO

- Title: **Capacity Building on Forest and Land Fire Management in Indonesia**
- Project Number: **PP-A/56-340-1**
- Reg Number (ID MoFinance): **2M2K8P9A**
- Total Budget: **USD 1,131,663.16**
- Project Period: **18 months (extension) (Jan 2021 – June 2022)**
- Locations: **South Sumatera, Central Kalimantan, South Kalimantan**



## INTEGRATED FOREST AND LAND FIRE MANAGEMENT

Prevention, Supresions, and Post Suppressions



### OBJECTIVE

To improve prevention of forest and land fire through strengthening management and technical capacity of stakeholders at three targeted provinces and national level

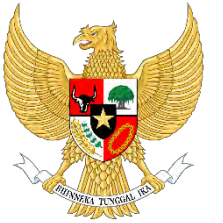
### OUTPUT

1. Best agricultural practices applied by Fire Care Community (MPA)/Local communities → **development of land preparation without burning (PLTB) and demonstration plots to promote zero burning**
2. Management capacity to address forest and land fires problems strengthened → **development of technology/system of SMART integrated patrol reporting application (SIPP Karhutla)**
3. Cooperation among local institution, private sector and communities for forest and land fire prevention strengthened



## FOLU NET SINK 2030 & NDC Target

National GHG Reduction Target from the forestry and land sector is 17% of total GHG emissions in Indonesia FOLU NET SINK 2030

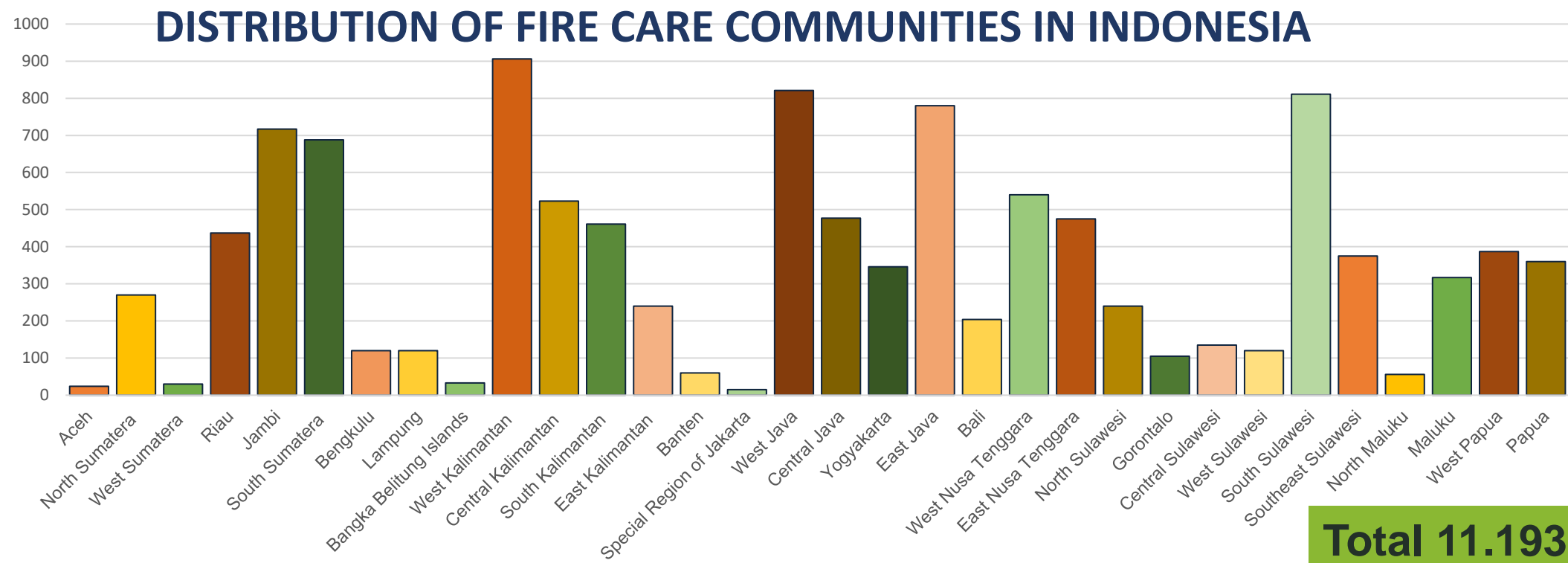


## NATIONAL TARGET ASTACITA 2024 – 2029

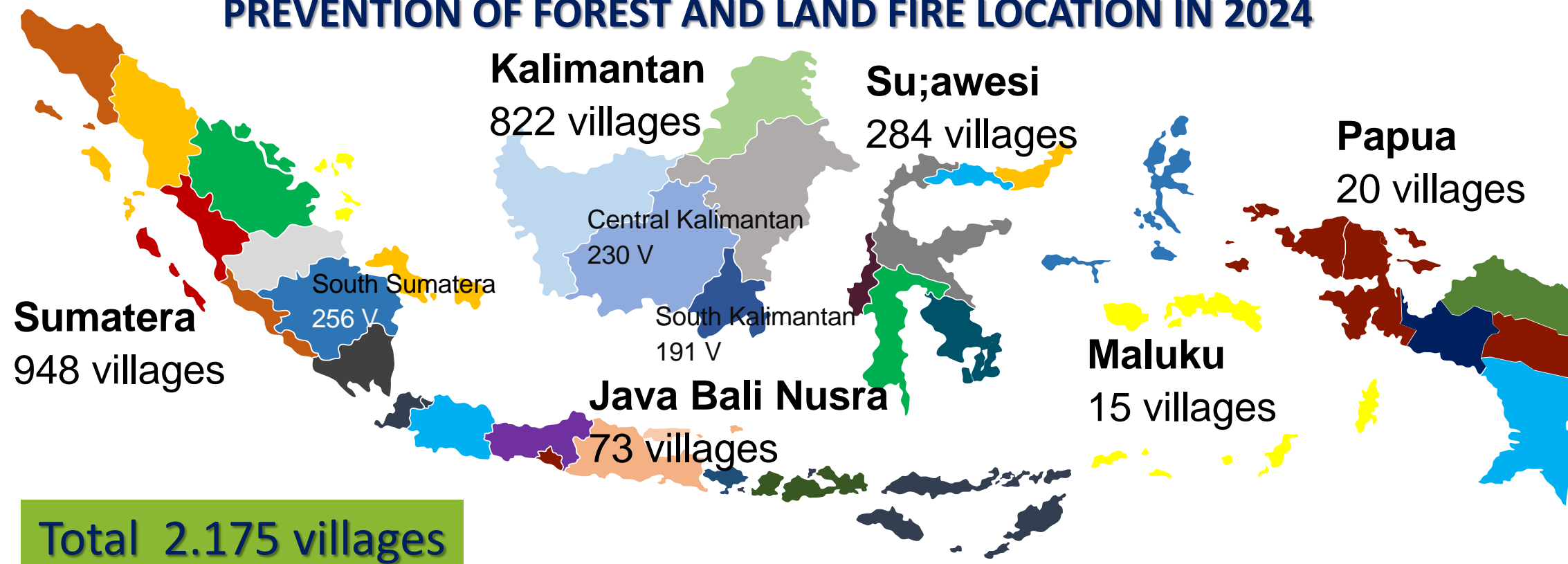
FOLU NET SINK 2023 has been included as part of Asta Cita (8 National Development Agendas), namely the Green Economic Transition, which is the vision and mission of the new president until 2029, including to achieve the target of resilience to disasters and climate change.

# LAND PREPARATION WITHOUT BURNING BY FIRE CARE COMMUNITY in FIRE PRONE SITES

Sustainable agriculture practices: agroforestry, agro-silvofishery, wood vinegar, composting



### PREVENTION OF FOREST AND LAND FIRE LOCATION IN 2024



# LAND PREPARATION WITHOUT BURNING BY FIRE CARE COMMUNITY in PROJECT SITE - SOUTH SUMATERA (1)

ITTO Forest Fire Project in Indonesia supported on the implementation of land preparation without burning/PLTB with some alternative solution such as agroforestry practices by planting chilly pepper with forest trees (jelutong) could increase additional income for local community



1. Land preparation



2. Land bed and mulching preparation



3. Chilly pepper planting rows



4. Harvesting chilly pepper



5. Chilly pepper ready for market



# LAND PREPARATION WITHOUT BURNING BY FIRE CARE COMMUNITY in PROJECT SITE - SOUTH SUMATERA (2)

ITTO Forest Fire Project in Indonesia supported on the implementation of land preparation without burning/PLTB with some alternative solution such as biomass utilization practices, honey bee production, sustainable agriculture/fishery practices that could increase the local community welfare



Sustainable Agriculture Practices in Demonstration Plot for Land Preparation Without Burning (PLTB) in **JEJAWI VILLAGE**, South Sumatera

# LAND PREPARATION WITHOUT BURNING BY FIRE CARE COMMUNITY in PROJECT SITE - SOUTH SUMATERA (3)

Sustainable Agriculture Practices in Demonstration Plot for Land Preparation Without Burning (PLTB) in **GELUMBANG VILLAGE**, South Sumatera



# LAND PREPARATION WITHOUT BURNING BY FIRE CARE COMMUNITY in PROJECT SITE - SOUTH SUMATERA (4)



SILVO FISHERY



NTFP PROCESSING



LAND PREPARATION



PLANTING - AGROFORESTRY



COMPOSTING

Sustainable Agriculture Practices in Demonstration Plot for Land Preparation Without Burning (PLTB) in **LUBUK LANCANG VILLAGE**, South Sumatera

# LESSON LEARNED Implementation of Land Preparation Without Burning in West Kotawaringin - Central Kalimantan

to increase additional income while protecting forests and reducing emissions



Source: BAPPENAS, 2024

<b>Economic Benefit</b>	<b>Rp 1 Million</b> Per month additional income for the community/family	<b>6 ton/ha/year</b> Increase rice production from 2 tons/ha/year
<b>Environmental Benefit</b>	<b>807.400</b> tons of CO <sub>2</sub> eq/year potential for reducing emissions (above ground)	<b>400 ha</b> reducing forest degradation and providing livelihoods for local communities
<b>Social Benefit</b>	<b>End of agricultural culture by burning land</b>	<b>Increasing community forest capacity regarding buffer block management and monitoring systems</b>

# CHALLENGES OF LAND PREPARATION WITHOUT BURNING

Implementing land preparation without burning in Indonesia requires a massive, continuous and integrated approach with all stakeholders



Indonesia's territory is very large, with different people's mindsets, geographical conditions and economic conditions, so the treatment of each region must also be different.

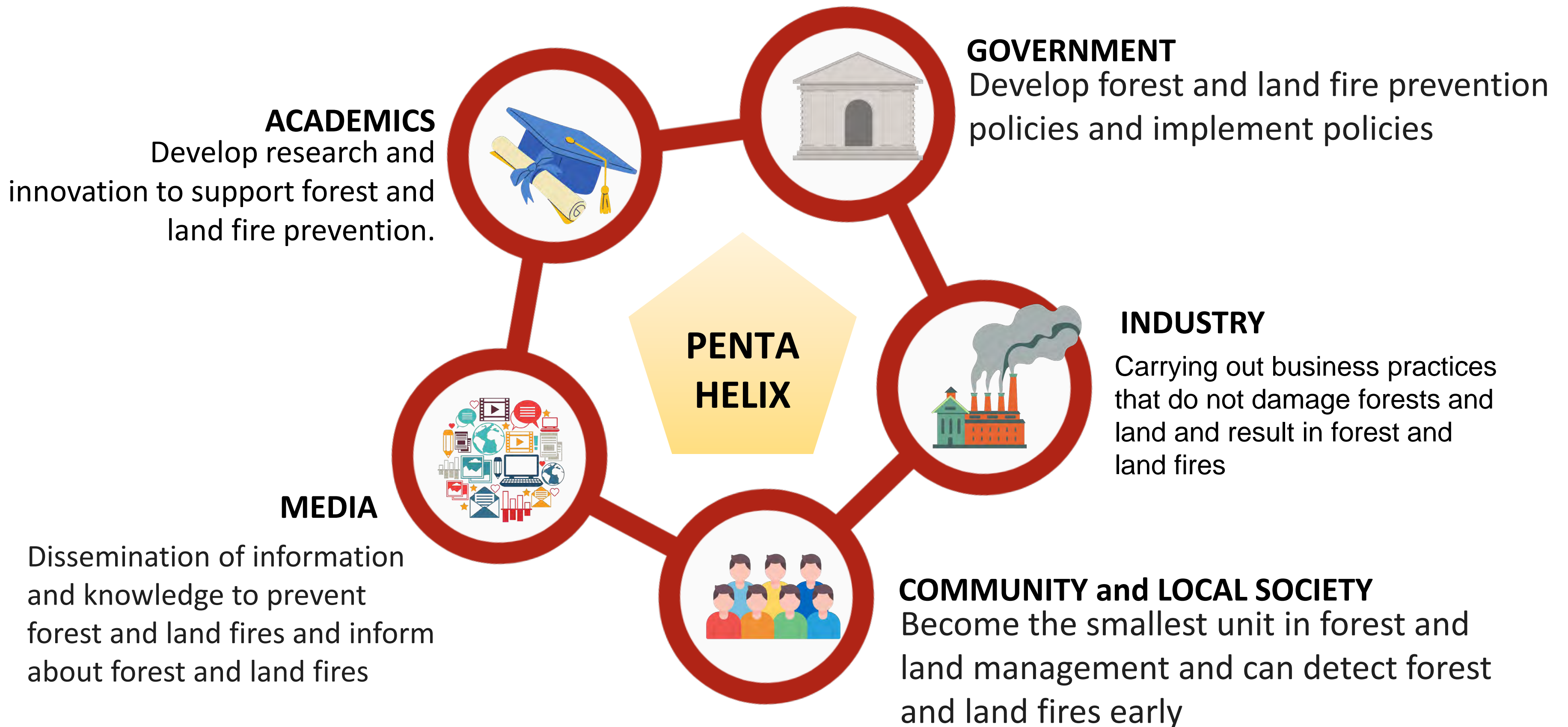


Forests and land are still the basis of the community's economy. Community activities depend on forests and land



Low environmental awareness, the perception is that clearing and preparation land by burning is the quickest and cheapest option

# MULTI-STAKEHOLDER COLLABORATION ON PREVENTING FOREST AND LAND FIRES IN INDONESIA



# WAY FORWARD

- ❑ Strengthen and broaden the Land Preparation Without Burning program for local community (MPA) and integrating PLTB to the national priority of social forestry program in Indonesia
- ❑ The need for similar program in the near future by involving all relevant stakeholder aiming at IFM improvement in promoting SFM
- ❑ Some findings and lesson learned of Land Preparation Without Burning Practices could become part to improve ITTO Guidelines on fire management in tropical forest



- ❑ Indonesia has been developed PLTB more than a decade to promote zero burning.
- ❑ Indonesia has submitted the proposal entitled Development of Zero Burning Practice (Land Preparation without Burning) to the International Climate Competition-Green Eurasia 2024.. And awarded at 1<sup>st</sup> Place in the category of Sustainable Land Use, Forestry and Water Management.
- ❑ Thank you for all partners and collaborators for the cooperation. Thank you ITTO for the continue support for IFM in Indonesia



MANGGALA AGNI

# THANKYOU

## Directorate of Land and Forest Fire Management

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