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Community Perspectives on Haze Surrounding a Protected Area in South Sumatra, Indonesia

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Introduction



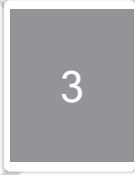
Forest fires, mainly in Indonesia's peatlands have caused severe environmental, economic, and health problems. In 1997/1998, one of these fires burnt through 2,124,000 hectares of peatland and mangrove. (Tacconi, 2003).



Both Indonesia and the international community have paid a very high cost because of haze. For example, peat-fire have claimed many lives.(Butler, 2014).



In the most severe cases, more than 12 million Indonesians were affected by haze, while outpatient attendance increased by 30% in Singapore (Emmanuel, 2000).





A local and longstanding tradition of fire management, and the regular occurrence of haze disasters in the last two to three decades in Indonesia, indicate a cultural shift in the local population towards using fire for cultivation.

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The world's protected areas (PAs) provide multiple ecosystem services including biodiversity conservation and carbon sinks. Despite efforts to protect and manage these areas, forest fires still occur.

Therefore, it is necessary to gain insights how local people (surrounding a protected area) perspective on the effect of haze into their livelihood and understanding how their local knowledge and skills to manage fire as well as to find possible solutions.

AIMS

1

- Effects of Haze

To explore the social, economic, environmental and health effect of haze on the local communities

2

- Local Knowledge

To find local knowledge and practices which have the potential to encourage local communities to adopt more sustainable land management

practices

3

- Role of Stakeholder

To analyze the stakeholders' roles and abilities in reducing and controlling haze's effects

METHODS

Research Location



South Sumatera:

- Rambutan : Suka Pindah and Tanah Lembak Village
- Air Kumbang District: Sebokor Village
- close to Padang Sugihan Wildlife Sanctuary.

During July 2017

Research Methods



Case Study

Qualitative

Quantitative

Local - knowledge and practices

-stakeholders' roles in land and fire management

-FGD
-literature

Community perspectives on haze's effects

-households interview

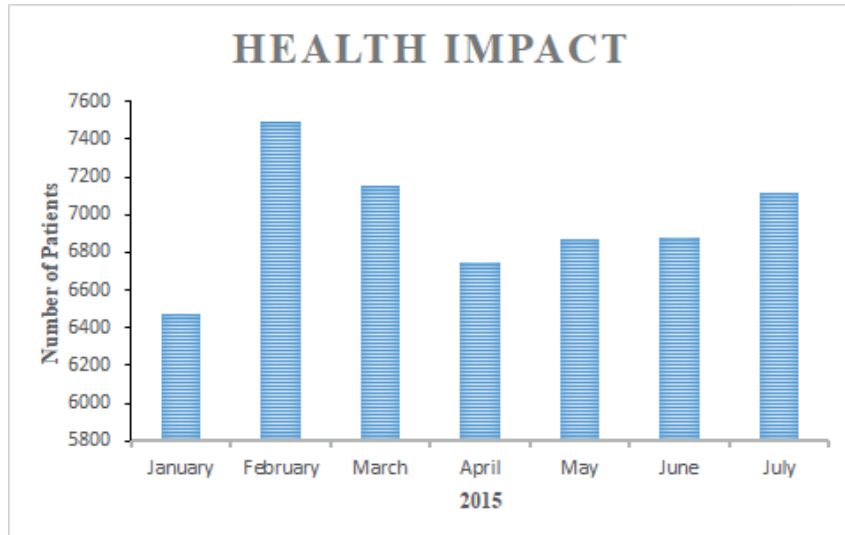


research approaches & tools



Research Method	Case Study	
Research Approach	Quantitative Approach, Survey Method	Qualitative Approach
Focus of Study	Community perspectives on haze's effects	Local knowledge and practices and stakeholders' roles in land and fire management
Population	Two groups :Sebokor & Air Kumbang District	Target groups: key informants
Sampling Technique	Cluster Random Sampling	-
Unit of Analysis	Households/ Family	Stakeholders involved in land and fire management
Data Collection/Source of Evidences	Observation, interviews	Observation, literature study, data documentation, and in-depth interviews
Research instrument	Guided questionnaire s	Guided Interviews
Data Analysis	Quantitative Analysis (cross tabulation)	Reduction, presentation, & conclusion making

RESULTS: Health Conditions



Banyuwasin District Health Office :

- Local communities has identified health problems due to fire and haze.
- Most of impacted group was children in the two study sites.
 - Since everybody was impacted, the awareness to check health was low

Age classes	Sebokor	Suka Pindah and Tanah Lembak
Children	223 (95,71%)	206 (96,26%)
Adult	7 (3%)	7 (3,27%)
Old People	3 (1,29%)	1 (0,47%)

Education



- **Policy** : During high haze impact, schools in these villages are closed for several days (maximum of 1 week) or depends on the duration of the impact (District Education Office Banyuasin, 2017).
- During the disaster, the education activity in Sebokor Village was disturbed. In the Air Kumbang Sub-District (including Sebokor) there are several schools that are closed for one week.



Economic Lost



- Haze disturbs road visibility and access causing disruption to the economic path, and reduced the production of sap which as their main source of livelihood.
- Rubber tapper couldn't work during haze in Sebokor Village.
- The productivity of rubber decreased during the dry season due to the dry conditions and exacerbated by the presence of haze (Sebokor Village).
- The absence of activity in Rubber tapping reduced the income about 300,000 – 500,000 rupiah every month (from 1,400,000 IDR) .
- People have alternative incomes

Economic Loss	Sebokor	Suka Pindah and Tanah Lembak
Yes	174 (74,68%)	158 (73,83%)
No	59 (25,32%)	56 (26,17%)

Environmental Impact



- People consider haze as a **common annual phenomena**
- Those who live in the Ladang Asap are aware of the environmental changes, eg. trees than can be find in swamp areas are now burnt.
- According to the information from the community, elephant population used to exist in the Ladang Asap area in 1982, before forest fires field area. Massive forest fires in the Ladang Asap area in 1990 made it hard to find animal populations, especially Elephants (Forestry and Plantation Service Banyuasin District, 2016).



Local Knowledge and Practices using Fire



- Opening agricultural lands by burning is part of a previous traditional way.
- Fire and land are bounded, despite its positive or negative effect to the environment

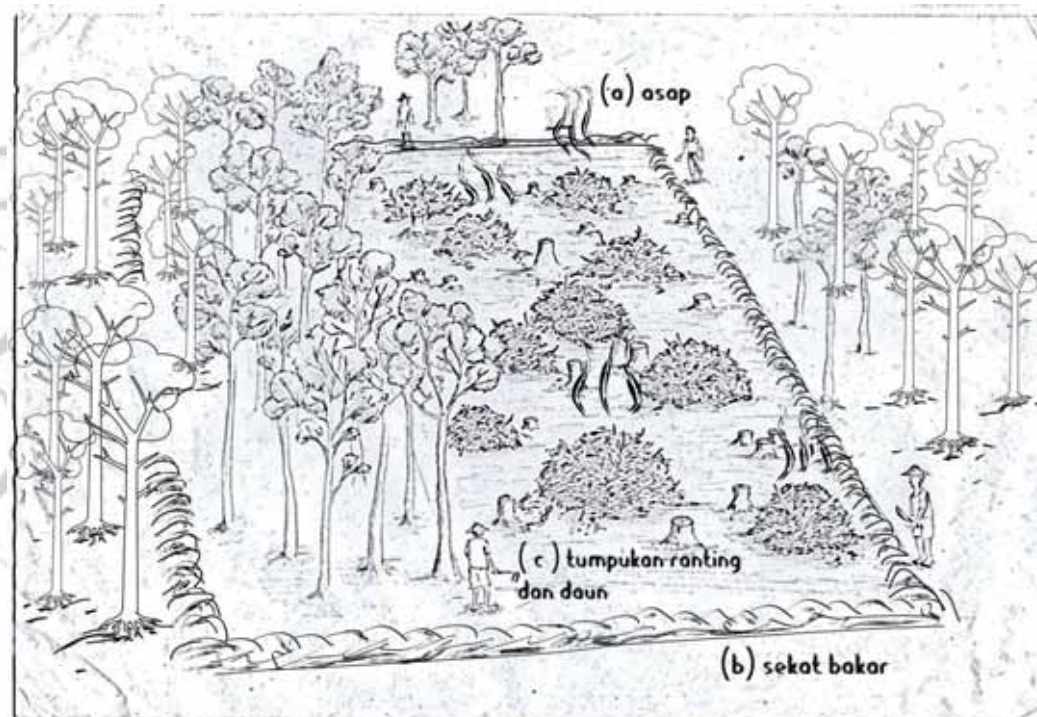
Local Knowledge and Practices on Fire



No.	Local Knowledge	Description
1	Rompokan	<ul style="list-style-type: none">- collecting litter and plants to be burned into several parts (small clumps) and burned gradually.- Fire were managed by landowner and neighbours until completely extinguished- fire will not spread to other surrounding land..
2	Pelarian	<ul style="list-style-type: none">- Land preparation cooperation between landowners and their relatives- to clear the land



Rompokan System

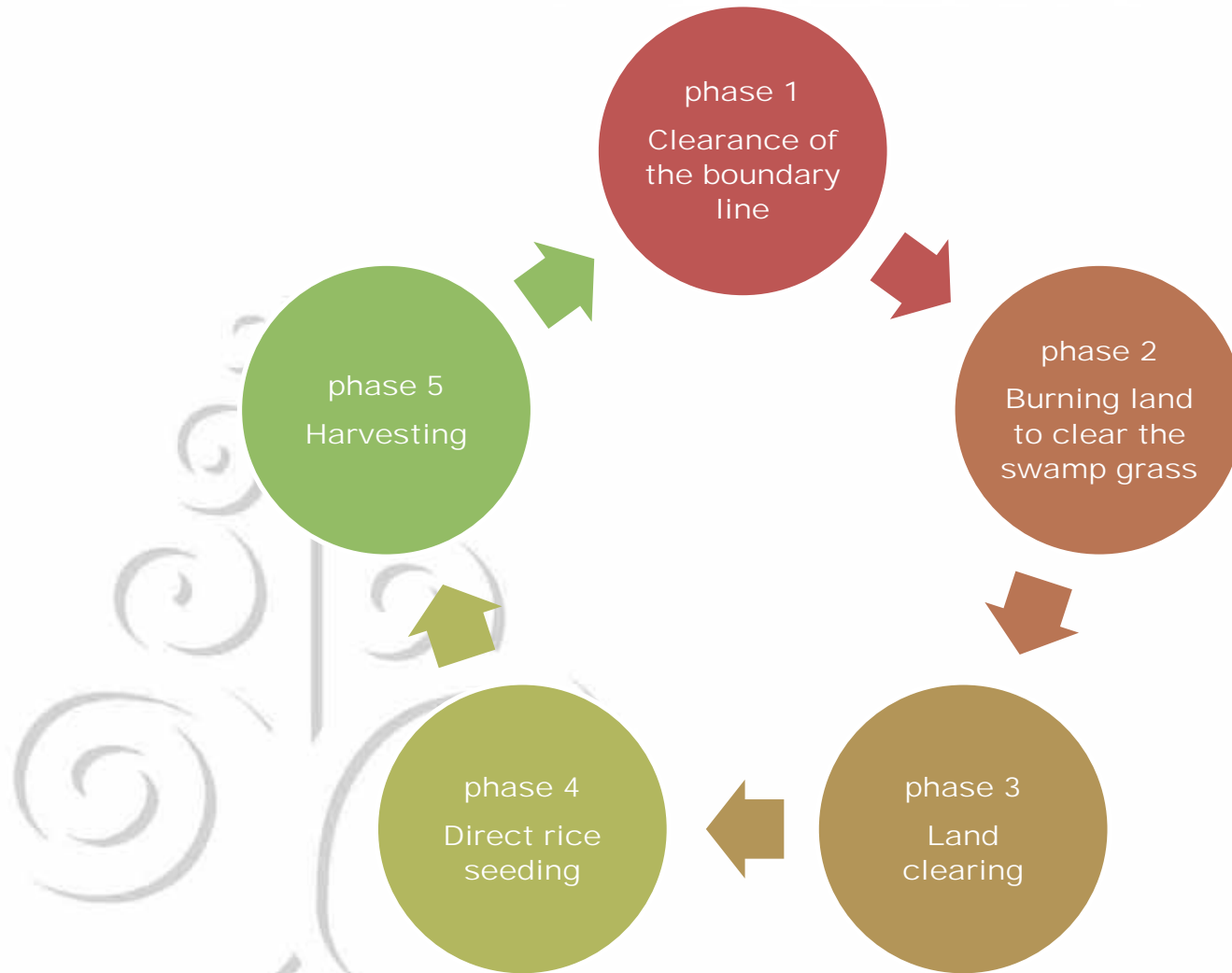


Local Knowledge and Practices on Fire



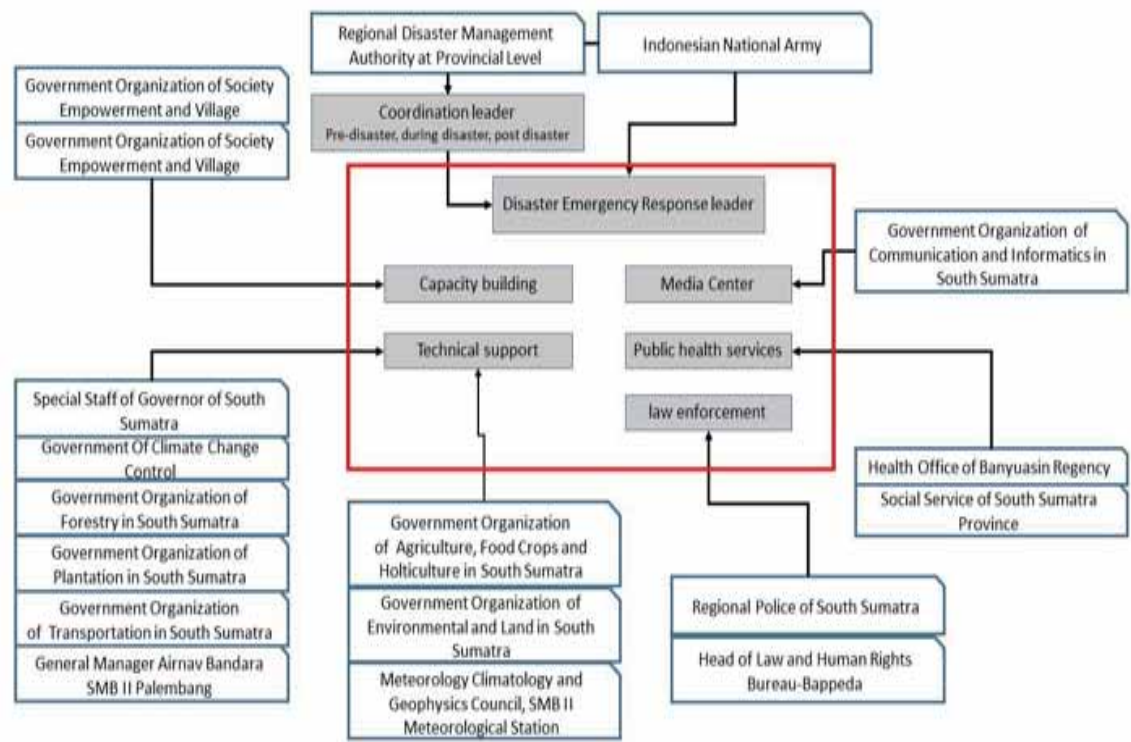
No.	Local Knowledge	Description
3	Backfire technique	<ul style="list-style-type: none">- To runs out of fuel near source of fires.- between canals.- The burning is carefully conducted and directed to the burning field (from the inside out).- Fires are directed to the large flame (does not spread)- Guarding for 2 x 24 hours to ensure no more fires ignition and spreading to other land.
4	Parit Keliling	<ul style="list-style-type: none">- small trenches to prevent fire to spread to their farmland.

Sonor System



- Direct seeding of rice cultivation in peatland
- Limited on Suka Pindah (sites)

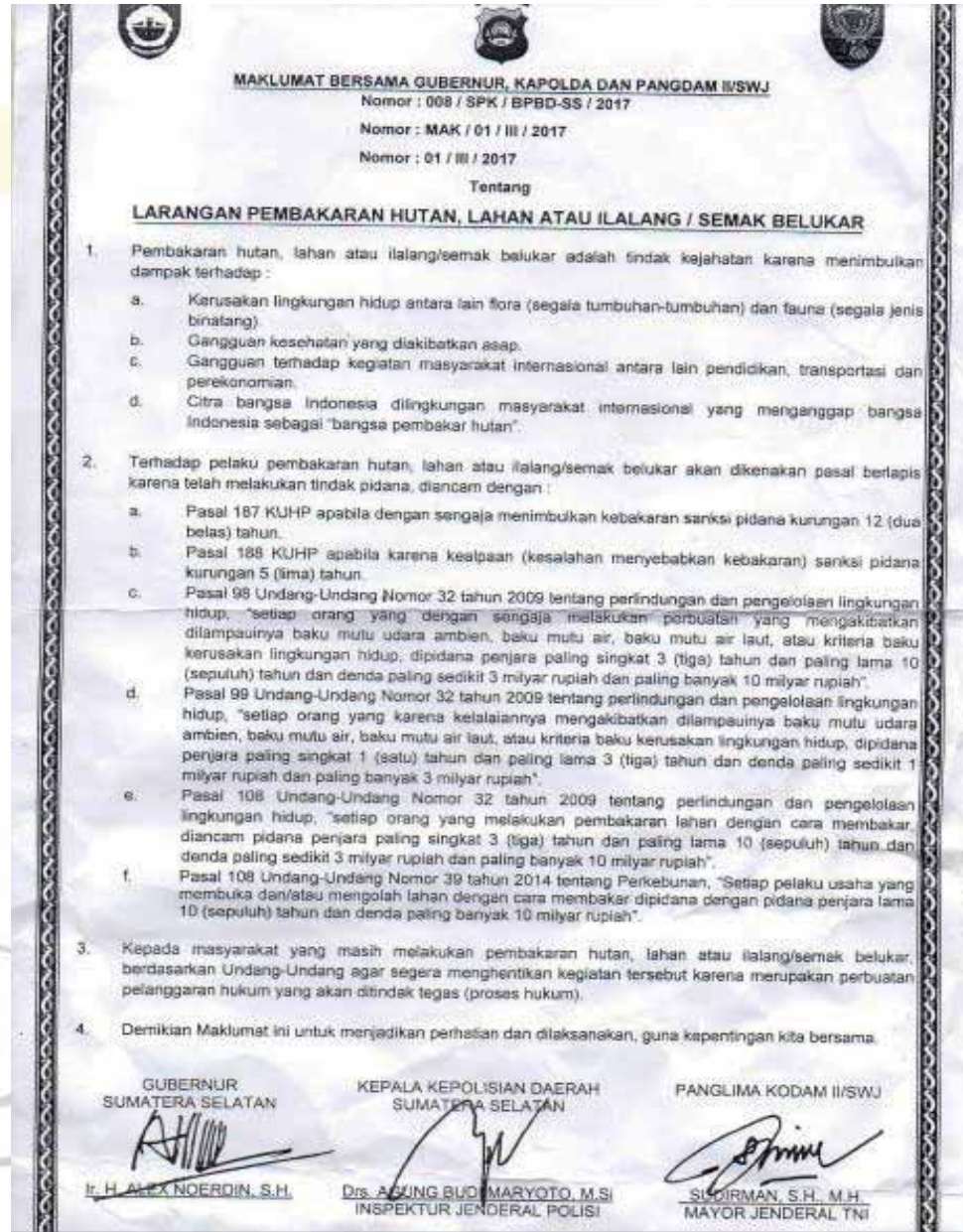
3. The Role of Stakeholder to reduce and Control the Impact of Haze



- Disaster response and relieve were good.
- the Regional Disaster Management Agency (BPBD) received full support from the National Disaster Management Agency (BNPB).
- BPBD that performs **coordination, command** and **implementation** is responded well by the provincial government of South Sumatra at the time of the establishment of emergency condition.
- But preparedness and mitigation should be improved and coordinated.
- Less coordination particularly among stakeholder (non Govt)

Policy

- Non-structural mitigation



Discussion



Impact of Haze on Education, Economic and Environment

- Children are the most vulnerable group when considering the haze's effect, especially regarding health and education
- Children should be involved in the further research to understand the perspectives everyone in the community.
- Haze affects livelihood but local people are adapted to it.



• 2. Local knowledge and Practices on Land Management

- Local perspective on (mitigation and preparedness) and did not consider global aspects both consideration and effect.
- Information about weather forecast, the El Nino years as well as forest fires and their effects should be shared with the community.



• 3. The Role of Stakeholder to reduce and Control the Impact of Haze



- Stakeholders only have a role in handling forest fires during emergencies
- Prevention and mitigation efforts have not been taken seriously
- The synergy between institutions has not met expectations
- A mitigation policy should be developed, with a focus on the affected community's health and education



CONCLUSION



1. Haze disasters have impacts on public health, the economy, and education of people surrounding protected area.
 - a) However, there was a lack of awareness in the local communities.
 - b) Living in haze-prone areas generates a resilient attitude that tends to be passive or accepting of any circumstances, even when haze disaster.

2. Local wisdom on the use of controlled fires in land management in practices such as Pelarian, Rompokan, Api Balas, Parit Keliling and Sonor are an essential source of knowledge which can help to prevent haze disasters if they are applied in correctly manner.

CONCLUSSION



- Stakeholders, supported by existing regulatory instruments have an adequate capacity and capability for response and relieve haze disasters.
- However, the disaster management cycles i.e.: **pre-disaster** (mitigation and preparedness) and post disaster (rehabilitation and reconstruction, including ecosystem restoration) of should be strengthened with an understanding of the communities' local wisdom regarding the haze disaster itself.



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Terima Kasih



Camat Rambutan & Air Kumbang
Kepala Desa: Suka Pindah, Tanah
Lembak, Sebokor Village.
Research team



Recommendation

- Restoration of ecosystem
- Sustainable Peatland management practices



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