

**PROTEKSI ISI LAPORAN KEMAJUAN PENELITIAN**

Dilarang menyalin, menyimpan, memperbanyak sebagian atau seluruh isi laporan ini dalam bentuk apapun kecuali oleh peneliti dan pengelola administrasi penelitian.

**LAPORAN KEMAJUAN PENELITIAN**

**Informasi Data Usulan Penelitian**

**1. IDENTITAS PENELITIAN**

**A. JUDUL PENELITIAN**

COLLABORATIVE EVERYDAY ADAPTATION TO DEAL WITH PEATLAND FIRES IN THE EAST COAST OF SUMATRA, INDONESIA
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**B. SKEMA, BIDANG, TEMA, DAN TOPIK PENELITIAN**

Skema Penelitian	Bidang Fokus Penelitian	Tema Penelitian	Topik Penelitian
Penelitian Terapan	Sosial Humaniora - Seni Budaya - Pendidikan	Pembangunan dan penguatan sosial budaya	Tatakelola dan pemerintahan

**C. KOLABORASI DAN RUMPUN ILMU PENELITIAN**

Jenis Kolaborasi Penelitian	Rumpun Ilmu 1	Rumpun Ilmu 2	Rumpun Ilmu 3
Kolaboratif Luar Negeri	ILMU SOSIAL HUMANIORA	ILMU POLITIK	Ilmu Pemerintahan

**D. WAKTU PELAKSANAAN**

Tahun Usulan	Tahun Pelaksanaan	Lama Penelitian
2021	2022	1

**E. ANCOR RESEARCH**

Anchor Research	Topik Anchor
Eko Priyo Purnomo, Prof., S.IP., M.Si.,M.Res., Ph.D.	Participative governance and the Institutionalization of government policy into local communities in the context of shifting dynamics of policy

**2. IDENTITAS PENELITIAN**

Nama	Peran	Tugas
Rijal Ramdani, S.IP., MPA	Ketua Pengusul	
Susilo Nur Aji Cokro Darsono, S.E., M.R.D.M	Anggota Pengusul	Membantu literature review, mengolah data, dan memberikan masukan terhadap naskah publikasi
Hefi Al-Hifdhi	Mahasiswa Bimbingan	1. Issuing the research permit 2. Data transcription from voice recording into texts on words 3. Data classification and management 4. Working on coding the data through the NVivo 12 Plus

### 3. MITRA KERJASAMA PENELITIAN (JIKA ADA)

Pelaksanaan penelitian dapat melibatkan mitra kerjasama, yaitu mitra kerjasama dalam melaksanakan penelitian, mitra sebagai calon pengguna hasil penelitian, atau mitra investor

Mitra	Nama Mitra	Kepakaran
University of Eastern Finland	Dr Obed Asmoah	Bioeconomy and Bioresources Governance

### 4. KOLABORASI PENELITIAN (JIKA ADA)

Mitra	NIDN/NIK	Instansi
Dr Obed Asamoah	HCOD0014	School of Forest Science, University of Eastern Finland

### 5. LUARAN DAN TARGET CAPAIAN

#### Luaran Wajib

Tahun	Jenis Luaran
1	Publikasi Jurnal Internasional terindeks SCOPUS,
1	Naskah Kebijakan

#### Luaran Tambahan

Tahun	Jenis Luaran

### 6. KLUSTER

Kluster	Sub Kluster	Group Riset	Mata kuliah
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### 7. ANGGARAN

Rencana anggaran biaya penelitian mengacu pada PMK yang berlaku dengan besaran minimum dan maksimum sebagaimana diatur pada buku Panduan Penelitian dan Pengabdian kepada Masyarakat.

Total Keseluruhan RAB Rp. 20,000,000

Tahun 1 Total Rp. 20,000,000

Jenis Pembelanjaan	Komponen	Item	Satuan	Vol.	Harga Satuan	Total
PENGUMPULAN DATA	Biaya Telepon	Pulsa	OK(Kali)	5	Rp. 100,000	Rp. 500,000
PENGUMPULAN DATA	Tiket Transportasi	Ticket Jogja - Riau (2 Orang PP)	OK(Kali)	4	Rp. 1,300,000	Rp. 5,200,000
PENGUMPULAN DATA	Hotel/penginapan	Penginapan di Desa per Hari	OH	30	Rp. 100,000	Rp. 3,000,000
PENGUMPULAN DATA	Transportasi/BBM	Bensin Motor per Hari	OK(Kali)	30	Rp. 35,000	Rp. 1,050,000
PENGUMPULAN DATA	Biaya Konsumsi Harian	Makan per Hari (3 x 2 Orang) = 15.000 x 3 x 2:	OH	30	Rp. 90,000	Rp. 2,700,000
PENGUMPULAN DATA	Transportasi/BBM	Tiket Travel PKU - Bengkalis (2 orang PP)	OK(Kali)	8	Rp. 150,000	Rp. 1,200,000
ANALISIS DATA	Biaya Konsumsi Rapat	Konsumsi Rapat dengan Asisten Peneliti dan Tim Peneliti (5 orang x 10 Kali)	OH	50	Rp. 20,000	Rp. 1,000,000
PELAPORAN, LUARAN WAJIB, DAN LUARAN TAMBAHAN	Biaya Luaran Iptek lainnya (Purwa rupa, TTG, dll)	Native Proofreading untuk Article	Paket	1	Rp. 2,500,000	Rp. 2,500,000
PELAPORAN, LUARAN WAJIB, DAN LUARAN TAMBAHAN	Article Processing Charge (APC)	Open Access Journal Fee	Artikel	1	Rp. 2,850,000	Rp. 2,850,000

## 8. LEMBAR PENGESAHAN

### HALAMAN PENGESAHAN LAPORAN KEMAJUAN PENELITIAN SKEMA:

Judul : COLLABORATIVE EVERYDAY ADAPTATION TO DEAL WITH PEATLAND FIRES IN THE EAST COAST OF SUMATRA, INDONESIA

Peneliti/Pelaksana : Rijal Ramdani, S.IP., MPA

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Jabatan Fungsional : Asisten Ahli

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#### Anggota

Nama : Susilo Nur Aji Cokro Darsono, S.E., M.R.D.M

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Program Studi/Fakultas : Ekonomi

Nama : Hefi Al-Hifdhi  
NIM : 20190520243  
Prodi : S1 Ilmu Pemerintahan

Mitra : University of Eastern Finland  
Nama Mitra : Dr Obed Asmoah  
Kepakaran : Bioeconomy and Bioresources Governance

Nama : Dr Obed Asamoah  
NIK : HCOD0014  
Institusi : School of Forest Science, University of Eastern Finland

Biaya : Rp. 20,000,000

Yogyakarta, 23 Mei 2022

Mengetahui,  
Kepala LRI,



  
Prof. Dr. Dyah Mutiarin, MS.i.  
NIK : 19700502 199603

## 9. RINGKASAN

Due to the uncertain situation of climate change, multi-level actors such as civil society, private sector, national and sub-national government institutions as well as individuals are expected to have an adaptive capacity to face their vulnerability. This study analyses how the local community has used the collaborative approach as a strategical pathway in their everyday activities to adapt to the peatland fires and their vulnerability in situations where the fires impact their everyday lives. The research has been undertaken on the east coast of Sumatra, Indonesia, where the challenge of annual peatland fires has increased in the last 15 years. The research finding shows that the case study community conducted collaborative everyday adaptation through structural arrangements, co-creation of knowledge, and resource sharing in three stages, 1) anticipatory, 2) preparedness, and 3) response, through constructing canal blocks, conducting fire patrols and fighting fires, which enabled the community to reduce potential damage due to climate vulnerability. However, we argue that in order to support everyday adaptation, collaborative governance is needed to support building capability to act and not just concentrate capacities and activities to act.

## 10. KEYWORDS

Climate change; collaborative governance; everyday adaptation; peatland fires; Indonesia

## 11. HASIL PELAKSANAAN PENELITIAN

We have done with the data collection and drafted the paper submitted into Journal of Ecology and Society (Q1). The result of our research presents the collaborative adaptation of climate change in anticipatory, preparedness, and response stages as follows:

### **Anticipatory adaptation: constructing canal blocks and sharing knowledge**

Up until February 2020, 32 canal blocks had been constructed in the village. The development process of the canal blocks took place four times, namely between 2013 and 2014, 2015 and 2016, 2017 and 2018, and 2018 – 2020.

The first two blocks were constructed in 2013 (MPG, 2020). The story of their construction goes back to 2009 when a biologist from a local university lived in the village and worked voluntarily with three villagers on peatland reforestation. To get funding from the local forest department, the three villagers on their own initiative informally established the PCC and worked on planting and caring for the natural peatland trees in their five hectares field (Interview 10). However, between 2011 and 2012, the mega-fire burned their trees, and only one of the villagers continued by replanting. An international university from Japan and the Centre for International Forestry Research (CIFOR), with the assistance of the biologist, conducted research in the 2.5-hectare natural peatland forest that remained and belong to that single villager (Interview 3a).

After having a long informal discussion relating to vulnerability of the peatland and with the help of a shared budget from the international university, the villager decided to construct two canal blocks around his forest field. The villager who built the canal blocks for the first time said:

“Since my peatland field was dry and burnt several times, I asked them [the international university researchers] for help to build canal block. But they just helped me with gunny sacks to fill with sand and a budget for the logs. I bought other materials and worked using these together with my son and another villager. Then we could see the water table in my field was increasing. ... We [the villager and researchers] discussed at my home many times about the [canal] block model.”

Between 2015 and 2016, the PCC constructed eight other canal blocks under bilateral intervention funded by Norway’s bilateral funding undertaken under the Reducing Emissions from Deforestation and Forest Degradation (REDD+) programme (MPG, 2020). In this stage, there were also nine new people who joined the PCC (MPG, 2020). With the help of the REDD+ facilitators, the PCC members were involved in benchmarking activities to learn from the other community groups in the province (Interview 16). The REDD+ project hired several experts to help the local community in project planning to decide the distribution of the canal blocks and design its model. During the interview, the REDD+ coordinator said they chose the village due to its vulnerability to fires (Interview 16). The REDD+ provided all materials for the canal blocks as well as incentives for PCC members working in the construction (Interview 3c). The village office also opened road access for the REDD+ facilitators to transport the materials to the forest and welcomed all parties to use their multipurpose building for meetings and coordination (Interview 1a).

A year after the REDD+ project, WWF Indonesia, in collaboration with three local ENGOs and funding from WWF Singapore, came to the village and worked with the FCC. The interview data had shown that all actors in the village welcomed new actors coming to collaborate because they felt that constructing canal blocks was beyond their capability. For example, the village office had no budget allocation while the villagers had no financial ability to construct canal blocks (Interview 1a). They also expected to learn about the model of the blocks from outsider actors (Interview 1c). For example, one of the informants in the village said:

“I can say that most of them [outsider actors] are knowledgeable. If I am not mistaken, some of them are professors, aren’t they? You may know about this. They are educated [at higher education] while we are not [did not go to university]. Most people here do not understand those things [canal blocks and water characteristics]. So, we are happy if they come because we want to learn from them, such as how canal blocks should be constructed taking into consideration the condition of water flow like in our village.”

With the help of hydrological experts hired by WWF, FCC worked collaboratively with the ENGOs to create nine canal blocks (MPG, 2020). WWF provided the construction materials and daily

incentives for the FCC members who carried out the construction (Interview 13b). At the same time, the village office strongly supported the activities, for example, to tackle the issue of some trans-local oil palm owners who had objected to canal block construction (Interview 1a).

By December 2017, the international university from Japan, in collaboration with the local university and with the support of the Indonesian Peatland Restoration Agency (IRPA), launched the Tropical Peatland Society Project (TPSP) under the sponsorship of the Japan International Corporation Agency (JICA) to conduct a rewetting programme in the village (Mizuno, 2018). In March 2018, three facilitators of TPSP started living in the village and facilitating meetings relating to the canal block programme between villagers, village officers, and researchers from the universities (Interview 15c). Under their initiative, the PCC members also elected a new leader of the organization (Interview 3b). Since the immediate problem of drought around the village was due to water retention by the timber company, TPSP researchers also worked on conflict resolution by facilitating meetings between the villagers and timber company (Interview 15a). After a lobby process by TPSP researchers, the timber company finally agreed to share the water and work together with the villagers to construct the canal blocks and normalize non-functional canals (Interview 11a). With the financial support of TPSP and the help of the excavators from the timber company, 17 members of FCC and 20 members (including eight new members) of PCC worked together to rewet the degraded peatland in the village area (Interview 3b).

At this stage, we also discovered how the collaborative actors had conducted knowledge sharing and social learning. For example, TPSP researchers trained two young members of the PCC to calculate the water volume in the canals and measure the water table in the peatland areas (Interview 15c). Although the canal blocks infrastructure model had been designed by the hydrologist from the local university, through dialogue the TPSP always paid attention to the knowledge of the PCC and FCC members since both PCC and FCC's members had long experience of working with the REDD+ and WWF project (Interview 15d). At the same time, the timber company engineers helped the TPSP researchers to plan how the canal blocks should be distributed around the village based on the Geographical Information System (GIS) basic layer which enabled the contours and topography of the area to be followed (Interview 11b). The engineers also shared the 15-year rainfall record data with TPSP researchers to assist water volume measurement in the canals (Interview 11b). In return TPSP researchers shared the village water table data with the timber company as part of an evaluation of whether water sharing had influenced rewetting of degraded peatland in the village (Interview 15b).

### **Preparedness: peatland fire monitoring as collaborative effort**

With regard to preparedness, the 17 FCC members conducted fire patrols around the village area. Every day, between two and three PCC members visited all village areas by motorbike and reported the fire situation at the sites observed via the FCC WhatsApp group (Observation 6). They monitored the availability of water in canals and human-made ponds in order to anticipate whether fires may appear in that area (Observation 7). Since 2016, the village office decree had mandated that large-scale oil palm owners must build ponds of 25 square meters each in their plantation, and up to February 2020 there were 20 man-made ponds scattered around the village areas (Interview 1a). Since most of the fire accidents recorded in the village were due to human carelessness, the FCC members always reminded farmers working in the fields not to use fire (Interview 4b). They also monitored and controlled the activities of hunters and anglers from outside the village on use of fire around the village area. For example, the head of FCC said:

“We [the FCC] always pay attention to strangers coming in from other villages. We communicate with them, and we talk to them not to use fire. They also must answer our questions about the purpose of their activities in the forest around our village. If they said to do fishing or hunting, usually they said so; I take a picture of their face and motorcycle number plate. I also tell them that if something happens here relating to fires, I will report you.”

Since the village area was contiguous with the timber concession, the FCC members also worked with the firefighter squad of the company. It was observed how both units shared information relating to the fire situation while they shared their packed meals for lunch (Observation 8). They had had a close relationship since 2009 because the establishment of FCC in the beginning was under the timber company's initiative for three years (Interview 12). After the mega-fire of 2015, all villagers realized the importance of the patrol, and the village office officially reactivated the FCC (Interview 1a). With the motivation of protecting their village from fire risks, the 17 former firefighters voluntarily re-joined the organization and deliberately chose a new leader (Interview 4b).

According to the FCC leader, they learned to conduct the patrol and identify the emergence of fires during the training under the firefighter squad of the timber company (Interview 4b). For example, it was observed how a member of FCC identified the smell of the smoke from the woody dry peatland after a little rain at night (Observation 6). They also informally learned about the dry and woody peatland characteristics from the TPSP researchers while TPSP facilitators helped them to map fire-prone areas in the village (Interview 15c). When WWF in collaboration with three local ENGOs worked on the canal block programme in the village, the activists introduced the patrol schedule system to the FCC members (Interview 13c). Based on a deliberative discussion, they decided that every FCC member would be on fire patrol duty four times per month for eight hours a day on each occasion. For example, one of the FCC members said:

“We formed the patrol schedule based on a discussion once we worked on canal blocking development with WWF. It was not easy to decide how many times each person should have because some want to do more. Finally, we found the agreement that every person will be on duty once a week, which means four times per month. We do the patrol eight hours a day, morning until afternoon, but we are always on standby if something is happening relating to the fire at night.”

After the reactivation of the FCC was under the village office decree, the village office budgeted about 80 million IDR (5,526 USD) per year to be paid in the three instalments (Interview 1a). The allocation was mainly for the FCC member incentives and patrols operational such as motorcycle maintenance and gasoline. The interview data showed that the district's instruction did not allow the village office to pay the salary for the FCC members, and the involvement of villagers in FCC should be voluntary (Interview 1a). Hence, every member of FCC received only about 250,000 IDR per month (17.26 USD) and an additional reward of about 320,000 IDR (22.08 USD) from the timber company (Interview 4b).

However, the timber company would still pay the incentive even if there was no fire in the village during the three months of the patrol (Interview 11a). Moreover, the two motorcycles used by FCC were a donation by the forest ranger of the Ministry of Environment and Forestry (MoEF), while the uniform, safety shoes, and mobile phone were aid from the donors (Interview 4b). The FCC also constructed a fire control point in the village with the help of funding from TPSP, which members could use when on patrol duty to discuss and plan their work activities for patrolling (Interview 4d). In addition, due to the resistance of the trans-local oil palm owners, the FCC got support from sub-district police and army station by conducting joint fire patrol every four months (Interview 4a and 8). For example, an informant said:

“If they [FCC members] do the fire patrol to the forest and meet with the oil palm owners, they [the oil palm owners] will not allow the FCC members to enter their area. So, if we [army] go with them [FCC] in the joint patrol, they [the oil palm owners] understand that the FCC patrol is legal and under the support of the army and police. So, they [oil palm owners] know who we are. Do you [the interviewer] understand what I mean?”

### **Response: jointly fighting against the fires?**

Although efforts have been made in anticipatory and preparedness, the local community always got ready with the potential occurrence of fires. It was found how multi-lever actors of the government

institutions relating to the fire response worked together to help the FCC members fighting against the fire (Observation 13). Under the top-down authority instruction, the sub-district army and police stations were responsible for leading all squads fighting against the fires (Interview 7). The current administrative regime of the Indonesian government has pointed out that the president would replace commanders of the army and police if peatland fires occurred in their territory (Cabinet\_Secretary, 2018). For these reasons the sub-district police and military commanders took the initiative very seriously and shared the schedule of all squads for three shifts, namely morning, afternoon, and night (Observation 11).

However, most firefighter squads worked during the day, and only the FCC members and timber company fire squad monitored the movement and direction of the fires at night. For example, the district firefighter leader said:

“Before getting dark, yes, all of us leave the fire field because, you know, fighting against fires in the peatland at night is very risky. We must pay attention to the safety of our members. But the firefighter squad of the timber company and FCC members always stay in the location during the night to monitor the fire movement because they are afraid that the fires will spread to the concession area.”

During participatory observation, the firefighters of the timber company taught the FCC members on how to spray water from the hose, block the underground fires, and make a fire free circle around the flame (Observation 13). The learning process was carried out in the informal setting when they rested for coffee while firefighting (Observation 13). Since FCC members were ordinary villagers, the REDD+ project also took the initiative to send the FCC members for training. Under REDD+ funding, the FCC members were involved in a week of training at the Sumatra Forest training centre under the supervision of MoEF. During the training, they learned leadership, line of march, and characteristics of peatland fires. REDD+ facilitators of the province also conducted a simulation in the village on fighting peatland fire and facilitated writing a fire management module. The REDD+ project leader said:

“I think that we may be the first donor who brought the FCC members of the village to joint fire management training in the Sumatra Forest training centre under the MoEF. This centre is for training for forest fire voluntary organizations of all provinces on Sumatra Island. We also helped them on strengthening their organization by writing a module. Lastly, together with them [FCC members], we simulated how to fight against the peatland fires, which are completely different from the crown fires in the mineral forests.”

The response of the peatland fires required resource sharing among the actors. Since the fire equipment of the timber company and the district firefighter station had much better quality, all actors in the fire fields usually used their water pumps and spray hoses (Interview 4a). The timber company also sent two excavators for digging ditch circles to break the flame chain (Observation 13). During the interview, the timber company representative said they were responsible for taking care of five kilometres outside its concession to be free from the fires (Interview 11a). With the legitimization of military support from the sub-district army stations, the firefighters of all squads could take any action, such as blocking the road access to the forest and block the water flow in the ditches to extinguish the fires. In addition, all fire squads received a reward in fighting against the fires (Interview 1a, 9, and 12) even though all the efforts they made in the field were voluntary for FCC members. For example, one of the FCC members said:

“Previously [2016], when WWF worked here [on canal blocking development], we got money from them if we were working to extinguish the fires. But now we did not get any money, no allocation from village office for this. We always stay in the field during the night with the timber company fire squad because we are afraid that the fires will spread the village settlement areas.”

12. STATUS LUARAN



## **12. Status Luaran**

**Under review in Ecology and Society (Q1)**

## **13. PERAN MITRA**

1. Working on drafting the paper and
2. Analyzing the data.
3. Reviewing the final draft before the submission to journal.

## **14. KENDALA PELAKSANAAN PENELITIAN**

1. Took time in the data transcription from interview records into words.
2. Tim consuming in coding the transcribed data.

## **15. RENCANA TAHAPAN SELANJUTNYA**

Working with peer-review process in the journal.