Binua Labai Lawai and Binua Kapuas Jaya on the Brink of a Hydrological Crisis: When Forests, Peatlands, and Rivers Are Destroyed for Investment



Binua Labai Lawai and Binua Kapuas Jaya are not merely forest and peat swamp areas. They constitute a hydrological system supporting the water, food, culture, and lives of the Dayak Tobag Indigenous peoples in Sanggau, Kubu Raya, Kayong Utara, and Ketapang Regencies. When forests are cleared, peatlands drained, and rivers polluted, what collapses is not just trees, but the natural mechanism that prevents floods, droughts, fires, and guards the livelihoods of thousands of people.

Living Space, Not Empty Land

For the Dayak Tobag Indigenous peoples, Binua Labai Lawai and Binua Kapuas Jaya are ancestral lands, food sources, ritual spaces, and collective identities. Their customary territories include, among others, Kampung Baru, Sansat, Teraju, and Bagan Asam in Toba District, Sanggau Regency. Their lives rely on swiddens, rubber gardens, tengkawang (illipe nut), rattan, honey, river fish, and other forest products passed down through generations.



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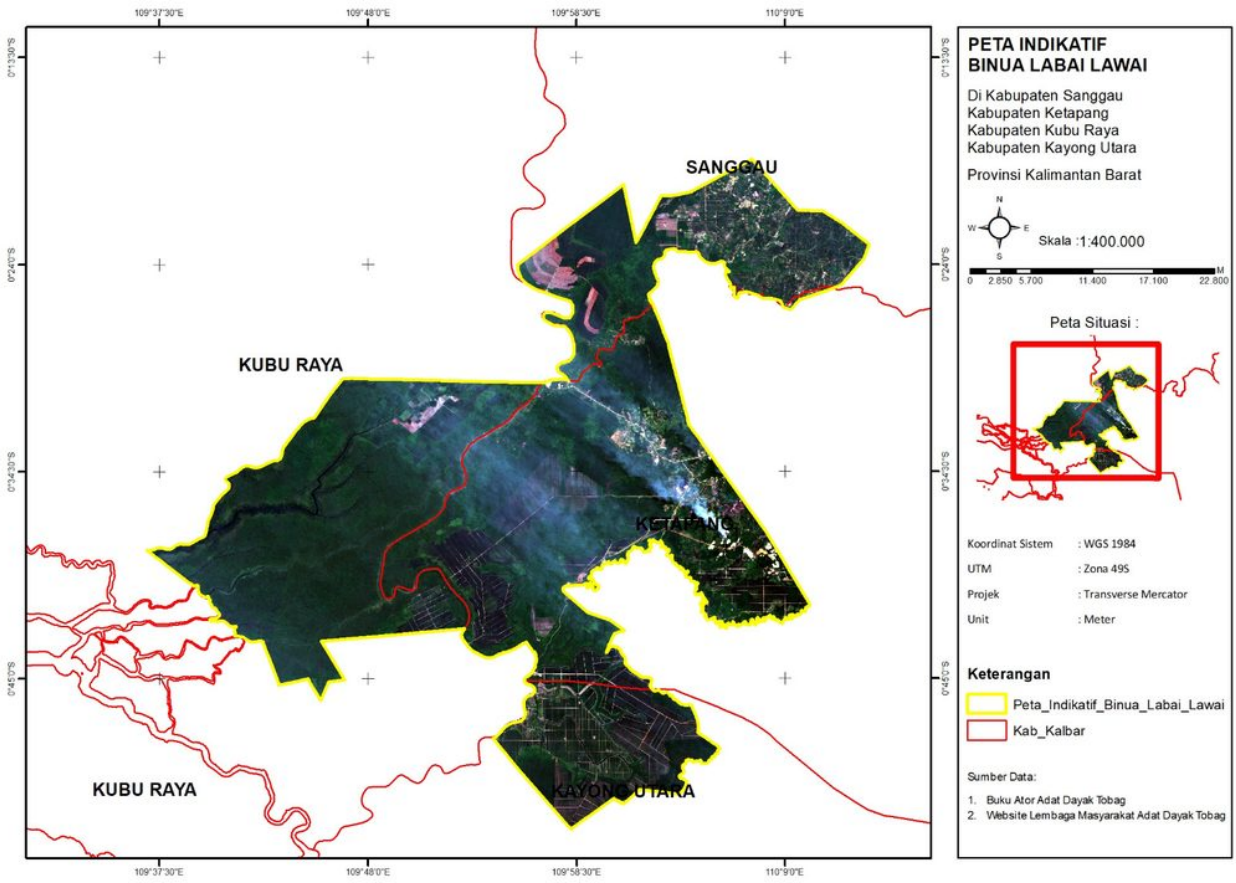
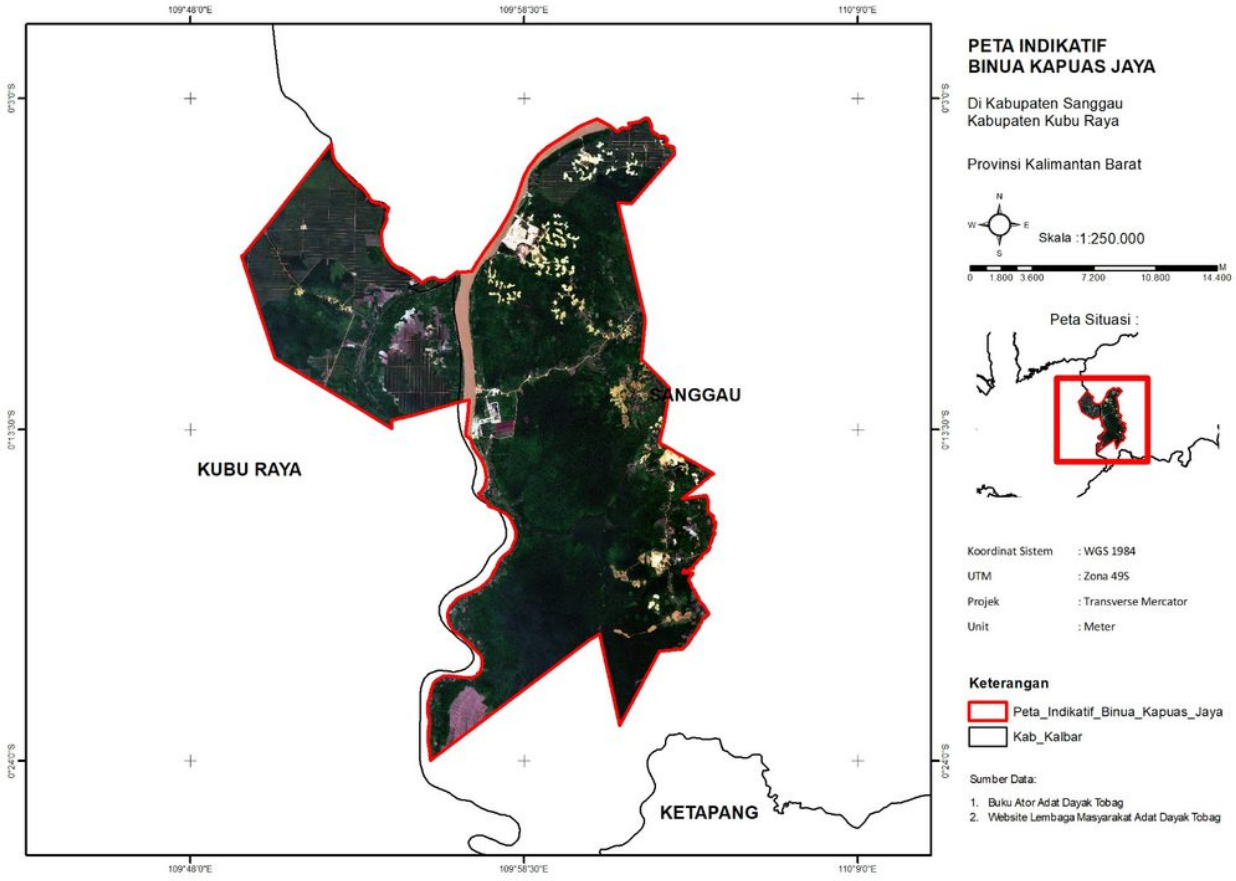
In the view of Indigenous peoples, forests and rivers are not commodities waiting to be exploited. Forests are living spaces; rivers are sources of food and connectors between areas; tembawang (customary agroforests) represent historical memory and the foundation of food security. When the state and corporations refer to forests as “empty land,” they erase the existence of communities who have lived in and protected those territories long before concession permits were issued.

Hydrological Functions That Must Not Be Ignored

Binua Labai Lawai and Binua Kapuas Jaya are part of the peat swamp forest ecosystem and the Kapuas Watershed (DAS Kapuas). A Peatland Hydrological Unit or KHG (Kesatuan Hidrologis Gambut) is a peat ecosystem located between two rivers, between a river and the sea, or in swampy areas. Its primary functions are to store water, regulate flow, maintain moisture, and support surrounding life.

Under healthy conditions, forests and peatlands act like a “natural sponge.” Rainwater is retained by the canopy, roots, litter, soil, and peat layers; part of it infiltrates the ground and is released slowly into rivers during dry seasons. When forests are lost or peatlands are drained, infiltration capacity declines and rainwater turns into rapid surface runoff.


PETA INDIKATIF
BINUA LABAI LAWAI
Di Kabupaten Sanggau
Kabupaten Ketapang
Kabupaten Kubu Raya
Kabupaten Kayong Utara
Provinsi Kalimantan Barat
Skala :1:400.000
0 2.850 5.700 11.400 17.100 22.800 M
Peta Situasi :
SANGGAU
KUBU RAYA
KETAPANG
KUBU RAYA
KAYONG UTARA
Koordinat Sistem : WGS 1984
UTM : Zona 49S
Projek : Transverse Mercator
Unit : Meter
Keterangan
Peta_Indikatif_Binua_Labai_Lawai
Kab_Kalbar
Sumber Data:
1. Buku Ator Adat Dayak Tobag
2. Website Lembaga Masyarakat Adat Dayak Tobag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BINUA KAPUAS JAYA
Di Kabupaten Sanggau
Kabupaten Kubu Raya
Provinsi Kalimantan Barat
Skala :1:250.000
0 1.800 3.600 7.200 10.800 14.400 M
Peta Situasi :
SANGGAU
KUBU RAYA
KETAPANG
Koordinat Sistem : WGS 1984
UTM : Zona 49S
Projek : Transverse Mercator
Unit : Meter
Keterangan
Peta_Indikatif_Binua_Kapuas_Jaya
Kab_Kalbar
Sumber Data:
1. Buku Ator Adat Dayak Tobag
2. Website Lembaga Masyarakat Adat Dayak Tobag

Real Evidence in the Field

The ecosystem degradation of Binua Labai Lawai and Binua Kapuas Jaya is not merely a scientific warning. It has been directly felt by Indigenous peoples. In Kampung Baru Village, residents have experienced wildlife habitat destruction. Changes in forests and waters have deprived animals of their living space, making human-wildlife interactions increasingly dangerous. Residents report crocodile attacks, indicating that river and swamp ecosystems have been disrupted, forcing wildlife to move closer to settlements.

In Bagan Asam Village, the community has experienced flooding engulfing settlements following the clearing of mangrove and land forests. The loss of mangrove and land forests reduces the land's ability to retain water, accelerates runoff, and weakens the landscape's function as a flood buffer. The flooding that now enters settlements is not a “pure natural disaster”; it is the result of land cover change and the loss of ecological forest functions.

In Teraju Village, Mungguk Pasir Hamlet, the community has experienced severe flooding as well as land fires in areas that had never burned before. This condition indicates two simultaneous symptoms: water that is no longer regulated during the rainy season, and peatlands or land losing moisture during the dry season. When land that was once wet becomes easily flammable, it is a sign that the hydrological function of the region has been severely damaged.

Why Major Floods Can Occur

Major floods are not always caused by extraordinary rainfall. Floods can occur when normal rain meets a landscape that has lost its capacity to absorb and retain water. The Ministry of Forestry explains that land losing its infiltration function becomes impermeable and triggers water runoff.

Damage Factor	Flood Mechanism	Impact
Forest lost or degraded	Rainwater is no longer retained by canopy, roots, and soil, leading to increased runoff.	Floods enter settlements such as those experienced by the communities of Bagan Asam, Mangkup Hamlet, and Mungok Pasir Hamlet in Teraju Village.
Peatland drained or dried out	Peat loses water storage capacity; canals accelerate water discharge.	During heavy rain, water rapidly runs off; during dry periods, peat becomes easily flammable.
River Sedimentation	Erosion from open land carries soil into rivers and swamps.	Shallow riverbeds decrease storage capacity, making floods occur more easily.
Canals and flow alterations	Natural water flow is altered into fast artificial channels.	Water is no longer stored evenly in swamps but becomes concentrated into specific rivers.
Extreme rain and changing climate	Rainfall intensity and duration increase during certain periods.	High runoff meets river capacities that have already declined.
Wildlife habitat degradation	Wildlife loses living space and movement corridors.	Human-wildlife conflict increases, including crocodile attacks on residents in Kampung Baru Village.

Within the geographical contours of Binua Labai Lawai and Binua Kapuas Jaya, water does not only flow from upstream to downstream. Water also moves slowly through swamps, tributaries, and water-retaining peat layers. When peat swamps are cleared and drained, water that should be stored evenly becomes concentrated and flows rapidly into rivers, causing floods to become larger and faster.

Why Acute Droughts Are Also Increasing

Acute drought arises when forests and peatlands, which should serve as a "water battery," lose their water storage capacity. Damaged forests reduce infiltration and lower river discharge during dry seasons. Peat swamps drained by canals also lose water reserves that should maintain soil moisture and river flows.

Data from the Ministry of Forestry shows that during the dry season, soil water content in the peat hydrological lands of West Kalimantan can drop below 40 cm, making peat extremely vulnerable to fire. This condition creates a vicious cycle: peat dries out, burns, loses organic layers and water storage capacity, and then becomes even easier to dry out and burn again.

Two Disasters in One Cycle

Ecosystem degradation creates a pattern known as extreme hydraulics: floods during rains, droughts and fires during dry seasons.

Forests and peat damaged -> Infiltration and water storage decline -> Rainy season: rapid runoff + sedimentation -> Major floods downstream in DAS Kapuas -> Dry season: water reserves deplete -> Peat dries out and becomes easily flammable -> Acute drought, smoke, and recurring destruction

A drought study of DAS Kapuas recorded 45 meteorological drought events and 48 hydrological drought events between 1981–2010, with severity and duration tending to increase during El Niño. This means land damage does not create drought from scratch, but exacerbates existing droughts and makes recovery slower.

Real Concession Pressures

Official data from the Ministry of Forestry shows that PT Mayangkara Tanaman Industri II holds an industrial forest plantation (HTI) permit covering 74,870 hectares through Decree No. SK 480/Menhut-II/2009, valid for 60 years. Its permit area encompasses Sanggau, Kubu Raya, and Ketapang—three regencies that are also part of the Binua Labai Lawai and Binua Kapuas Jaya landscape.

Additionally, PT Daya Tani Kalbar is listed as an HTI company in the statistics of the Ministry of Forestry, holding an area of 2,467.74 hectares in PHL publications of the Ministry of Forestry. PT Mayangkara Tanaman Industri I is also listed in PHL publications with an area of 965.50 hectares. These data indicate that industrial forest plantations are not merely discourse; they have become part of the landscape change in the same region where Indigenous peoples

live.

Another pressure comes from the bauxite mining sector. PT Dinamika Sejahtera Mandiri operates in Teraju Village, Toba District, Sanggau Regency, engaging in mining activities, ore washing, hauling roads, and post-mining land reclamation. PT Kurnia Jaya Raya is identified in environmental documents regarding planned bauxite exploration activities in Toba District. Meanwhile, PT Kalimantan Alumina Nusantara (PT KAN) is developing a project to process bauxite into alumina in Sansat Village, Toba District.

The presence of mines and processing plants does not merely clear land. It builds roads, displaces soil, generates waste, requires water, and attracts inflows of population and investment. For Indigenous peoples, these impacts often manifest as lost gardens, reduced forest products, disrupted rivers, and increased pressure on customary territories.



Overlaps: A Real Risk

Concession overlaps in Binua Labai Lawai and Binua Kapuas Jaya potentially occur because this area lies at the intersection of various interests: forests and peatlands for conservation, DAS Kapuas for water management, customary territories for community livelihoods, and land for HTI, oil palm, and mining.

The strongest overlap that can be claimed based on available data is the overlap between the customary territories of Binua Labai Lawai and Binua Kapuas Jaya with the HTI of PT Mayangkara Tanaman Industri II, the bauxite activities of PT Dinamika Sejahtera Mandiri, and the bauxite processing projects of PT KAN & PT. WAI in Toba District. Overlaps with oil palm companies, other mining operations, or other HTI blocks still require official spatial maps and must not be claimed as facts prior to verification.

Overlaps are not merely administrative issues. They create uncertainty for communities: who

has the right to manage the land, who should receive compensation, and who bears the environmental damage. When a single region is claimed simultaneously by HTI, oil palm, mining, and the state, Indigenous peoples are often in the most vulnerable position.

Oil Palm and Fires: A Recurring Threat

Oil palm plantations are also one of the main pressures in this region. Ketapang Regency is the area with the highest number of targets for forest and land fires monitoring in West Kalimantan, covering 23 companies, including PT Sawit Mitra Abadi, PT Fangiono Agro Plantation, PT Sejahtera Sawit Lestari, PT Arrtu Plantation, and PT Agrolestari Mandiri.

A report by WALHI ranks PT Mekar Karya Kahuripan and PT Sinar Karya Mandiri in Ketapang as oil palm companies with the highest number of hotspots from January–August 2026, with 312 and 254 hotspots, respectively. These data show that fires and oil palm plantations cannot be separated from the ecological crisis in West Kalimantan. However, the presence of hotspots or permits in a regency does not automatically mean all companies operate inside Binua Labai Lawai and Binua Kapuas Jaya; analysis must remain based on maps and coordinates.

Impacts if Binua Labai Lawai and Binua Kapuas Jaya Are Destroyed

If Binua Labai Lawai and Binua Kapuas Jaya continue to degrade, what is lost is not just trees. What is lost is water, fish, honey, rattan, tengkawang, tembawang, language, rituals, and the future of Indigenous peoples. Losing forests means losing animal habitats, living corridors, and food sources for local communities.

Peatland damage also means losing nature's capacity to store water and carbon. Drained and burned peatlands release carbon into the atmosphere and worsen global warming. At the same time, communities downstream of DAS Kapuas will bear the impacts of flooding, drought, sedimentation, and declining water quality.

Greed for investment often presents development as progress. In reality, progress that destroys water sources, food, and community living space is not progress; it is regress wrapped in investment figures and promises of employment.

Towards Ecological Justice

Binua Labai Lawai and Binua Kapuas Jaya must be viewed as living spaces, not disputed areas that must be immediately “settled” through concessions. The state, companies, and communities need to uphold the same principle: forests and peatlands must be protected, customary territories must be recognized, and every decision must involve the most affected communities.

Urgent steps include:

- Halting land clearing and the construction of new canals in peat swamp forests.
- Conducting an audit of all overlapping HTI, oil palm, and mining permits against forest areas, KHGs, and customary territories.
- Involving the Dayak Tobag Indigenous peoples in participatory mapping and decision-making.
- Enforcing the law against land burning, unauthorized land clearing, and pollution.
- Restoring damaged canals, peatlands, and forests through schemes involving local communities.



Conclusion

Binua Labai Lawai and Binua Kapuas Jaya are no longer areas that are “potentially damaged.” They already exhibit clear symptoms of degradation: floods in Bagan Asam after mangrove and land forests were cleared, high floods and land fires in Mungguk Pasir Hamlet, and human-wildlife conflict in Kampung Baru due to habitat destruction. This is proof that exploitation does not stop at cut trees; it alters hydrology, displaces wildlife, and forces communities to bear risks they did not create.

Exploitation policies that treat Binua Labai Lawai and Binua Kapuas Jaya as empty land, raw material sources, or investment spaces are morally and ecologically wrong. They sacrifice the hydrological function of DAS Kapuas, the food security of Indigenous peoples, the survival of wildlife, and the future of upcoming generations for short-term interests.

The state must no longer hide behind arguments of “development” or “investment.” Development that generates floods, fires, droughts, and human-wildlife conflict is not development; it is the deprivation of the right to life. If Binua Labai Lawai and Binua Kapuas Jaya continue to be treated as exploitation zones, what will collapse is not only the forests and peatlands, but the very foundation of Indigenous peoples' lives and the sustainability of

DAS Kapuas itself.

Closing

The destruction of Binua Labai Lawai and Binua Kapuas Jaya is not merely a matter of losing trees, peat, or wildlife. Within the geographical contours of West Kalimantan, Binua Labai Lawai and Binua Kapuas Jaya form part of the vast and interconnected hydrological system of DAS Kapuas. If the forests, peat swamps, and rivers in this region continue to be destroyed, the impact will not stop at Toba District, Teraju, Sansat, Kampung Baru, or Bagan Asam. The damage will spread throughout DAS Kapuas and turn into a disaster for West Kalimantan.

DAS Kapuas is the largest river system in Indonesia, originating in the mountains of Kapuas Hulu and emptying into the West Natuna Sea downstream. In a watershed system, water, sediment, nutrients, and pollutants move from upstream to downstream. Therefore, damage in peat swamp forests and lowland forests like Binua Labai Lawai and Binua Kapuas Jaya is not local; it alters the water balance for all areas dependent on the Kapuas River.

Contour-wise, Binua Labai Lawai and Binua Kapuas Jaya are situated in a landscape of lowlands, swamps, peat forests, and river networks that serve as a water buffer. During the rainy season, forests and peatlands retain excess water; during the dry season, that water is released slowly to maintain river flow. When this function is lost, West Kalimantan will face two disasters at once: major floods during rains and acute droughts during dry spells.

The destruction of mangrove and land forests in Bagan Asam, high floods and land fires in Mungguk Pasir Hamlet, and crocodile attacks in Kampung Baru are not isolated symptoms. All three are signals that the ecological functions of Binua Labai Lawai and Binua Kapuas Jaya have been disrupted. Lost forests cause water to flow rapidly; dried peat makes land easily flammable; disrupted rivers force wildlife to approach settlements. This is a systematic disaster pattern, not a coincidence.

If Binua Labai Lawai and Binua Kapuas Jaya continue to be exploited, West Kalimantan will face a future of more frequent floods, longer droughts, easier flammability, and harder recovery. Flooding not only threatens settlements, but also destroys roads, gardens, fisheries, and food access. Drought not only dries up rivers, but also triggers peat fires that produce cross-regency and cross-provincial haze.

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DAS Kapuas itself.

Binua Labai Lawai and Binua Kapuas Jaya must immediately be treated as areas of hydrological, cultural, and life protection, not exploitation zones. The state is obligated to halt concession expansions that threaten forests, peatlands, rivers, and customary territories, conduct audits of overlapping permits, and restore existing damage.

If exploitation policies continue, Indigenous peoples will continue to lose their homes, food, and dignity. Floods will come faster, droughts will last longer, fires will become more frequent, and wildlife will be driven closer to settlements. At that point, the damage can no longer be called a "side effect," but a disaster planned by policy and investment interests.

Binua Labai Lawai and Binua Kapuas Jaya are ecological strongholds for West Kalimantan. If these strongholds fall, those who bear the consequences will not just be the companies reaping profits, but all communities that depend on water, fish, forests, and the future of DAS Kapuas.

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