



# Collective of Nature-Based Innovations for Disaster Resilience

Success Stories from the Villages & District



GLOBAL PLATFORM FOR  
DISASTER RISK REDUCTION



INDONESIA  
23-28 MAY 2022

# Collective of Nature-Based Innovations for Disaster Resilience

## Background: The Village & The Disaster

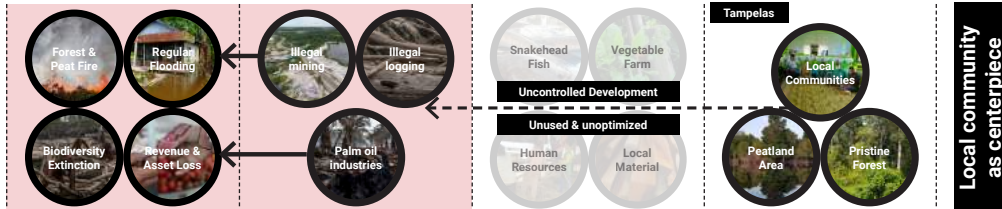
Starting from the disaster on peatland as our main issue, we found out that Indonesia has suffered from the great fire disaster in Sumatra & Kalimantan.

The massive wildfires caused one of the worst cases of haze pollution on record in the past two decades, not only impacted the locals but also our neighbouring country. It also threatens the peatlands which act as carbon storage, the world's greatest immune system

Berawal dari bencana yang rutin terjadi di aea gambut, Indonesia telah banyak mengalami kebakaran hutan & lahan gambut, terutama di Sumatra & Kalimantan.

Kebakaran besar yang terjadi mengakibatkan kabut asap yang tidak hanya mempengaruhi warga lokal selama lebih dari dua dekade, namun juga mempengaruhi negara tetangga. Hal ini mengancam keberadaan lahan gambut yang berfungsi sebagai penyimpan karbon, sistem imun terbaik yang dimiliki Bumi.

Start from disaster as main issue



The government has issued stricter regulations to prevent and mitigate forest fires, as well as to protect and conserve the peat.

On the other hand, the local has found it hard to find another livelihood that are environmentally friendly.

Right now, locals are tend to make money from extractive industries to generate revenue for themselves, as there is not many job opportunities in their village.

Extractive industries (such as illegal mining, palm oil industries) & uncontrollable development will cause a huge environmental impact that affect not only the life of local community but also the peatland biodiversity.

In order to protect the natural biodiversity as the village's asset, the extractive activities must be stopped with carefully planned development involving the locals since the earliest phase.

Pemerintah akhirnya mengeluarkan regulasi yang lebih ketat untuk menjaga dan memitigasi kebakaran & kerusakan hutan, sekaligus menjaga lahan gambut.

Di sisi lain, warga lokal mulai terdampak, karena ternyata cukup sulit untuk mencari sumber penghasilan yang tidak merusak lingkungan.

Saat ini, warga cenderung mencari penghasilan dari industri ekstraktif, karena sebenarnya tidak banyak kesempatan / lapangan pekerjaan di desa mereka sendiri.

Kegiatan industri yang bersifat ekstraktif, (tambang ilegal, pembukaan lahan untuk kelapa sawit dengan cara dibakar) ditambah dengan pengembangan yang tidak terkontrol akan mengakibatkan efek lingkungan yang negatif bagi manusia dan keberagaman lingkungan.

Untuk menjaga keberagaman hayati sebagai aset desa, aktivitas industri ekstraktif harus dihentikan dan digantikan dengan perencanaan pengembangan restoratif yang melibatkan warga sejak tahap awal.

LOCAL COMMUNITY

PEATLAND

FOREST

Local community as centerpiece

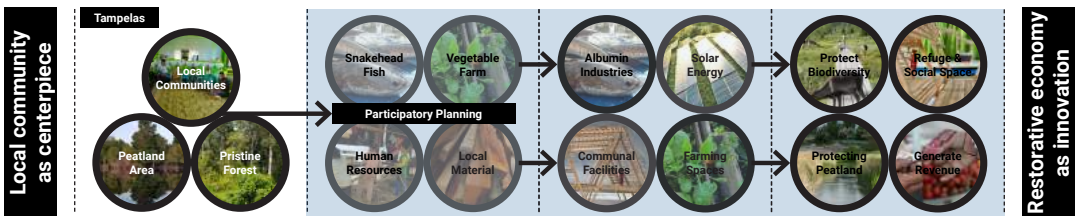
# Collective of Nature-Based Innovations for Disaster Resilience Intervention: Extractive to Restorative

*In contrast with the extractive process, the restorative economy activities will start from local strength, resources & potential. The planning will carefully support local strength (such as creating solar farm to generate energy needed to facilitate albumin industries, farming spaces, and local communal facilities).*

*The restorative economy initiative will generate revenue while preventing natural disaster & giving social and communal infrastructure for the people in many villages.*

Kebalikan dari proses ekstraktif, kegiatan ekonomi restoratif akan bermula dari sumber daya, kekuatan & potensi lokal. Secara perencanaan, ekonomi restoratif akan mendukung kegiatan lokal yang potensial (seperti membuat panel surya, mengembangkan industri lokal (albumin), atau pertanian & fasilitas komunal warga).

Kegiatan ekonomi restoratif akan meningkatkan pendapatan ekonomi warga, mencegah terjadinya bencana / kerusakan alam, sekaligus meningkatkan kualitas fasilitas komunal desa.



*Restorative economy start with the local community, resources & material as its centerpiece.*

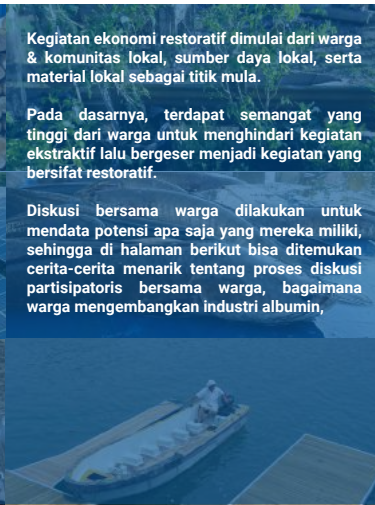
*There are strong willingness from the people to avoid extractive activities, and shift into restorative economies.*

*Several discussion & mediaton was held together with the local communities. After this page, there are several stories about the participatory planning workshop process, and how the locals develop their resources into one profitable business, such as albumin industries.*

Kegiatan ekonomi restoratif dimulai dari warga & komunitas lokal, sumber daya lokal, serta material lokal sebagai titik mula.

Pada dasarnya, terdapat semangat yang tinggi dari warga untuk menghindari kegiatan ekstraktif lalu bergeser menjadi kegiatan yang bersifat restoratif.

Diskusikan bersama warga dilakukan untuk mendafta potensi apa saja yang mereka miliki, sehingga di halaman berikut bisa ditemukan cerita-cerita menarik tentang proses diskusikan partisipatoris bersama warga, bagaimana warga mengembangkan industri albumin,



LOCAL COMMUNITY

PEATLAND

FOREST

# Tampelas, Katingan

## Participatory Planning

### 1st Session: Activity Mapping

*At the first day of the workshop, RMU & PDW divided into 3 team so that we can get more focused discussion with smaller group of locals. We discussed closely with the local to gather information regarding every communal activities in Tampelas.*

*By the end of the first workshop, we manage to record all the issues & challenges faced by the local community in Tampelas: regular flooding, threat from palm oil industries that causes forest fire, lack of healthcare facilities, and also lack of community spaces.*

Pada hari pertama lokakarya, tim KMP dan PDW membagi warga menjadi 3 kelompok, sehingga diskusi bisa menjadi lebih fokus. Sesi pertama dilakukan untuk mengumpulkan informasi aktivitas komunal warga di Tampelas.

Saat lokakarya berakhir, didapat beberapa permasalahan mendasar, antara lain: banjir tahunan, ancaman industri kelapa sawit & kebakaran hutan, kurangnya fasilitas kesehatan, serta tiadanya ruang komunal warga.



1. Activity Mapping



2. Discussion Session



3. Presentation Session

## Participatory Planning

### 2nd Session: Zoning & Layout

*KMP & PDW are working with Watala & Synkrona in translating the local's needs into realization through public participation and workshops to better understand their issues*

*Based on the discussion with the locals, several activities are prioritized for the future development such as:*

1. Multifunctional hall
2. Healthcare facilities
3. Guest homestay
4. Housing for the teachers & health workers
5. Farming area
6. Public market
7. Study area & women empowerment space
8. Public toilet / service area
9. Renovation of religious study room

KMP dan PDW bekerja bersama Watala & Synkrona untuk menerjemahkan hasil diskusi menjadi program yang realistis melalui proses desain yang partisipatif.

Berdasarkan hasil lokakarya, berikut adalah aktivitas yang akan diprioritaskan untuk dikembangkan:

1. Ruang serbaguna
2. Fasilitas kesehatan
3. Penginapan
4. Perumahan tenaga pendidikan & kesehatan
5. Area bercocok tanam
6. Pasar & lapak
7. Area belajar & kegiatan ibu-ibu PKK
8. Area servis dan sanitasi
9. Renovasi mushola & ruang belajar agama



1. Defining Programs



2. Masterplan Sketching



3. Presentation Session

# Tampelas, Katingan

## Participatory Planning

### 3rd Session: 3D Model & Illustration

*In the last session of the workshop, all team created 3d model of three different typology of buildings:*

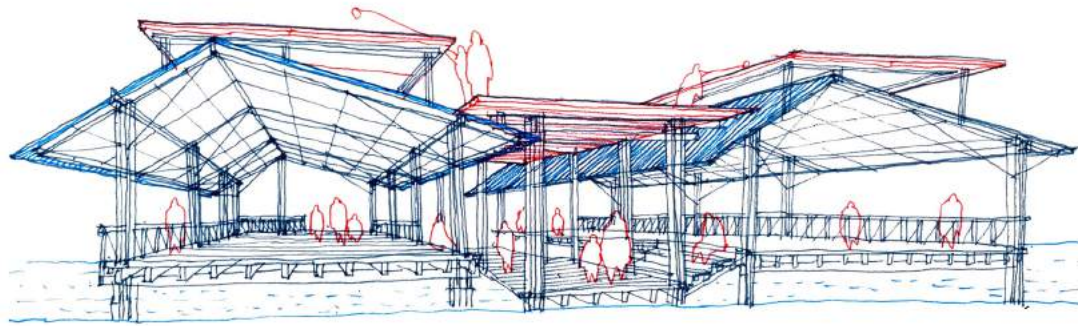
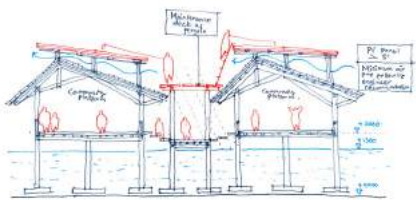
1. Housing module
2. Multifunctional hall
3. Jetty & floating deck

*We believe this pilot project can be an example of an economically feasible, locally empowered, socially playful, ecologically friendly project to similar prone village.*

*Pada sesi terakhir workshop, ketiga tim membuat maket studi untuk tiga tipologi yang berbeda:*

1. Modul rumah & penginapan
2. Ruang serbaguna
3. Pengembangan dermaga

*Kami percaya bahwa proyek ini bisa menjadi program yang memungkinkan secara ekonomi, menguatkan warga, memicu aktivitas sosial, serta ramah lingkungan, untuk direplikasi di desa lain.*



# Siak District The Stories Gotong Royong for Disaster Resilience

*In 2015, Indonesia suffered from a great fire disaster on peatlands that occurred in Sumatra and Kalimantan. It also happened in one of the LTKL district members, Siak, Riau Province. The massive wildfires caused one of the worst cases of haze pollution on record in the past two decades. It was not only impacting the locals but also our neighbouring country, Singapore and Malaysia. Moreover, it also threatened the peatlands which act as carbon storage, the world's greatest immune system.*

*Satellite image data during 2017-2019 shows that forest fires occurred on peatlands which are located in six villages, namely: Bunga Raya, Dayun, Kerinci Kanan, Siak, Sungai Apit, and Sungai Mandau, with a significant rise in 2019.*

Kebakaran hutan dan lahan gambut yang terjadi pada tahun 2015 di Kalimantan dan Sumatera menjadi salah satu yang berkontribusi pada kabut asap terburuk dalam dua dekade terakhir. Bencana tersebut tidak hanya berdampak pada penduduk setempat tetapi juga negara tetangga, Singapura dan Malaysia. Kebakaran juga mengancam kelangsungan lahan gambut yang berperan sebagai penyimpan karbon yakni sistem kekebalan terbesar di dunia. Salah satu yang mengalami bencana kebakaran tersebut adalah kabupaten anggota LTKL yakni Kabupaten Siak di Provinsi Riau.

Data citra satelit sepanjang tahun 2017-2019 memperlihatkan telah terjadi kebakaran hutan di lahan gambut yang ditunjukkan pada titik api di enam desa yaitu: Bunga Raya, Dayun, Kerinci Kanan, Siak, Sungai Apit, dan Sungai Mandau, dengan peningkatan yang cukup signifikan di tahun 2019.

## Government Initiatives

*The government has issued tighter regulations to prevent and mitigate forest fires, as well as to protect and conserve the peat. To support the national government's effort in preventing wildfires in the future, the district government also came up with several initiatives. In 2018, Siak District Government issued a Regent Regulation of Siak (Perbup) No. 22/2018 on Siak Green District. Then, in 2021, Siak District Government launched the Siak Hijau Ecological Fiscal Transfer (EFT) policy which aims to redistribute government tax revenues to protect sites of ecological importance, compensating regional or local governments for environmental conservation efforts.*

Pemerintah mengeluarkan peraturan yang lebih ketat untuk mencegah dan memitigasi kebakaran hutan, serta untuk melindungi dan melestarikan gambut. Untuk mendukung upaya pemerintah pusat dalam mencegah kebakaran hutan, pemerintah Kabupaten Siak mengeluarkan kebijakan bagi perlindungan gambut termasuk Visi Siak Hijau yang tertuang dalam Peraturan Bupati Siak 22/2018 tentang Siak Kabupaten Hijau. Perbup tersebut menjadi payung bagi berbagai kebijakan pembangunan di Kabupaten Siak yang harapannya dapat terjadi secara berkelanjutan termasuk insentif bagi desa yang mendorong capaian visi siak hijau atau Transfer Fiskal Berbasis Ekologis (TAKE).

## Village Initiatives

*While the government has been issuing several regulations to protect the peat, the local community living in Siak is still struggling to find alternative livelihood options that are more peat-friendly. They mainly make a living by planting oil palm or acacia where they have to drain the peat which causes big fire hazard. However, the peat community in Siak has the potency to reduce the forest fire threat. The majority of the peat community have canal blockage in their backyard with high protein snakehead fish originally inhabiting the canal. It is normally treated as a dormant village area, while actually critical to maintain the peat stay wet to prevent fire.*

Di sisi lain, masyarakat yang tinggal di sekitar lahan gambut masih mencari alternatif pendapatan yang ramah gambut. Sebagian besar masyarakat mencari pendapatan dengan menanam kelapa sawit atau akasia, di mana mereka harus mengeringkan gambut yang dapat menyebabkan bahaya kebakaran besar. Namun, masyarakat juga memiliki potensi untuk mengurangi ancaman kebakaran hutan. Mayoritas masyarakat yang tinggal di sekitar lahan gambut memiliki sekat kanal di halaman belakang rumah mereka. Kanal ini menjadi habitat yang ideal untuk ikan gabus berprotein tinggi. Sekat kanal ini biasanya dibiarkan begitu saja sebagai lahan yang tidak aktif, padahal kanal ini berperan penting untuk membuat gambut tetap basah guna mencegah kebakaran.

# Siak District Village Initiatives Gotong Royong for Disaster Resilience

With the snakehead and canal blockage potency, the local stakeholders initiated Alam Siak Lestari (ASL), which aims to conserve peat through the health and nutrition sector with technology inspired by local wisdom. They use the canal for cultivating the high protein snakehead fish as well as rewetting dry peatlands. With the local wisdom of consuming snakehead fish as after surgery or childbirth medicine, they extract the protein of snakehead fish to be albumin. This is a sustainable business strategic model that can be carried out by the local communities with the estimated global market at USD 6.7 million in 2026.

Dayun, Buntan Besar, and Bunsur Village are the shareholders of ASL by Village-owned Enterprises (BUMDes), while the other villages nearby are bidding to be ASL's shareholders as well. With the current share divestment model, the 75% of ASL's shares will be owned by the BUMDes for the next 7 years. Currently, Dayun Village also utilizes the fund they received from the EFT scheme to develop snakehead fish farming. The EFT scheme itself is the realization of the District Government's commitment to appreciate the village's sustainable effort in the forest fire risk reduction.

Dengan potensi ikan gabus dan sekat kanal tersebut, para pemangku kepentingan lokal menginisiasi Alam Siak Lestari (ASL), yang bertujuan untuk melestarikan gambut melalui sektor kesehatan dan gizi dengan teknologi yang terinspirasi oleh kearifan lokal. ASL menggunakan sekat kanal untuk pembudidayaan ikan gabus berprotein tinggi sekaligus membasahi kembali lahan gambut yang kering. Terinspirasi dengan kearifan lokal mengkonsumsi ikan gabus sebagai obat pasca operasi atau melahirkan, ASL mengekstrak protein ikan gabus menjadi albumin. Ini merupakan model bisnis strategis berkelanjutan yang dapat dilakukan oleh masyarakat lokal dengan estimasi pasar global sebesar USD 6,7 juta pada tahun 2026.

Desa Dayun, Buntan Besar, dan Bunsur merupakan pemegang saham ASL melalui Badan Usaha Milik Desa (BUMDes), sedangkan desa-desa lain di sekitarnya juga turut berminat menjadi pemegang saham ASL. Dengan model divestasi saham saat ini, 75% saham ASL akan dimiliki oleh BUMDes dalam 7 tahun ke depan. Saat ini Desa Dayun juga memanfaatkan dana yang didapat dari skema TAKE untuk mengembangkan budidaya ikan gabus. Skema TAKE merupakan wujud komitmen Pemerintah Kabupaten untuk mengapresiasi upaya berkelanjutan desa dalam pengurangan risiko kebakaran hutan.

## Innovation For Resilience

### Innovation For Disaster Resilience

Alam Siak Lestari built a low temperature distillation method to extract protein and albumin from the fish. With this fish farming, the community keeps the peat wet and healthy. ASL also treats the waste in a circular manner, having it as natural fertilizers for the surrounding villages. ASL strives to make the process as simple and as affordable as possible to ensure that the local communities will be able to adopt it in the near future. They also promote the method and technology in the surrounding villages, making it a movement of Science, Technology, Engineering, and Mathematics (STEM) education in Siak.

In five years, ASL aims to expand to at least three more local innovation centers, integrating at least ten more fire prone villages around the area and protecting at least 16 thousand hectares worth of peat area.

### Inovasi untuk Ketangguhan Bencana

Alam Siak Lestari merancang metode destilasi uap dengan suhu rendah untuk mengekstrak protein dan albumin dari ikan gabus. Dengan metode tersebut, komunitas gambut di Siak dapat menjaga gambut tetap basah dan sehat. ASL mengolah sampah dengan siklus sirkular untuk memanfaatkannya sebagai pupuk alami bagi desa-desa sekitar. ASL juga berusaha untuk membuat prosesnya sederhana dan seterjangkau mungkin untuk memastikan bahwa masyarakat lokal dapat menerapkannya dalam waktu dekat ini. Kegiatan mempromosikan metode dan teknologi destilasi uap suhu rendah tersebut kepada masyarakat sekitar juga dilakukan oleh perusahaan sebagai bentuk gerakan pendidikan sains, teknologi, teknik, dan matematika (STEM) di Siak

Dalam 5 tahun, ASL bertujuan mengembangkan setidaknya 3 model pusat inovasi, mengintegrasikan 10 desa-desa di sekitar kawasan rawan kebakaran dan melindungi setidaknya 16 ribu hektar lahan gambut.



# Sintang District The Handling of Flood In Times of Covid-19 Pandemic

At the end of 2021, West Kalimantan Province experienced a major flood disaster. Several regencies that were affected and suffered heavy losses include LTKL member districts, namely: Sintang Regency, Sanggau Regency, and Kapuas Hulu Regency. On 12-19 November 2021, LTKL provided assistance for flood prevention in the three districts. The forms of assistance provided included 1,500 food packages for the three districts; milk for children, blankets, and also two rubber boats.

Among these regencies, the flood that hit Sintang was the worst. Floods that occurred for more than three weeks caused Sintang Regency to be completely paralyzed and more than 25,000 people evacuated. Various efforts have been made to carry out disaster mitigation, including through the issuance of policies.

Here are the policies/regulations issued by the Sintang Regency Government to deal with flooding:

1. Restrictions on land clearing for palm oil and revision of location permits that overlap with forest and peat (2020);
2. Perbup 31/2020 concerning Procedures for Community Land Clearing (Prevention of shifting cultivation);
3. Aspects of disaster in the RPJMD Sintang 2016-2021; and
4. Disaster mitigation as one of the policy bases for spatial planning and utilization of Sintang Regency.

The flood disaster that hit Sintang Regency occurred in the midst of the Covid-19 pandemic situation. Not only has it caused an impact on people's daily activities, the flood has also hampered the Sintang Regency government's efforts in handling the Covid-19 pandemic. The emergency situation during the flood makes it more difficult for district governments to distribute the Covid-19 vaccine to the community. Thus, every emergency situation that occurs in Sintang Regency needs to be addressed immediately with a quick response and mutual assistance from various parties, both by the Sintang Regency government and also the participation of the Sintang community.

One important effort in handling the floods in Sintang Regency, is that every Regency apparatus have to be actively collaborating with various elements of society such as civil society organizations who are members of the Community Coalition for Sintang Flood Management, starting from rapid assessments to distributing aid. From the results of a quick study, four main distribution points were found, namely: Mensiku Village in Binjai Hulu District, Nangalebang Village in Lampermai District, Tanjung Baung Village in Ketungau Hilir District, Nanga Ketungau Village in Ketungau Hilir District. The villages are located very close to the downstream of the river with severe flooding conditions at that time. From the distribution of (flood) aid in Sintang Regency, there are good practices that have been carried out in the form of mutual cooperation and coordination from both the district government and community coalitions.

Pada akhir tahun 2021 lalu, Provinsi Kalimantan Barat mengalami bencana banjir besar. Beberapa kabupaten yang terdampak dan mengalami kerugian berat di antaranya adalah kabupaten anggota LTKL yakni: Kabupaten Sintang, Kabupaten Sanggau, dan Kabupaten Kapuas Hulu. Pada tanggal 12-19 November 2021, LTKL memberikan bantuan penanggulangan banjir di tiga kabupaten tersebut. Bentuk bantuan yang diberikan diantaranya berupa paket sembako sejumlah 1.500 paket untuk ketiga kabupaten, susu untuk anak-anak, selimut dan juga dua unit perahu karet.

Di antara kabupaten-kabupaten tersebut, banjir yang melanda Kabupaten Sintang merupakan yang terparah. Banjir yang terjadi lebih dari tiga pekan menyebabkan Kabupaten Sintang lumpuh total dan lebih dari 25 ribu orang mengungsi. Berbagai upaya telah disiapkan untuk melakukan mitigasi bencana, di antaranya melalui penerbitan kebijakan.

Beberapa kebijakan/peraturan yang dikeluarkan oleh Pemerintah Kabupaten Sintang untuk mengatasi banjir:

1. Pembatasan pembukaan lahan sawit dan revisi izin lokasi yang tumpang tindih dengan hutan dan gambut (2020);
2. Perbup 31/2020 tentang Tata Cara Pembukaan Lahan Masyarakat (Pencegahan ladang berpindah);
3. Aspek kebencanaan dalam RPJMD Sintang 2016-2021; dan
4. Mitigasi bencana sebagai salah satu basis kebijakan penataan dan pemanfaatan ruang Kabupaten Sintang.

Bencana banjir yang melanda Kabupaten Sintang ini terjadi di tengah situasi pandemi Covid-19. Tidak hanya berdampak pada aktivitas keseharian masyarakat, banjir juga turut menghambat upaya-upaya pemerintah Kabupaten Sintang dalam penanganan pandemi Covid-19. Situasi darurat ketika bencana banjir telah menghambat upaya pemerintah kabupaten untuk mendistribusikan vaksin Covid-19 bagi masyarakat. Dengan demikian, satu per satu situasi darurat yang terjadi di Kabupaten Sintang perlu segera ditanggulangi dengan respon cepat dan gotong royong dari berbagai pihak baik oleh pemerintah Kabupaten Sintang dan juga partisipasi dari masyarakat Sintang.

Dalam menanggulangi banjir di Kabupaten Sintang, Pemkab secara aktif berkolaborasi dengan berbagai elemen masyarakat seperti organisasi masyarakat sipil yang tergabung dalam Koalisi Masyarakat untuk Penanggulangan Banjir Sintang, sejak dari kajian cepat hingga penyaluran bantuan. Dari hasil kajian cepat, didapatkan empat titik lokasi penyaluran utama yaitu: Desa Mensiku di Kecamatan Binjai Hulu, Desa Nangalebang di Kecamatan Lampermai, Desa Tanjung Baung di Kecamatan Ketungau Hilir, Desa Nanga Ketungau di Kecamatan Ketungau Hilir. Desa-desanya sangat berdekatan dengan hilir sungai dengan kondisi banjir yang cukup parah pada saat itu. Dari kegiatan distribusi bantuan banjir di Kabupaten Sintang, terdapat praktik baik yang sudah dilakukan dalam bentuk gotong royong dan koordinasi baik dari pihak pemerintah kabupaten maupun koalisi masyarakat.

# Sintang District The Handling of Flood In Times of Covid-19 Pandemic

In December, the flood situation in Sintang began to gradually improve even though it was still in the midst of a pandemic situation. The Sintang District Government through the Health Service and Community Health Centers at the sub-district level, has begun to move again to proceed with the Covid-19 through vaccination activities. The challenge of vaccination in Sintang Regency is a large geographical area but with limited access, especially in remote areas. And in connection with the vaccination data input process is that in a number of areas there is still limited access to electricity and the internet so that more Human Resources (HR) are needed to assist the process.

In responding to the vaccination challenge, the Regency Government maximizes the distribution of Johnson & Johnson (J&J) vaccine from the Ministry of Health of the Republic of Indonesia. LTKL encourages the collaboration of the Sintang District Government with other parties such as the Vaccine Coalition for Vulnerable Communities and the Indigenous Peoples Alliance of the Archipelago (AMAN) in the success of the vaccination support program in Sintang District. The J&J vaccine, which only requires one dose, is considered to be the effective option in facilitating the process of distributing the vaccine to difficult areas. One of the distribution locations for the J&J vaccine is in Kayan Hulu Village, Tebidah District. The target group for vaccination is the indigenous community.

Through this collaboration, vaccination has become more inclusive for the entire community, thanks to the coordination of the distribution of J&J vaccines, transportation support to reach difficult areas, human resources support in the data input process and incentive for health workers involved. The successful distribution of 3000 dosage of J&J vaccine in early 2022 was continued by a follow-up vaccination program with vaccination targets for indigenous peoples, farmers, the elderly and children.

Covid-19 Vaccination Program in Collaboration with LTKL and Member Districts

Currently, the LTKL pandemic recovery program is still ongoing by facilitating increased vaccination achievement for vulnerable communities consisting of indigenous peoples, farmers, fishermen, disabled groups, and children. Vaccination improvement activities were carried out in several districts including Gorontalo, Sintang, Kapuas Hulu, and Sanggau districts. In vaccination activities in West Kalimantan, LTKL cooperates with the Alliance of Indigenous Peoples of the Archipelago (AMAN), the Health Service, Public Health Centers and the local village government. LTKL has helped distribute 6213 doses of Covid-19 vaccine to communities in Member Districts.

District	Dosage
Bone Bolango	70
Gorontalo	230
Kapuas Hulu	2150
Sanggau	600
Sintang	4813
Total	7863

Subsequent to Gotong Royong and the adequate policies, Sintang District is connected to a broader range of network and is able to ideate solutions to overcome floods and the Covid-19 Pandemic.

Pada bulan Desember situasi banjir di Kabupaten Sintang mulai berangsur membaik meskipun masih di tengah situasi pandemi. Pemerintah Kabupaten Sintang melalui Dinas Kesehatan dan Puskesmas di tingkat Kecamatan mulai bergerak kembali melakukan penanggulangan Covid-19 melalui kegiatan vaksinasi. Tantangan vaksinasi di Kabupaten Sintang adalah wilayah geografis yang luas namun dengan akses yang masih terbatas terutama pada wilayah di pedalaman. Kemudian kaitannya dengan proses input data vaksinasi adalah di sejumlah wilayah masih terbatas akses listrik dan internet sehingga dibutuhkan lebih banyak Sumber Daya Manusia (SDM) untuk membantu proses tersebut.

Dalam menjawab tantangan vaksinasi tersebut, Pemkab memaksimalkan pendistribusian vaksin Johnson & Johnson (J&J) dari Kementerian Kesehatan Republik Indonesia. LTKL mendorong kolaborasi Pemerintah Kabupaten Sintang dengan pihak-pihak lain seperti Koalisi Vaksin untuk Masyarakat Rentan dan Aliansi Masyarakat Adat Nusantara (AMAN) dalam mensukseskan program dukungan vaksinasi di Kabupaten Sintang. Vaksin J&J yang hanya membutuhkan satu dosis saja dianggap dapat memudahkan proses distribusi vaksin ke wilayah-wilayah sulit. Salah satu lokasi pendistribusian vaksin J&J berada di Desa Kayan Hulu, Kecamatan Tebidah, kelompok yang menjadi sasaran vaksinasi adalah masyarakat adat.

Melalui kolaborasi tersebut, vaksinasi menjadi lebih inklusif bagi seluruh masyarakat berkat adanya koordinasi pendistribusian vaksin J&J, dukungan transportasi untuk menjangkau wilayah yang sulit, dukungan SDM dalam proses input data serta insentif bagi tenaga kesehatan yang terlibat. Suksesnya pendistribusian vaksin J&J sebanyak 3000 dosis pada awal tahun 2022 lalu, diikuti dengan program vaksinasi lanjutan dengan sasaran vaksinasi yaitu masyarakat adat, petani, lansia dan anak-anak.

Program Vaksinasi Covid-19 Kerjasama LTKL dan Kabupaten Anggota

Saat ini masih berlangsung program pemulihan pandemi LTKL dengan memfasilitasi peningkatan ketercapaian vaksinasi bagi masyarakat rentan yang terdiri dari masyarakat adat, petani, nelayan, kelompok disabilitas dan anak-anak. Kegiatan peningkatan vaksinasi dilakukan di beberapa kabupaten diantaranya Kabupaten Gorontalo, Sintang, Kapuas Hulu dan Sanggau. Dalam kegiatan vaksinasi di Kalimantan Barat LTKL bekerja sama dengan Aliansi Masyarakat Adat Nusantara (AMAN), Dinas Kesehatan, Puskesmas serta pemerintah desa setempat. LTKL telah membantu mendistribusikan sebanyak 6213 dosis vaksin Covid-19 untuk masyarakat yang ada di kabupaten anggota.

Berkat simpul gotong royong dan kebijakan yang memadai, Kabupaten Sintang terhubung dengan jejaring lebih luas, serta dapat membangun solusi untuk mengatasi banjir dan pandemi Covid-19.



# Sigi District

## The Direction of Post-Liquefaction Disaster Management

*Sigi District has a very large forest which extends to 382,658 hectares or about 72.21% of the whole area. The district is also part of the Lore Lindu Biosphere Reserve that is a natural conservation zone. However, Sigi District has a high level of susceptibility both geographically and geomorphologically (because it is passed by the Palu-Koro Fault).*

*Sigi District was one of the districts directly affected by the 7.7 SR earthquake followed by tsunami and liquefaction in the Central Sulawesi Province in 2018.*

*The earthquake, which was caused by the activity of the Palu-Koro fault, resulted in the death of many lives, loss of possessions and houses of the residents, along with the damaged infrastructures which had supported them economically. Furthermore, the disaster had also caused the total change of the spatial and regional planning of the district.*

*During the emergency response time, the Government of Sigi District through the region's Development Planning Agency (Bappeda), immediately arranged the reorganization of the district's spatial and regional planning.*

*The government also provided permanent accommodations for the victims of liquefaction and for the people who suffered trauma after the occurrence of the disaster.*

*The event also encouraged Lingkar Temu Kabupaten Lestari (LTKL) to initiate assistance to Sigi District. The distribution of assistance was divided into three activities, including:*

- 1. the implementation of rapid assessment to help present strategic instructions related to the spatial and regional planning in Sigi District;*
- 2. waste bank management training in collaboration with Waste4change; and*
- 3. the arrangement of incentives for Micro, Small, and Medium Enterprises (MSME) actors in Sigi District.*

Kabupaten Sigi mempunyai kawasan hutan yang sangat luas yaitu 382.658 Ha atau 72,21% dari luas wilayahnya. Wilayah Kabupaten Sigi juga bagian dari Cagar Biosfer Lore Lindu yang merupakan kawasan pelestarian alam. Namun secara alamiah, Kabupaten Sigi memiliki tingkat kerentanan yang tinggi baik secara geografis ataupun geomorfologis (karena dilewati sesar Palu-Koro).

Kabupaten Sigi menjadi salah satu kabupaten yang terdampak langsung dari bencana gempa berkekuatan 7,7 SR yang diikuti dengan tsunami dan likuifaksi di Provinsi Sulawesi Tengah pada tahun 2018.

Gempa yang disebabkan oleh aktivitas Sesar Palu-Koro ini mengakibatkan jatuhnya banyak korban jiwa, hilangnya harta benda dan tempat tinggal penduduk serta rusaknya infrastruktur penyokong ekonomi warga. Selain itu bencana ini juga menyebabkan berubahnya tata ruang dan wilayah secara total.

Di masa tanggap darurat, Pemerintah Kabupaten Sigi melalui Badan Perencanaan dan Pembangunan Daerah (Bappeda) Kabupaten Sigi, segera menyusun perencanaan ulang terhadap tata ruang dan wilayah.

Pemerintah Kabupaten Sigi juga menyediakan hunian tetap untuk korban likuifaksi dan masyarakat yang memiliki trauma pasca bencana likuifaksi.

Peristiwa tersebut juga mendorong Lingkar Temu Kabupaten Lestari (LTKL) untuk menginisiasi bantuan bagi Kabupaten Sigi. Distribusi bantuan terbagi menjadi 3 kegiatan yaitu:

1. Pelaksanaan kajian cepat untuk membantu memberikan arahan strategis terkait rencana tata ruang dan wilayah di Kabupaten Sigi;
2. Pelatihan pengelolaan bank sampah berkolaborasi dengan Waste4change; dan
3. Pemberian insentif terhadap penggiat UMKM di Kabupaten Sigi.



# Sigi District

## The Direction of Post-Liquefaction Disaster Management

*Akibat Likuifaksi tahun 2018, banjir bandang yang sudah sering terjadi menjadi lebih rawan karena lereng gunung yang retak di atas, sehingga saat hujan material di atas gunung terbawa ke bawah. Di tahun 2022 sendiri sudah 2 kali terjadi banjir bandang, yaitu di Desa Sintuwu dan Desa Sejahtera, Kecamatan Palolo.*

*Inovasi yang sedang dijalankan untuk mitigasi bencana banjir bandang adalah penanaman bambu bronjong di aliran sungai untuk melindungi dan memperkuat struktur tanah dan mengurangi gerusan di sekitar tebing sungai. Penanaman bambu bronjong ini telah dilakukan di Desa Pulu, Kecamatan Dolo Selatan yang merupakan daerah paling rawan bencana banjir bandang.*

Due to liquefaction in 2018, flash floods, which had occurred frequently, have become more prone to happen. Because of the fracture at the top of the mountain slope, the rain carries materials from the mountain all the way down. In fact, in 2022, there have been two flash floods, which were in Sintuwu Village, Sejahtera Village, and the Sub-District of Palolo.

The ongoing innovation for the flash flood disaster mitigation is the planting of gabion bamboos down the riverside to protect and strengthen the land structure and lessen the erosion around the river cliffs. The planting of these bamboos have been carried out in Desa Pulu Village, South Dolo Sub-District, which is the area that is the most susceptible to flash floods.

### The Direction of the Development Policy of Sigi District

*With the vision of Sigi being competent in agribusiness, the government has committed to maintaining a continuous disaster mitigation-based development. Several strategies among others include:*

*spatial planning according to the District's Spatial Planning (RTRW) by organizing the residents' lands and location permits following the district's RTRW;*  
*the reformation of critical lands by planting of bamboos both in forests through social forestry or outside of the forests by utilizing bamboos for renewable biomass energy, MSMEs, as well as creating architectural landmarks;*  
*and the increase of disaster management implementation by elevating the disaster response preparedness, fostering, and forming community groups to pay more attention to disasters.*

*There are also special cross-sectoral programs of Sigi District for 2021-2026 regarding disaster management which cover:*  
*1.the reinforcement of Sigi Hijau, which is integrated to the residents' economic growth through the development of Waste Bank, 10,000 Trees per Village, and A Million Bamboos Program down the riverside; and*  
*2.the development and support of Pusat Pengendalian Operasi 3.Penangulangan Bencana (Pusdalops PB) both for natural and non-natural disasters*

### Arah Kebijakan Pembangunan Kabupaten Sigi 2021-2026

Dengan visi Kabupaten Sigi yang berdaya saing berbasis agribisnis, Pemerintah Kabupaten Sigi telah berkomitmen untuk melanjutkan pembangunan berkelanjutan berbasis mitigasi bencana. Beberapa strategi di antaranya adalah: Penataan ruang sesuai Rencana Tata Ruang Wilayah (RTRW) Kabupaten dengan menata lahan penduduk serta perizinan lokasi sesuai RTRW Kabupaten;

Reformasi lahan kritis melalui penanaman bambu baik dalam kawasan hutan melalui perhutanan sosial maupun diluar kawasan hutan dengan memanfaatkan bambu untuk energi terbarukan biomassa, untuk UKM, serta untuk mewujudkan landmark arsitektural; dan

Meningkatnya penyelenggaraan penanggulangan bencana dengan meningkatkan kesiapsiagaan tanggap bencana, membina dan membentuk kelompok masyarakat terhadap peduli bencana.

Adapun program khusus lintas sektor Kabupaten Sigi tahun 2021-2026 terkait penanggulangan bencana di antaranya adalah:

- 1.Penguatan Sigi Hijau terintegrasi dengan pengembangan ekonomi kerakyatan melalui pengembangan Bank Sampah, 10.000 pohon per Desa, dan Program Sejuta Bambu di sempadan Sungai; dan
- 2.Pembangunan dan penguatan Pusat Pengendalian Operasi 3.Penangulangan Bencana (Pusdalops PB) baik bencana alam dan non alam.

# Event Agenda

24  
MAY

Time UTC +8	Activities	Description
09.00-10.30	Storytelling (Offline)	<b>INTRODUCTION</b> (Siak District Representative) - Siak District Profile (Natural Sources, Disaster Risk) - Disaster management (Forest fires) - Disaster prevention innovation from an integrated area model based on industrial downstream for health and nutrition (Dayun Village)
10.30-12.00	Storytelling (Offline)	<b>INTRODUCTION</b> (Sigi District Representative) - Sigi Regency Profile (Natural Sources, Disaster Risk) - Disaster management (Earthquake & Liquefaction)
12.00-12.30	Break	
12.30-14.00	Storytelling (Offline)	<b>INTRODUCTION</b> (PDW Architects) Katingan District Profile (Natural Sources, Disaster Risk) Disaster Management (Forest Fire)
14.00-17.00	Immersive: Mini-Laboratorium	- Participants who will come to the booth will be invited immersively to find out the level of albumin contained in snakehead fish - Showcasing of snakehead fish extraction process (Infographic) - Showcasing of PT Alam Siak Lestari products (Protein Ball & Albugo)

25  
MAY

09.00-10.30	Storytelling (Offline)	<b>PLANNING/REGULATION</b> (Siak District Representative) - Issuance of Green Siak - Local Regulation 9/2019 concerning the Implementation of Disaster Management - Green Funding (TAKE Siak)
10.30-12.00	Storytelling (Offline)	<b>PLANNING/REGULATION</b> (Sintang District Representative) - Restrictions on land clearing for oil palm - Regent's Regulation 31/2020 - Disaster Aspects in the Regional Long Term Development Plan - Disaster mitigation as one of the policy bases for spatial planning & utilization of Sintang District  <b>PLANNING/REGULATION</b> (Sigi District Representative) - Planning/Regulation for earthquake/liquefaction impact mitigation (Bamboo Installation) - Tactical steps taken by the Sigi District Government when the earthquake/liquefaction occurred - Showcasing of PT Alam Siak Lestari products (Protein Ball & Albugo)
12.00-12.30	Break	
12.30-14.00	Storytelling (Offline)	<b>PLANNING/REGULATION</b> (PDW Architects) - Existing disaster mitigation policies in Katingan Regency - Katingan-Mentaya Project Planning
14.00-17.00	Immersive: Mini-Laboratorium	- Participants who will come to the booth will be invited immersively to find out the level of albumin contained in snakehead fish - Showcasing of snakehead fish extraction process (Infographic) - Showcasing of PT Alam Siak Lestari products (Protein Ball & Albugo)

# Event Agenda

26  
MAY

Time UTC +8	Activities	Description
09.00-10.30	Storyteling (Offline)	<b>MULTI-STAKEHOLDER COLLABORATION</b> (Alam Siak Lestari) The collaboration that took place in the formation of ASL (Community Enterprises) Collaboration that occurs in formation of Class (Creative Hub)
10.30-12.00	Storyteling (Offline)	<b>MULTI-STAKEHOLDER COLLABORATION</b> (PDW Architects) - Tells about the multi-stakeholder collaboration that took place in Tampelas Village - Collaboration that occurred in the formation of the Katingan-Mentaya Project
12.00-12.30	Break	
12.30-14.00	Storyteling (Offline)	<b>MULTI-STAKEHOLDER COLLABORATION</b> (LTKL) Commodity-based MSME Portfolio Gotong Royong Covid (Indigenous People Vaccination)
14.00-17.00	Immersive: Mini-Labororium	- Participants who will come to the booth will be invited immersively to find out the level of albumin contained in snakehead fish - Showcasing of snakehead fish extraction process (Infographic) - Showcasing of PT Alam Siak Lestari products (Protein Ball & Albugo)
09.00-10.30	Webinar (Online)	<b>IMPACTS ON SOCIETY</b> (Generasi Lestari, Yayasan Sikola Mombine, Ibu Foundation) Local Solutions Community Empowerment Developing nature-based solution
10.30-12.00	Storyteling (Offline)	<b>IMPACTS ON SOCIETY</b> (PDW Architects) Local Solutions Community Empowerment Developing nature-based solutions
12.00-12.30	Break	
12.30-14.00	Storyteling (Offline)	<b>IMPACTS ON SOCIETY</b> (LTKL & ASL) A new environmental and community based economic model HEAL Fisheries (MIT Solve Challenge Awardee)
14.00-17.00	Immersive: Mini-Labororium	- Participants who will come to the booth will be invited immersively to find out the level of albumin contained in snakehead fish - Showcasing of snakehead fish extraction process (Infographic) - Showcasing of PT Alam Siak Lestari products (Protein Ball & Albugo)

27  
MAY



**APKASI**  
ASOSIASI PEMERINTAH KABUPATEN  
SELURUH INDONESIA



**LTKL**  
LINGKAR TEMU  
KABUPATEN LESTARI



**PT Alam Siak Lestari**

**pdw**

**katingan  
mentaya**  
PROJECT

Generasi  
Lestari

**YAYASAN  
SIKOLA NOMBINE**



# Collective of Nature-Based Innovations for Disaster Resilience

Success Stories from the Villages & District