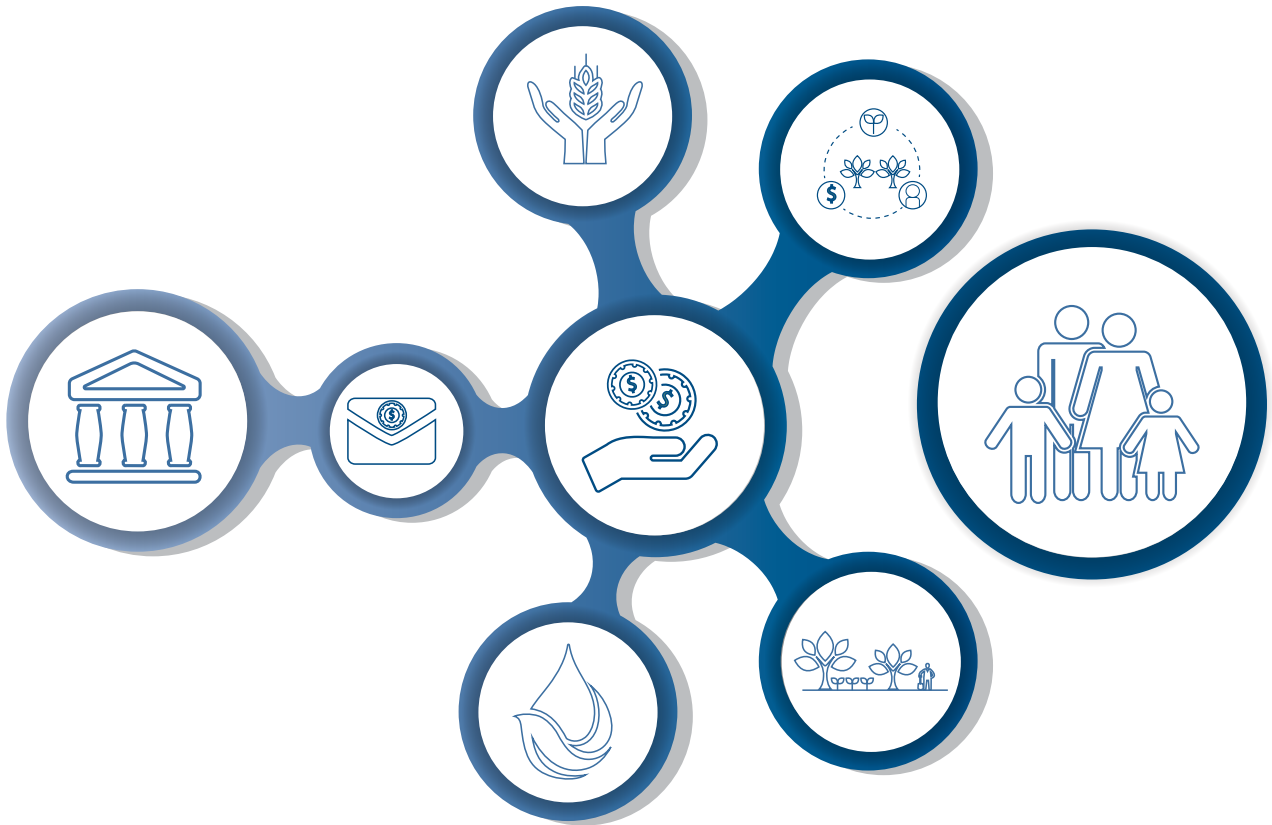


# Report on implementation of the Landscape Assessment of Financial Flows (LAFF) in Gunung Tarak Landscape, Indonesia

Dicko Rossanda, Gabija Pamerneckyte,  
Irene Koesoetjahjo and Bas Louman





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2020

This report reflects the discussions and perceptions of local participants during a training workshop, sector focal group discussions and interviews. It was not possible to verify information on the size of financial flows, nor to measure the real impacts that these flows have on the landscape objectives defined by the participants. If the financial flows mentioned in this report are considered important for the development of the landscape, it is recommended that the information presented here be verified by implementing more in-depth studies before defining potential actions to improve the impacts of these flows. It should also be noted that assessments that resulted in positive or negative impacts of the flows do not imply any judgment on the source or recipient of these flows. Rather, the assessments should be seen as a call for attention where actions could be taken to improve the impacts of the financial flows in the landscape and to increase coherence between investments and landscape objectives.

This study was implemented from September 2018 until July 2019. Since then, and partially due to the experiences with this study, the landscape boundaries for the operations of the implementing agency have been adjusted to encompass all of the two regencies and has been renamed the Ketapang – Kayong Utara landscape. The results of this study are valid for most of the new landscape, except the northeastern part, where mineral soils dominate and a considerable part of the population are Dayak people.

### Acknowledgments

We acknowledge the valuable contributions of all workshop and focal group participants, as well as the key informants who helped us shed light on the financial flows in the Gunung Tarak Landscape (GTL). In particular we want to acknowledge the Indonesian Statistics Agency (Badan Pusat Statistik, or BPS) for making data available for phase 1 of this study on the economics of the Ketapang and Kayong Utara regencies, within whose boundaries the GTL is located (chapter 2). We also want to thank Prof. Dr. Ir. Gusti Zakaria Anshari, MES, from Tanjung Pura University, in Pontianak, West Kalimantan, for his valuable support in the analysis of these data. Further we are grateful for the support provided by Seth Shames of EcoAgriculture Partners in the development of the methodology and revision of the first reports.

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## Acronyms

<b>APL</b>	<i>Areal Penggunaan Lain</i> (Non-forest area)
<b>APBD</b>	<i>Anggaran Pendapatan dan Belanja Daerah</i> (Regional development budget)
<b>APBN</b>	<i>Anggaran Pendapatan dan Belanja Negara</i> (State budget)
<b>ASRI</b>	<i>Alam Sehat Lestari</i> (Indonesian NGO that protects environmental health in West Kalimantan)
<b>BPD</b>	<i>Bank Pembangunan Daerah</i> (Regional Development Bank – province-owned bank)
<b>BPS</b>	<i>Badan Pusat Statistik</i> (Indonesian Statistics Agency)
<b>BRI</b>	<i>Bank Rakyat Indonesia</i> (Indonesia Peoples Bank – nationally-owned bank)
<b>CFF</b>	Conservation sector financial flow
<b>CPO</b>	Crude Palm Oil
<b>CSR</b>	Corporate Social Responsibility
<b>CU</b>	Credit Union
<b>ESG</b>	Environmental, Social and Governance [principles]
<b>FFI</b>	Flora Fauna International
<b>GPNP</b>	Gunung Palung National Park
<b>GRDP</b>	Gross Regional Domestic Product
<b>GTL</b>	Gunung Tarak Landscape
<b>HCV</b>	High Conservation Value
<b>IAR</b>	International Animal Rescue
<b>IDH</b>	The Sustainable Trade Initiative
<b>JICA</b>	Japan International Cooperation Agency
<b>KEE</b>	<i>Kawasan Ekosistem Esensial</i> (Essential Ecosystem Area)
<b>K-KU</b>	<i>Ketapang-Kayong Utara</i>
<b>KUR</b>	<i>Kredit Usaha Rakyat</i> /micro credit program
<b>LAFF</b>	Landscape Assessment of Financial Flows
<b>LPHD</b>	<i>Lembaga Pengelola Hutan Desa</i> /Village Forest Management Organisation
<b>MFF</b>	Mining sector financial flow
<b>MOA</b>	Ministry of Agriculture
<b>MOEF</b>	Ministry of Environment and Forestry
<b>NGO</b>	Non-Governmental Organization
<b>NP</b>	National Park
<b>OP</b>	Oil Palm
<b>PFF</b>	Oil palm sector financial flow
<b>PT</b>	Perseroan Terbatas (Limited Company)
<b>RFF</b>	Rice sector financial flow
<b>RSPO</b>	The Roundtable on Sustainable Palm Oil



## 1. Introduction

Tropenbos Indonesia (TI), in collaboration with Tropenbos International (TBI), conducted a Landscape Analysis of Financial Flows (LAFF) in Gunung Tarak Landscape (GTL) from September 2018 until July 2019. The analysis followed the methodology described in the LAFF manual, then available as a draft.<sup>1</sup> The methodology exists of two phases, the first one being a rapid analysis of the macro-economic characteristics of the Gunung Tarak Landscape. The second phase is an analysis of the characteristics and impacts of the main economic sectors, focusing on a set of prioritized flows within the landscape. The concept of LAFF is that various financial flows exist within landscapes and that they may interact and may have both synergies and trade-offs in terms of impacts on the sustainability of the landscape. Understanding these interactions and impacts is a first step toward understanding how financial flows need to change in order to achieve more sustainable and climate-resilient landscapes.

The objectives of the study were to generate an understanding of the composition of the landscape economy — the key sectors — and then, in phase 2, to identify the most important financial flows within these sectors. The most significant financial flows are those that have the greatest impacts on landscape objectives — both positive and negative — and those that show the potential to have more positive impacts or to expand their existing positive effects on the landscape. The LAFF process also identifies financial resources that could support strategic projects and activities critical to sustainable landscape management, and the key existing financial flows that need to be addressed in order to meet landscape objectives. The assessment of financial flows and their characteristics should identify opportunities to strengthen the financial governance mechanisms of key financial flows and the coordination of investment in the landscape. It should also identify the system-wide challenges to the landscape's financial system (including key gaps in services). This knowledge can be used to design and scale up landscape-wide initiatives, and to make them more sustainable and self-sufficient while at the same time aligned to landscape objectives.

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<sup>1</sup> Shames, S., B. Louman and S. Scherr. 2019. *The Landscape Assessment of Financial Flows: A Methodology*. Tropenbos International and EcoAgriculture Partners: Wageningen, the Netherlands.

The current document summarizes the main results of the first phase in Section 2 and reports in more detail on the second phase in Sections 3, 4 and 5. In between the two phases, during a multi-stakeholder workshop in November 2018, the rapid analysis of the economy of Phase 1 was the basis for selecting five sectors whose financial flows were to be studied in Phase 2:

- conservation and sustainable use of forests (subsequently referred to as conservation);
- rice cultivation;
- swift house production;
- oil palm cultivation; and
- mining.

In Phase 2, sector focal group (SFG) discussions were held for each of the five sectors. Participants identified the relevant economic actors involved, identified the landscape objectives (Box 1), mapped the financial flows, and analyzed the flows' importance to and impacts on the landscape objectives.<sup>2</sup> In February and March 2019, these were followed up on by a series of interviews with key actors in each of the sectors to fill gaps in the information obtained during the focal group discussions, and to ensure participation by some of the key stakeholders who were not able to participate in the SFGs. A more detailed description of this methodology is presented in Section 3. The results are presented in Section 4 and in section 5 we discuss both the methodology and the implications that the results may have for strategies that aim to (re)direct finance towards achieving the landscape objectives.

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<sup>2</sup> The SFG for conservation and sustainable use of the forest was held on 5 December 2019; rice on 6 December 2019; and swift house, oil palm and mining sectors on 11, 12 and 13 December 2019 respectively.



## 2. Phase 1: Characterizing the landscape economy

Information in this section is based on a study commissioned by the Sustainable Trade Initiative (IDH)<sup>3</sup> and is complemented by an analysis of data made available by the Indonesian statistical agency (*Badan Pusat Statistik*, or BPS) for the two regencies.

The Gunung Tarak Landscape is located in Ketapang and Kayong Utara regencies, West Kalimantan Province, Indonesia. It covers seven districts in Ketapang and two of five districts of Kayong Utara<sup>4</sup>. There are 58 villages in Ketapang Regency and 14 villages in Kayong Utara Regency. The area of the landscape is approximately 500,000 hectares (ha); the regencies have respective areas of 3,100,000 and 460,000 ha.

The landscape includes four nearly contiguous forested areas, which cover 40% of the landscape:

- Gunung Palung National Park (108,000 ha, Ketapang and Kayong Utara regencies);
- Gunung Tarak (Watershed) Protection Forest (24,000 ha, Ketapang Regency);
- Sungai Putri Peat Swamp Forest (59,000 ha, Ketapang Regency); and
- Pematang Gadung Village Forest (15,000 ha/Ketapang Regency).

The first three forested areas are located north of the Pawan River and are home to about 2,500 Bornean orangutan (*Pongo pygmaeus wurmbii*). The fourth, Pematang Gadung Village forest, is located south of the Pawan River and inhabited by about 500 orangutan.

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3 Hatfield Indonesia, 2017. Development of Green Growth Plan of West Kalimantan with detailed analysis of Ketapang, Kayong Utara and Kubu Raya Regencies. Baseline Data and Business as Usual Scenario. Prepared for IDH-The Sustainable Trade Initiative. PT. Hatfield Indonesia, Bogor

4 During the implementation of LAFF the Tropenbos programs in West Kalimantan have expanded their area of influence to the district level and the landscape has been renamed Ketapang – Kayong Utara landscape. Although LAFF focused on the GTL, it is assumed that its results are valid for the expanded landscape as well.



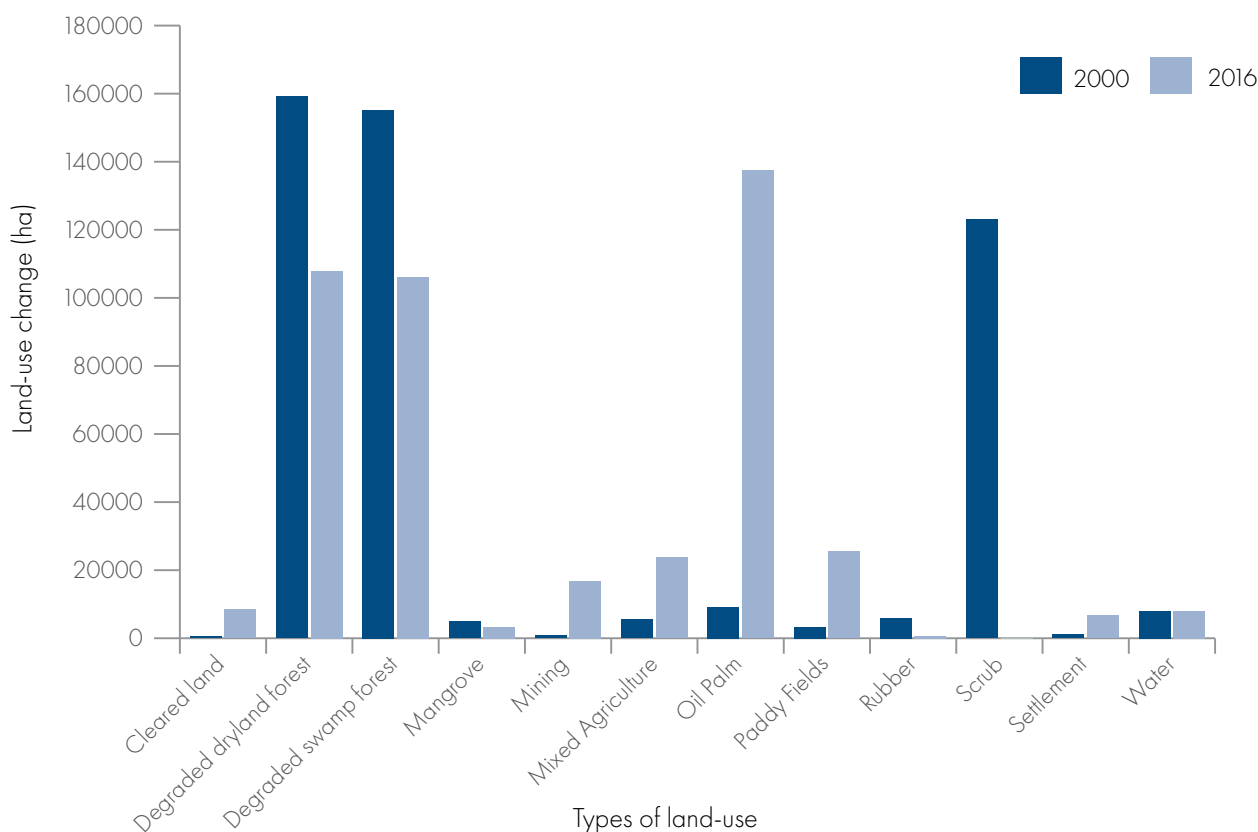
The landscape has been fragmented due to other land uses. To reconnect these forest areas many institutions (including Tropenbos Indonesia and other partners of the Sustainable Trade Initiative) are working on developing corridors. The forested areas are surrounded by 19 oil-palm plantation management units.

The landscape also contains the Ketapang Industrial Zone (KIZ) designated by the Mid-term National Development Plan 2014–19. As of 2019 development of this zone is on hold, although land acquisition and preparation of 1,000 ha of land have been conducted and permission and planning documents have been ready since 2015<sup>5</sup>. The KIZ was initiated to support Kalimantan Island as a strategic area for the oil palm, mining and energy industries.

## 2.1. Land-use change in Gunung Tarak Landscape, 2000–16

Between 2000 and 2016, the areas of degraded dryland and degraded swamp forest decreased by approximately 50,000 (ha) each. See Figure 1. In the same period scrub area decreased by 61,000 ha; mangrove area decreased by 1,600 ha; and paddy rice fields decreased by 7,400 ha. In total, approximately 35% of the landscape changed cover during these 16 years. More than 90% of this change was due to the loss of forest and scrub cover and more than 73% was due to a gain in oil palm plantations, whose area increased by an average of almost 8,000 ha per year. Mining, mixed gardening and urban settlements were responsible for most of the other losses in forest and scrub cover.

**Figure 1: Land-use change (in ha) in Gunung Tarak Landscape, 2000–16.**  
Adapted from Widayati et al. 2018<sup>6</sup>



Mining areas have been growing in the southeast area of the landscape, where illegal gold mining hasn't been controlled. Palm oil production, mining and trade opportunities have attracted investments, followed by people seeking jobs. This immigration contributed to the increase of settlements, along with population growth by birth.

<sup>5</sup> <https://kppip.go.id/en/national-strategic-projects/s-priority-industry-zone-development-special-economic-zone/ketapang-industrial-zone-west-kalimantan/>

<sup>6</sup> Widayati A, Wijaya K, Purwanto E, Zagt R. 2018. Reviving Conservation Values in Agro-commodity Landscape: The Case of Gunung Tarak Landscape, West Kalimantan, Indonesia. Info Brief 2018, Tropenbos Indonesia, Bogor.

## 2.2. Economic size of GTL regencies

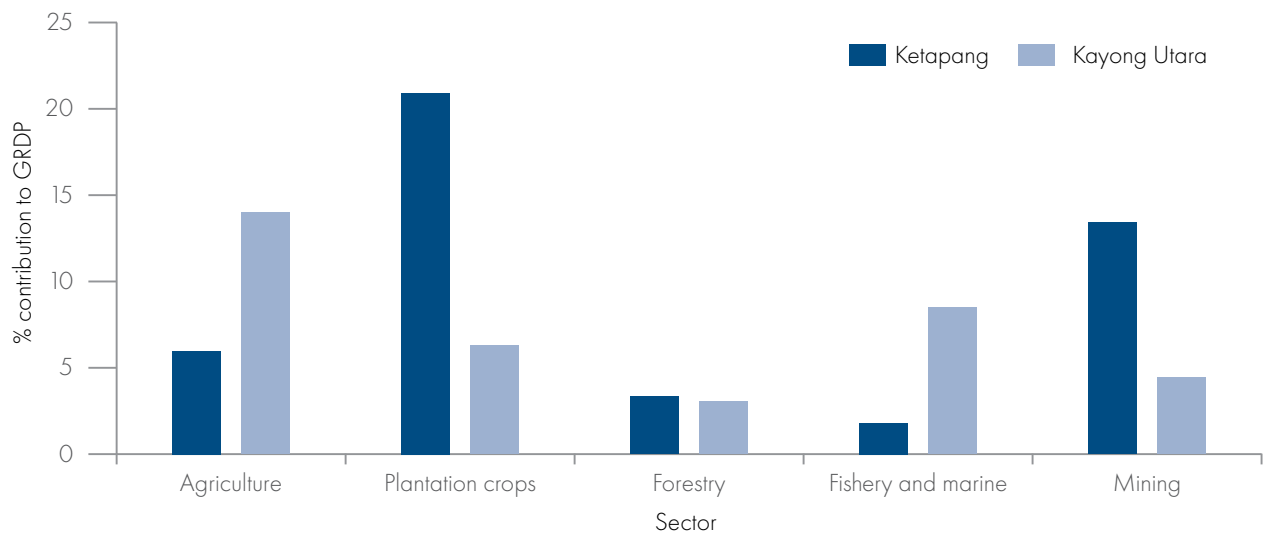
In 2018, the gross regional product for Kayong Utara District was IDR 3.8 trillion,<sup>78</sup> while for Ketapang Regency it was IDR 25.4 trillion.<sup>9</sup>

The annual rate of economic growth in Kayong Utara Regency is relatively stable at 5% (5.4% in 2018; see Footnote 8), while the economic growth rate of Ketapang Regency has risen sharply since 2015. Between 2015 and 2018, Ketapang Regency has been able to achieve a 7% economic growth rate, which is higher than that of West Kalimantan (5.06% in 2018; see Footnote 9) and of Indonesia in general. The growth rate in Kayong Utara Regency fluctuates from year to year, while in Ketapang Regency it tends to increase. This difference may be due to the main drivers of growth in each regency. Ketapang Regency has a more developed economy, with investments in a greater variety of sectors and less geographical space left for large plantation investments. Kayong Utara is a relatively new regency, where mining and large plantation investments occur.

## 2.3. Gross Regional Domestic Product

The Hatfield Indonesia study for the Green Growth plan of West Kalimantan Province (see footnote 3) provides data on gross regional domestic product (GRDP) for the years 2011–15. See Figure 2. During this period, (oil palm) plantation crops and mining together provided more than 34% of the GRDP of the Ketapang Regency (3.1 million ha). In the Kayong Utara Regency (460,000 ha) the largest proportion of GRDP is provided by agriculture (non-plantation crops) and fisheries and marine activities (22%). Data for Kayong Utara provided by the statistical agency BPS indicated that in 2017, oil palm plantations' share in GRDP increased to 15.33%, while the share of mining grew to 15.52%.

Figure 2. Sector contributions to Ketapang and Kayong Utara regencies' GRDP, 2011–15



Source: adapted from Hatfield Indonesia (2017) (see footnote 3).

## 2.4. Key economic sectors in the landscape

### Conservation sector

The Gunung Tarak Landscape is composed of vast fragments of forested areas. Forests cover approximately 40% of the landscape. The landscape contains three state-managed forest areas — Gunung Palung National Park (GPNP), Gunung Tarak Protection Forest, and Sungai Putri Peat Swamp Forest — as well as the Pematang Gadung

<sup>7</sup> The average exchange rate for the first six months of 2019 was 16,033 rupiahs: 1 euro (<https://www.x-rates.com/average/?from=EUR&to=IDR&amount=1&year=2019>)

<sup>8</sup> <https://kayongutarakab.bps.go.id/> regional statistics for Kayong Utara 2019

<sup>9</sup> <https://ketapangkab.bps.go.id/> regional statistics for Ketapang 2019

Village Forest. The national park provides a source of irrigation water for 45,000 ha of rice fields in Kayong Utara Regency. It is also a source of clean drinking water for the people in the Ketapang and Kayong Utara regencies. GPNP, Gunung Tarak Protection Forest and Sungai Putri Production Forest are the only remaining intact habitats for Bornean orangutan (*Pongo pygmaeus wurmbii*, 3,000 individuals) in the Ketapang and Kayong Utara region. The Sungai Putri peat swamp forest (59,000 ha) is one of the coastal peat forests among 1,750,000 ha of other peatlands in West Kalimantan Province. It consists of several peat domes, which are significant areas for carbon storage, biodiversity and freshwater supplies. The forest is a potential site for a REDD project. In addition, there are several village forests (*hutan desa*) in the landscape, including Pematang Gadung peat swamp forest (15,000 ha), Laman Satong Village Forest (1,070 ha), Batu Menagis Village Forest (1,034 ha) and Gema Village Forest (4,000 ha), where local communities have committed themselves to conservation and sustainable use of the forest and its surroundings. Several other proposed village forest permits are still in process.<sup>10</sup>

The forest areas are surrounded by 19 oil-palm plantations. In the past these management units were responsible for much of the land-use change in the landscape, but owners are now complying with the national moratorium on oil-palm extension and some of them are adhering to national or international palm oil standards.

Many institutions work in the landscape to assist in conservation efforts to protect the area. They work hand in hand with the local governments — at the village level up to the provincial level — and in the private sector and local communities, while the national government's role is clear with the declaration of the national park and the protection forest. The local governments, in this case the governments of Ketapang and Kayong Utara regencies, also share the commitment to maintain an environmental balance, especially in the non-forested area (*Areal Penggunaan Lain*, or APL), which is under the authority of these local governments. Although these APLs are not destined for conservation, there are initiatives to protect high conservation values (HCVs) in them; through, for instance, designation of essential ecosystem areas (*Kawasan Ekosistem Esensial*, or KEE) and through HCV requirements in the Roundtable on Sustainable Palm Oil (RSPO) standards. Ketapang Regency government made a firm statement on the sustainable management and utilization of natural resources in its mid-term development plan for 2016–21.

Various NGOs facilitate community empowerment, education and training, and seek solutions for improving community well-being by introducing opportunities for livelihoods that are sustainable and more environmentally friendly than existing livelihoods. Several NGOs support villages to obtain village forest agreements. Private-sector companies are providing funds to create positive impacts on the environment in their attempt to compensate for environmentally destructive production practices.

### Rice sector

Rice cultivation is one of the more important economic activities of the agricultural sector in the landscape. A total of 17,768 households work in rice fields and 664 farmer groups have been registered in the landscape. The districts of Matan Hilir Utara and Benua Kayong are the rice centres in Ketapang Regency.

Increasing rice productivity has the potential to positively affect farmers' welfare. So far, both upland and irrigated rice are cultivated mainly to fulfill people's subsistence needs, rather than for income. The price is unstable and the market demand is uncertain, so in practice most farmers have other sources of income. However, rice still makes an important contribution to the food security of the area. The government provides incentives (inputs such as improved seeds and (organic) fertilizer) for farmers to optimize cultivation on their current land instead of opening up other land.

### Swift nest production sector

Selling swift nests is a promising business in the landscape. Swift nests are sold domestically and to international markets. The export market for West Kalimantan's swift nests includes China, United States, Hong Kong, Malaysia, Singapore, Taiwan, United Kingdom, South Korea, Myanmar, Macau and Japan. For instance, PT Faichung Bird-

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<sup>10</sup> This paragraph was based on a draft internal TBI project document "context analysis of the Ketapang – Kayong Utara landscape" for the Mobilising More for Climate (MoMo4C) project, which was written simultaneously with this study. The project is a joint initiative by IUCN National Committee of the Netherlands, TBI and WWF.

nest Industry, located in Delta Pawan district, Ketapang, has been exporting swift nests to China since November 2018. The price of swift nests is around IDR 16 million per kg for dirty nests, and IDR 25 million per kg for clean nests, with export prices to China reaching up to IDR 40 million per kg. The company exports around 15 kg per month, which is the approximate production capacity of one swift house.

To obtain the nests, farmers build special houses in which the birds nest. Most swift houses (40-60% of all swift houses in the Ketapang regency) are concentrated in six of the 20 districts in Ketapang: Benua Kayong, Matan Hilir Selatan, Kendawangan, Hulu Sungai, Sandai, and Sei Laur. Many of the swift houses are located on the bank of the Pawan River. Despite the perception that swift house owners make big profits, the taxes from swift houses and swift nests indicate that the business is still limited. Although Ketapang Regency has a local regulation on swift houses, many swift house business owners are still unregistered and avoid paying taxes without sanction. Of the estimated 2,000 to 3,000 swift houses in Ketapang Regency, only around 400 owners pay land and housing taxes to the local government as a contribution to locally generated revenue.

According to the Provincial Office of Agriculture Quarantine Centre, West Kalimantan registered an export of 597.5 kg of swift nests (worth IDR 14.9 billion) in 2015 and 130.85 kg (worth IDR 3.7 billion) in 2018. During the first two months of 2019 102 kg were exported, for a value of IDR 2.7 billion. This is well below the estimated production potential, which is estimated at about 240 tonnes of nests per year based on the number of swift houses built.

### Oil palm sector

Oil palm is the largest producer of the agricultural sector in the Ketapang Regency, followed by rubber.<sup>11</sup> While the former is increasing in area planted, the latter is decreasing. By 2015, the production of oil palm had reached 302,000 tonnes, far higher than other plantation crops such as coconut, rubber, cocoa, pepper and sugar palm. This provided about 20% of the GRDP of the regency. In that same year, oil palm plantations provided work for more than 22 thousand labourers: 42% of the labour force in the plantation sector. The other major employer was rubber, with 19 thousand labourers (see footnote 9). Since 2015 oil palm plantations have expanded to 380,619 ha: 259,086 ha are actually producing; 113,308 ha are still too young to produce; and 8,225 ha are damaged. Production reached 516,675 tonnes of crude palm oil and 22,836 farmers were involved; the production value of all plantation crops contributed about 15% of the regency's GRDP. See Footnote 11. Currently, a total of 16 companies are working within the landscape.

West Kalimantan was designated as an area of oil palm investment by the national government and has attracted many investors to this sector. More recently, policy changes have limited oil palm expansion: the national government issued a moratorium in 2018 that halts any new permits for oil palm plantations.

### Mining sector

Mining is a strategic sector in the acceleration of development in Indonesia. Since 2014, at least 156 companies in Ketapang Regency have received concession permits (for bauxite, gold, coal, zircon and iron ore), with a total area of 1.3 million ha. In the Gunung Tarak Landscape, there are two big mining companies: PT Dutam Mineral in the northern part of the GTL; and PT Laman Mining, with a concession area between Gunung Palung National Park and Sungai Putri Peat Swamp Forest. In addition, there are several illegal mining operations in the Pematang Gadung area.

Although mining has a meaningful role in improving the economy of the community, its social impacts are barely reported, and mining activities remain a cause for concern due to their harmful impacts on the environment. In the Pematang Gadung area, for instance, lands used for mining have become ponds and even caused the death of some workers. The river in the area has been polluted by mercury. There is potential for the mining sector to improve its social and environmental performance, but there is still little transparency in the financial and spatial aspects of mining, and monitoring by the mining inspectorate is still very weak.

<sup>11</sup> BPS statistics of Ketapang Regency 2019. Kabupaten Ketapang Dalam Angka 2019, (Ketapang Regency in Figures 2019), available at <https://ketapangkab.bps.go.id/publication> (in Indonesian).



### 3. Phase 2: financial flow analysis methodology

Phase 2 of the LAFF process in the Gunung Tarak Landscape started immediately after a stakeholder training on the methodology and key concepts. The training was used to determine the key financial sectors and landscape objectives. The stakeholder workshop was directed at members of the local multi-stakeholder platform. During this workshop the participating landscape stakeholders identified the landscape objectives and confirmed the key sectors suggested in the Phase 1 study (Box 1).

#### Box 1. Landscape objectives

These were the six landscape objectives identified for Gunung Tarak Landscape:

1. creates economic benefits for local people (income, employment);
2. contributes to restoration of landscape biodiversity;
3. strengthens social capital;
4. contributes to food security;
5. contributes to secure access to good water; and
6. contributes to climate change mitigation.

In the GTL, 15 participants from NGOs and local authorities attended the training. They agreed that the five key sectors in GTL were: conservation (including sustainable forest management), rice production, swift nest production, oil palm plantations, and mining. These five land uses are considered to be important for the landscape community as sources of livelihoods and in the ways that they affect the sustainability of the landscape.

Following the training workshop, the implementation team set up sector focal group (SFG) workshops. Workshops were organized for each of the five priority land uses identified. SFG workshop participants represented various actors — public, private civic, etc. — from each sector. During the workshops participants were asked to identify the main sources or recipients of financial flows within the sector that they perceived to have an impact on the GTL and on its landscape objectives.

Each sector focal group workshop is an interactive/participatory workshop that starts with introducing participants to LAFF methodology, objectives and key concepts. With the guidance of a facilitator participants identify the key actors of that sector within the landscape and the financial flows between those actors. When all the flows are identified, participants select approximately ten of them for further characterization. The participants then select the key financial flows of the sector, based on the following criteria:

- flows that have significant positive or/and negative effects on the Gunung Tarak Landscape;
- flows that involve a very large amount of money;
- flows that have the most opportunities for improvements to their impacts;
- flows that have the most opportunities for expanding funding to other positive initiatives.

Participants score each key financial flow for its impacts on each of the six landscape objectives (Box 1). Scores range from -2 for a very negative effect to +2 for a very positive impact. Participants are asked to explain why they assigned a certain score, and to quantify the particular effect of that flow on the landscape objectives. Extensive financial flow maps and tables with scores can be found in Annex 1.

Participants then select the most significant financial flows, based on each flow's overall score. The overall score is the sum of the flow's scores for all six landscape objectives. Once the most significant financial flows were selected, the implementation team identified key informants who could provide more information on the source and recipient of those flows and on the conditions under which the flow took place. These informants were interviewed to gather more in-depth information.

The information from workshops and interviews was then combined and analyzed to identify finance patterns, details and potential opportunities for improving the impact of financial flows on the landscape objectives and for expanding existing funds to other initiatives with positive impacts.

The LAFF methodology is designed to carry out a relatively quick assessment of financial flow dynamics in a landscape. Systematically represented information on financial flows in the landscape can help multi-stakeholder partnerships find ways to use and influence financial resources more effectively. In order to be feasible and affordable the LAFF methodology is simple, and is meant to derive results that can direct further, more in-depth and focused investigations.



## 4. Phase 2: results

### 4.1. Conservation sector

Participants identified ten main financial flows in the conservation sector (CFFs) in the Gunung Tarak Landscape; see Table 1 and Figure 3. None of the financial flows identified by the conservation sector focal group had a net negative effect on landscape objectives.

Gunung Palung National Park plays a central role in conservation efforts in the landscape. The national park is funded mostly by the national government of Indonesia. An important contribution by Japan International Cooperation Agency (JICA) in the form of grants amounting to IDR 13 billion (CFF1) was given between 2013 and 2018; this had various positive impacts on the landscape goals (+8). JICA's grant, combined with the national government budget (CFF2; IDR 13.1 billion in 2017), contributed to the development of alternative livelihoods and sustainable agriculture for the communities, and to monitoring and reforestation in the national park area (+9). Investments by JICA and the national government in the conservation of the national park are important in providing clean water. Based on Ministry of Environment and Forestry (MOEF) policy, 30% of water from GPNP can be directly accessed by the community, and an additional 10% is available for commercial use, although this requires a licence from the MoEF.

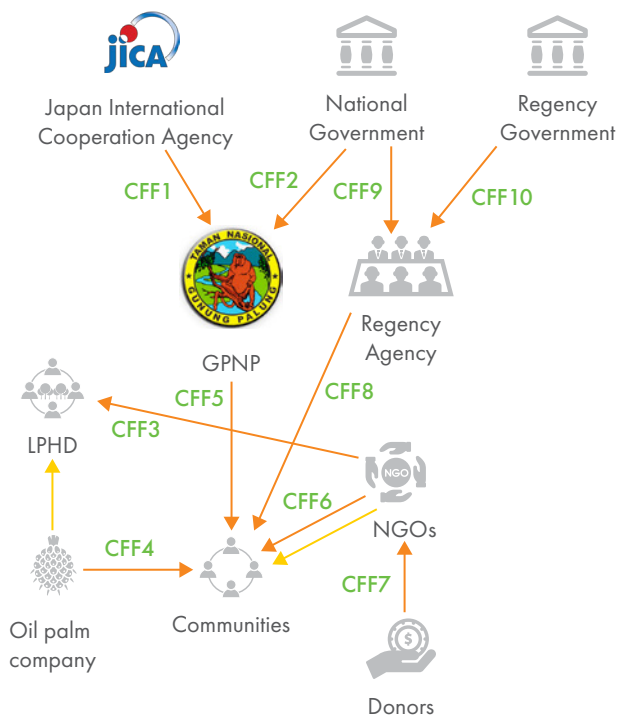
**Table 1. Main financial flows in the conservation sector, Gunung Tarak Landscape**

CFF#	Source → recipient	score
CFF1	International Cooperation Agency → GPNP	+8
CFF2	National Government → GPNP	+9
CFF3	NGOs → Forest Village Management Organization	+6
CFF4	Oil palm company → Community	+7
CFF5	GPNP → Community	+6
CFF6	NGOs → Community	+6
CFF7	Donors → NGOs	+10

CFF8	Regency Agency → Community	+6
CFF9	National Government → Regency Agency	+1
CFF10	Regency Government → Regency Agency	+6

Note: CFF9 was still under negotiation at time of the study

Figure 3. Main financial flows within the conservation sector in the Gunung Tarak Landscape



Note: orange = positive impact; yellow = flow not quantified

Note: CFF9 was still under negotiation at time of the study

Another significant flow in the conservation sector is the money given by NGOs to the Lembaga Pengelola Hutan Desa (LPHD) or Village Forest Management Organisation of Manjao Village (CFF3, score +6). Flora & Fauna International (FFI) and Yayasan Palung assisted in the establishment of the village forest and initiated the establishment of the LPHD; it obtained a village forest permit in 2011. Through the intermediation of these NGOs, the LPHD received funds from the Disney Foundation and the International Cocoa Organization through a forest carbon management mechanism (Plan Vivo), amounting to IDR 150 million per year for five consecutive years starting in 2013. This funding commitment is going to be continued by a private company (negotiations are still in process). The funds are used for monitoring and restoration of the village forest, which preserves water resources for paddy fields, agroforestry and public consumption.

NGOs also allocate money to the communities as grants and interest-free loans (CFF6, score +6). These grants are used for programs that generate jobs for local people. The money is also used for restoration of the forests, organizing forest patrol teams with the community members and establishing womens' mushroom farms. In addition, NGO grants are used to improve agricultural activities to make them more sustainable; this provides food, income and — if combined with forest conservation — clean water.

For example, Alam Sehat Lestari (ASRI) purchases chainsaws from loggers in the villages that surround Gunung Palung National Park and provides them with a zero-interest loan so that they can start their own alternative business. Tropenbos Indonesia supports mushroom farming by a womens' group in Manjau sub village, Laman Satong village.

NGOs receive their money from donors (CFF7, score +10), and this is where it is difficult to untangle the grants and follow individual grant streams. It is these grants, however, that fund all of the NGOs' activities in the landscape. Grants are mostly provided by donor agencies, with a few exceptions, such as ASRI's clinic being funded by indi-



vidual donations (which are more flexible than donor schemes). The donations pay for direct costs of programs and project implementation in the landscape. NGOs in the Gunung Tarak Landscape support several types of projects:

- Alternative livelihood development (ASRI, IAR, TNC, TI, FFI, YP);
- Restoration (ASRI, IAR, TNC, TI, FFI, YP);
- Health services (ASRI);
- Biodiversity research (IAR, YP, FFI);
- Ecotourism (ASRI, IAR, TNC, TI, FFI, YP);
- HCV/HCS/EEA (TI, FFI, IDH);
- Village forest establishment (FFI, IAR, TI); and
- Village governance strengthening (TNC, TI, FFI).

Private investors are taking noteworthy steps to support GTL's conservation sector. For instance, some palm oil companies are providing grants to communities (CFF4), creating positive impacts on the landscape goals (+7). The LAFF methodology identified one particular company, PT Kayung Agro Lestari, which provides grants to Laman Satong, Kuala Satong and Kuala Tolak villages. Some activities related to these grants contribute to collaborative activities with other institutions such as village governments or other NGOs. The activities include a pilot project on livelihood interventions, restoration efforts and forest patrols. These grants improve livelihoods and nature conservation in the areas surrounding the company's plantations.

After the interviews, the flow from the National Government to the Regency Government Agency (CFF9) was found not to exist yet. The Ketapang Regency agency (appointed by the regency government) applied to the national government for access to this profit-sharing restoration fund, but the application did not meet the requirements. The regency was requested to revise its Budget Activity Plan (RKA) and resubmit the application. Table 1 shows this flow as potentially positive, based on the expected impacts.

The flow from the budget of the regency government to regency agency (CFF10) for catchment area conservation activities in the form of seedlings (rubber, matoa and other forest trees) has also been considered important in achieving the landscape objectives (+6). However, it was not possible to get a clear understanding of this flow during the assessment.

Two more flows that scored +6 during the focal discussion groups are CFF5 and CFF 8. In reality these are not financial flows, strictly speaking, since they represent budget allocations of the respective agencies (the national park and the regency/district agency) for the provision of technical assistance by their own staff or for acquisition of inputs (for example seeds) from third parties that are then delivered to the recipients in the communities.

Furthermore, during the focal group discussions it was mentioned that a new policy from MOEF on collaborative management of conservation areas may encourage alternative funding related to Corporate Social Responsibility or a co-financing mechanism with other initiatives, such as the local government budget and village fund.

Throughout the assessment of conservation sector participants noticed that the donor institutions offer funds only for specific activities and do not cover all non-activity related salaries of the permanent staff members (indirect costs). It was also noticed that a few stakeholders perceive conservation as a threat to the development of the landscape. One of the identified causes of such a perception is that in some cases people cannot have access to land because it is allocated for conservation, which prohibits people from using these areas for plantations or other production.

## 4.2. Rice sector

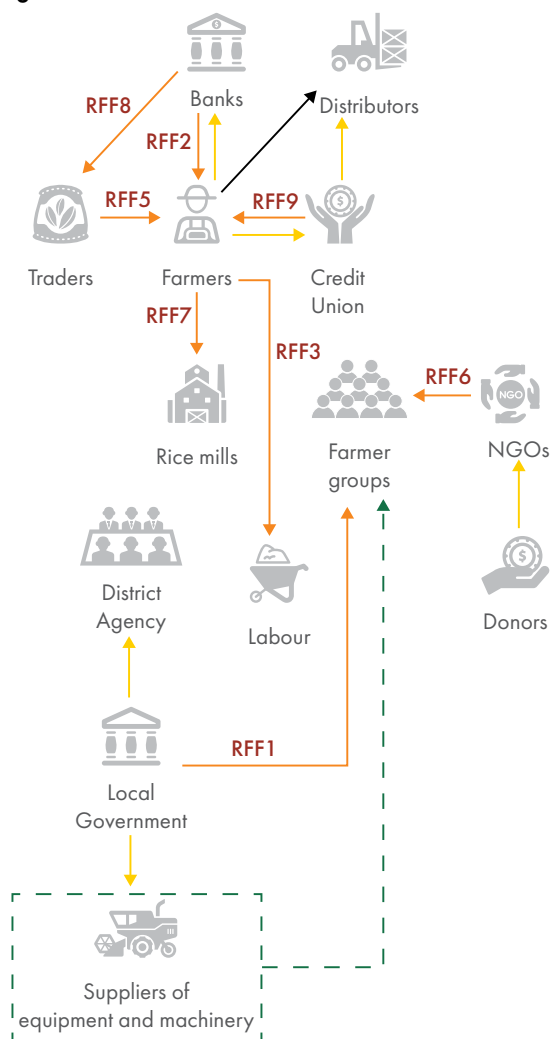
Participants identified nine main financial flows in the rice sector (RFFs) in the Gunung Tarak Landscape; see Table 2 and Figure 4. None of the financial flows identified by the rice sector focal group had a net negative effect on landscape objectives; one had a neutral effect (i.e., a score of 0). It is worth noting, though, that flows have different effects on individual objectives. Even when flows exhibit a positive net score, many of them affect some of the landscape objectives in a negative way.

The most significant flows in the rice sector are from the national government to farmer groups (**RFF1**; +5) and NGOs to farmer groups (**RFF6**; +4). This shows the positive perception that the focal group participants have of the farmers' group. It is not clear, though, whether this is because the organization allows for more efficient distribution of the funds, or whether it enhances the use of the funds for the landscape objectives.

**Table 2. Main financial flows in the rice sector, Gunung Tarak Landscape**

RFF#	Source → recipient	score
<b>RFF1</b>	National government → Farmer groups	<b>+5</b>
<b>RFF2</b>	Banks → Farmers	<b>+2</b>
<b>RFF3</b>	Farmers → Labour	<b>+2</b>
<b>RFF4</b>	Farmers → Distributors	<b>0</b>
<b>RFF5</b>	Traders → Farmers	<b>+1</b>
<b>RFF6</b>	NGOs → Farmer groups	<b>+4</b>
<b>RFF7</b>	Farmers → Rice mills	<b>+1</b>
<b>RFF8</b>	Banks → Traders	<b>+1</b>
<b>RFF9</b>	Credit unions → Farmers	<b>+3</b>

**Figure 4. The main financial flows within the rice sector in the Gunung Tarak Landscape**



Note: orange = positive impact; black = neutral impact; yellow = flow not quantified, green dashed = new flow, identified after the interview

Funds from the national government (Ministry of Agriculture, or MOA) reach farmer groups through the national budget in two programs: 1) the sub-optimum rice program, which provides rice seed and fertilizer; and 2) the program for the procurement of agricultural equipment and machinery. The latter is meant for rice production activities, but can be applied to other crops as well. The sub-optimum rice program is carried out by the Directorate General of Food Crops and Horticulture, while agriculture equipment and machinery are provided by the Department of Agriculture Equipment and Machinery. The MOA budget for rice production is part of the 2018 national policy priority on food security.

The total 2018 budget (national and provincial) for the provision of agriculture equipment and machinery in the Ketapang Regency was estimated to be IDR 10.68 billion, to be distributed to all sub-districts within the regency. Only those members of farmer groups registered as beneficiaries with the Agriculture Agency have access to the program. Farmer groups acquire agricultural production input packages from the supplier appointed by the national government, but may also receive machinery and equipment directly from the local government. Farmer groups receive support if the proposal that they send to the Regency Agriculture Agency is approved.

Several issues regarding this program came up in the rice sector assessment. The government focuses agricultural mechanization in the upstream area, and strengthens management capacity in the downstream area in order to increase production capacity and best utilize resources. The program uses a top-down approach, which often leads to equipment and materials being incompatible with farmers' needs. For example, it was mentioned that rice seeds are provided after the planting season has ended. Also, in cases where the use of equipment and materials was dominated by the elite, this flow created conflicts among farmer group members.

These programs reduce costs for farmers when they receive the correct equipment, thus contributing to economic benefits for local people. Input packages contribute to farmers' changing their practices to be more sustainable, since the soil enhancers and fertilizers provided are organic. The program indirectly supports farmers to make the transition away from shifting cultivation. Farmers practise shifting cultivation because of their limited knowledge of sustainable farming. With the assistance of NGOs, farmers gain knowledge of intensive agriculture and maintaining the fertility of their lands. In some villages social capital was strengthened, since the program increased collaboration among farmer groups and other stakeholders and in general improved food production.

The increased production capacity is expected to have a direct impact on farmers' welfare. However, most farmers do not completely depend on rice to secure their income; they plant rice only to fulfill their basic needs. The price of rice is unstable and the market demand is uncertain. Therefore, most of the farmers have other sources of income (working in Ketapang city, as a labourer for a company, as a trader). Rice, however, does contribute significantly to food security in the area. The government also suggested to the farmers to optimize their current land use instead of opening up other land. No significant impacts were discussed on biodiversity restoration, clean water or climate change mitigation.

Another important flow that was identified during the interviews (but not during the sector focal group and therefore not numbered in Figure 4) is that from the MOA (Ministry of Agriculture) to the supplier of agricultural equipment and machinery; this is shown as a grey line in Figure 4. MOA buys machinery and equipment from selected provider companies: rotary tractors, hand tractors, four-wheel tractors, rice planters, cultivators, corn planters (to plant rice in dry land) and water pumps. This equipment is then distributed by the local government to the farmers (broken blue line in figure 4).

The flow of grants from NGOs to farmer groups (**RFF6**) is considered to be significant as well (+4). This grant is provided in forms that include technical assistance, training, and event funding. It does not represent a cash flow. Because of technical assistance from the NGOs, rice production seems to have increased and shifting cultivation has been reduced in the area where the NGOs work. NGOs also promote collaboration among NGOs, farmers and the local government.

Besides these two most significant flows in the sector, six other flows have a positive score and one (**RFF4**) has a score of 0.

The flow from the credit union (CU) to farmers (**RFF9**) benefits local people economically (+3) as the loans help them get by in their daily lives. Since the CU is a membership-based system it strengthens social capital by members' sharing responsibilities and recommending each other for credit. However, credit unions are found only in some villages of the GTL.

Bank loans to farmers (**RFF2**) contributed to the landscape goals (+2) by enabling farmers to purchase seeds, fertilizers and pesticides to increase their production and earn a higher income. According to the rice focal group participants, BRI (*Bank Rakyat Indonesia*, a national state-owned bank) has allocated micro loans for 25 farmers in Sukadana District with an interest rate of 14%. However, this flow did not show strengthen social cohesion, since the loans are individual; neither has it had a direct impact on nature conservation in the area. The main concerns regarding this flow are that farmers often treat loans as grants, which is apparent in the low rate of Sukadanas rice credit repayments. Other banks are sometimes reluctant to provide loans because of fears of farmers failing to repay the loans, the short-term production of rice and the generally high risks of the sector. As a result, banks often prefer to provide loans to traders, who then might lend to farmers (**RFF5**; score of +1).

**RFF3** scored +2. Two flows scored +1 in this sector: **RFF7** and **RFF8**. All the flows identified contribute to economic benefits for local people and a few also relate to food security. The flow from trader to farmers (**RFF5**) is a pre-harvest season loan, which facilitates farmers in their harvest season and secures the market for their crops (farmer must sell to the trader who loaned them the money).

### 4.3. Swift house sector

There are about 3,000 swift houses in Ketapang Regency and around 4,000 units in Kayong Utara Regency (pers. comm., the Head of Income Office of Ketapang Regency). The investment needs of swift houses are IDR 120–200 million per unit, meaning that the total investment in both regencies is estimated to be in the range of IDR 840–1,400 billion.

In 2018 at least 32 tonnes of swift nests were produced in Ketapang and Kayong Utara regencies and the price ranged from IDR 10–17 million per kg. This means that the swift houses had a gross revenue of about IDR 320–544 billion in 2018. The huge market potential has attracted people in GTL to build new swift houses, but this has not appeared to generate the expected income, judging from the income tax revenues received by the local tax office.

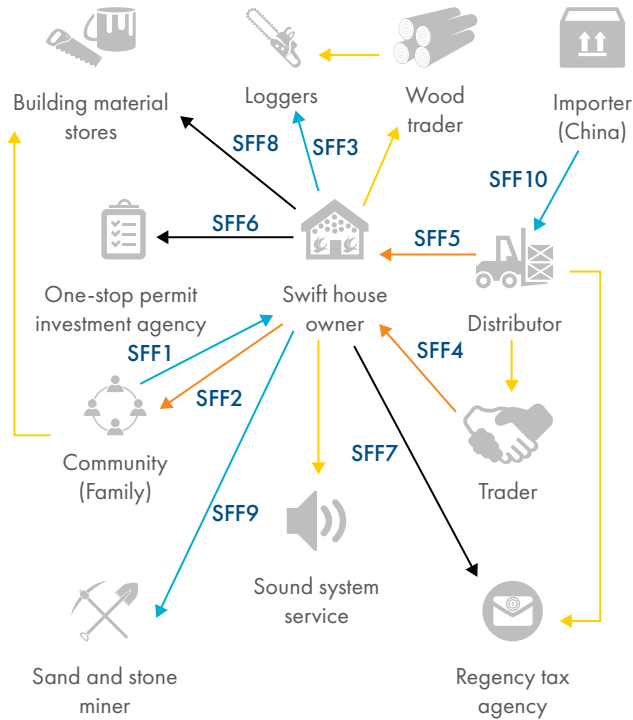
Despite the expected profits, financial institutions do not invest in this business. One of the reasons is that it is impossible to carry out a feasibility study for this business, since it is not possible to predict whether and how many swift nests will be built in each house, and what the quality of the nests will be. In addition, the swifts tend to move to upstream areas due to greater food availability. Some swift houses in Ketapang City have already been abandoned by the birds.

The swift house sector seems to be the least significant of all the selected key sectors of the GTL. Nevertheless, it does have flows that have impacts on the landscape goals. Participants identified ten main financial flows (SFFs) in the swift house sector in the Gunung Tarak Landscape. Four of the ten financial flows were assessed to have a negative overall impact score. Three flows had a positive impact and three flows had neutral impact; see Table 3 and Figure 5.

**Table 3. Main financial flows in the swift house sector, Gunung Tarak Landscape**

SFF#	Source → recipient	score
SFF1	Community (Family) → Swift house owner	-2
SFF2	Swift house owner → Community	+1
SFF3	Swift house owner → Loggers	-2
SFF4	Trader → Swift house owner	+1
SFF5	Distributor → Swift house owner	+1
SFF6	Swift house owner → One-stop permit investment agency	0
SFF7	Swift House Owner → Regency Tax Agency	0
SFF8	Swift House Owner → Building material stores	0
SFF9	Swift House Owner → Sand and stone miner	-1
SFF10	Importer → Distributor	-1

**Figure 5. The main financial flows within the swift house sector in the Gunung Tarak Landscape**



Note: Orange = positive impact; blue = negative impact; black = neutral impact; yellow = flow not quantified

The flow from Community (Family) to swift house owner (SFF1) represents investments. Usually swift house owners get part of the money needed for the construction by borrowing from their family or neighbour. Some money is also obtained through gifts. This flow is considered to have an overall negative impact (-2), due to the money being used to pay loggers and sand and stone miners for the inputs needed for construction of the houses.

The flow from swift house owners to loggers (SFF3) is considered to have negative impacts (-2). Since the swift house owner needs to buy lumber, it provides jobs for the loggers, which is considered to have a positive impact on the local people’s economy. On the other hand, logging contributes to destruction – or at least extensive disruption – of the forest cover and habitat for threatened species, and it increases carbon emissions.

Swift house owners’ payments to the sand and stone miners (SFF9) have similar effects as the payments to the loggers. The flow does contribute to provision of jobs for the miners, but it has harmful impacts on the forest and its biodiversity and on carbon storage. The net score for the flow is -1.

Payments from Chinese importers to the distributors/exporters in the region for the swift nests (**SFF10**) create an overall negative impact on the landscape ( $-1$ ). The flow provides income for the swift house owners and workers, but it also creates or maintains the demand for the swift house business and construction, which stimulates the extraction of materials.

Three financial flows in the sector create positive impacts on the landscape, each with a score of  $+1$ . Swift house owners support communities by providing grants (**SFF2**). Swift house owners sometimes sponsor social events such as football games or commemorating Independence Day. These contributions are perceived to have a positive impact on social capital by encouraging youth group collaborations with the village office and other village-level stakeholders when organizing these events.

The other two flows that create positive impacts are the payments for goods from traders (**SFF4**) and from distributors (**SFF5**) to the swift house owners. Both flows have been assessed to affect only one of the landscape goals: economic benefits for local people. The impact for each of the two flows is  $+1$ , as these payments generate income for the swift house owner and their workers.

The remaining flows of the sector — **SFF6**, **SFF7** and **SFF8** — were considered to have a neutral impact ( $0$ ) on the landscape goals.

#### 4.4. Oil palm sector

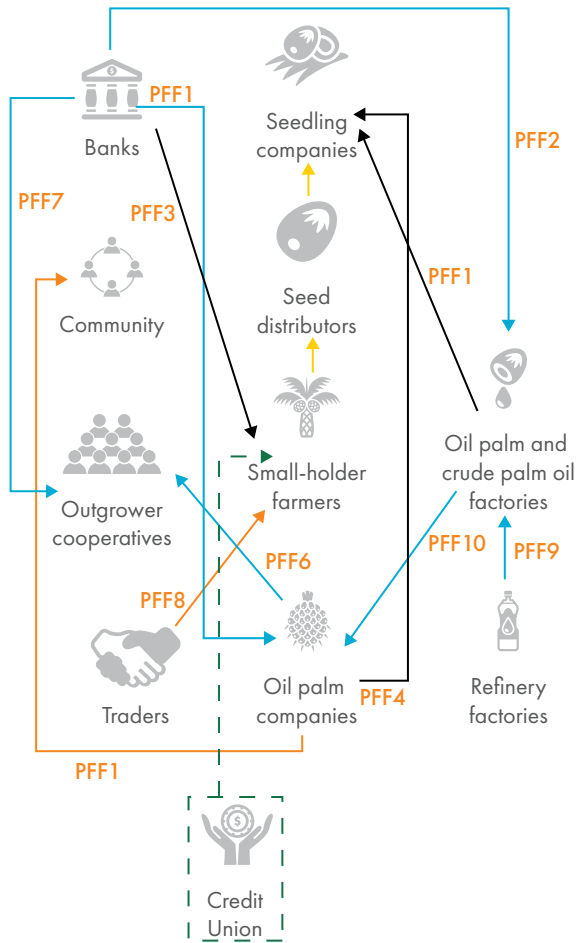
Participants identified eleven main financial flows (**PFFs**) in the oil palm sector in the Gunung Tarak Landscape; see Table 4 and Figure 6 and 7.

Most current flows of the oil palm sector create very negative impacts on the landscape. Of the eleven flows in the sector selected for assessment, three of the flows scored  $-4$  for their overall impacts and only two flows scored net positive impacts.

**Table 4. Main financial flows in the oil palm sector (PFFs), Gunung Tarak Landscape**

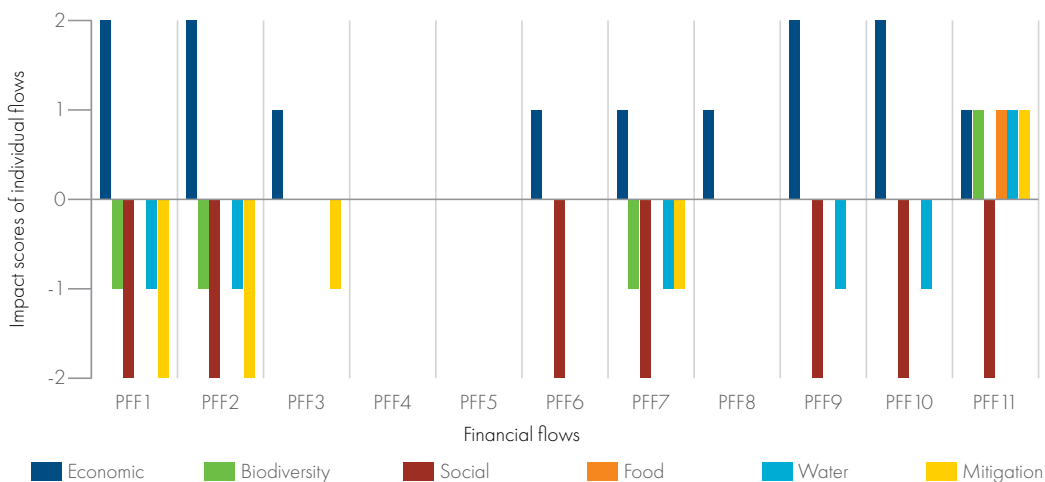
PFF#	Source → Recipient	score
<b>PFF1</b>	Banks → Oil palm companies	$-4$
<b>PFF2</b>	Banks → Oil palm and crude palm oil factories	$-4$
<b>PFF3</b>	Banks → Smallholder farmers	$0$
<b>PFF4</b>	Oil palm companies → Seedling companies	$0$
<b>PFF5</b>	Oil palm and crude palm oil factories → Seedling companies	$0$
<b>PFF6</b>	Oil palm companies → Outgrower cooperatives	$-1$
<b>PFF7</b>	Banks → Outgrowers cooperatives	$-4$
<b>PFF8</b>	Traders → Smallholder farmers	$+1$
<b>PFF9</b>	Refinery factories → Oil palm and crude palm oil factories	$-2$
<b>PFF10</b>	Oil palm and crude palm oil factories → Oil palm companies	$-2$
<b>PFF11</b>	Oil palm companies → Communities	$+3$

**Figure 6. The main financial flows within the palm oil sector (PFFs) in the Gunung Tarak Landscape**



Note: orange = positive impact; blue = negative impact; black = neutral impact; yellow = flow not quantified, green dashed = new flow, identified after interviews

**Figure 7. Financial flows related to palm oil: perceived impacts on landscape objectives within the Gunung Tarak Landscape**



Sector focal group participants estimated that banks loan up to IDR 65 million per ha to cover the cost of establishing an oil palm plantation (PFF1 and PFF2). This means that if companies requested and received loans for all the land in the landscape currently under plantation (142,207 ha), the bank would be lending a total amount of approximately IDR 9.2 trillion to oil palm companies. However, it is not clear what proportion of this potential loan amount was actually requested and received; this needs to be confirmed by further in-depth studies. The interest

rate varies between 11% and 14% per year, with a repayment period of 10 to 20 years. Such loans finance activities such as land clearing, labourers' wages, planting, construction and HCV initiatives.

Some of the constraints in the sector are related to land tenure conflicts. Often, when companies buy a concession licence from the government, tenure conflicts occur due to overlapping land claims. Conflicts arise between companies and communities and between oil palm concessions and mining concessions.

Ministry of Agriculture regulation (*Undang-Undang Republik Indonesia/Indonesian Law No. 39 year 2014*) requires licensed oil palm plantation companies to facilitate the development of local community plantations (*kebun plasma*) that should comprise at least 20% of the company's total cultivated area. The community's plantation, which is built by the company is usually called *kebun koperasi* (outgrower cooperative). Management of the outgrower cooperative plantation is handled by the company, but the members of the cooperative are from the local community.

This obligation for companies to allocate at least 20% of their concession area to outgrowers has also created conflicts. Conflicts between the companies and their outgrower cooperatives arise from the fact that although the bank gives loans to the outgrower cooperatives, these loans are managed by the companies, who ensure repayment by the cooperatives (possibly acting as a guarantor). The lack of transparency in this mechanism often triggers protests from the outgrowers. This mechanism also causes conflict between companies and local communities when the company designates part of its area as an HCV area. The people in the community think that this will reduce their income since if the HCV covers part of their area, the area available for oil palm will be reduced.

The flow in this sector scoring the highest for overall positive impact on the landscape objectives (+3) is the Corporate Social Responsibility (CSR) grants provided by the oil palm company to the community (PFF11). These grants provide local people with additional income opportunities through alternative livelihoods such as ecotourism in GPNP, soybean production in Laman Satong and handicrafts in Matan Jaya. In Laman Satong village the grant is also used for restoration of the local village forest and conserving water, which supports sustainable agriculture. CSR grants also support applications for the Plan Vivo carbon management mechanism. However, participants perceived that these grants sometimes cause conflicts among the villagers due to transparency issues within the villages.

The three flows that scored -4 are bank loans: to oil palm companies (PFF1); to oil palm and crude palm oil factories (PFF2); and to outgrower cooperatives (PFF7). In fact, all three flows have nearly the same impacts and justifications. These flows positively contribute to the local economy since local people who work for the flow receivers get (health) insurance (PFF1 and PFF2) or at least additional income (PFF7). However, all three flows contributed to land clearing, deforestation and reducing local flora and fauna populations. Moreover, as a result of receiving the loans oil palm operations pollute the water with fertilizers and pesticides.

Social capital has also been negatively affected by these flows, but the effects of the three flows differ. In the case of PFF1 and PFF2 loans to oil palm companies ignite conflicts among villages as people compete to get compensation or outgrower programs from the companies. Some village borders cannot be determined due to the difficulty of reaching agreement between villages. The loans to outgrower cooperatives (PFF7) create stress between oil palm companies and cooperatives for the same reasons. Almost all outgrower cooperatives receive loans from banks. *Koperasi Pelang Sejahtera*, for example, received a loan of about IDR 80 billion from Bank Mandiri in 2012, with an interest rate of 1% per year for a period of 9.5 years.

Loans to individual smallholder oil palm farmers; i.e., those with an area less than 25 ha (PFF3), are perceived to have a neutral impact on the combined landscape objectives (0). These smallholders are local people and the flow therefore is perceived to contribute positively to the local economy, but negatively to climate change mitigation, while it is perceived to have a neutral impact on the other objectives.

Banks loan money with certain conditions that must be fulfilled by the smallholder oil palm farmers (PFF3). For example, farmers must register their plantation, and it can be registered only if it is not in a forest area. Usually smallholder oil palm plantations are located in areas that used to be used for shifting cultivation. Since oil palm



farmers cannot get a loan if their plantation is in the forest area, this financial flow should not result in deforestation. However, most plantations are in remote areas and are difficult to reach; thus, monitoring is challenging. As a solution, the bank applies the “cluster system,” where each cluster has a coordinator who takes responsibility for monitoring the other debtors within the cluster.

According to a SFG participant one of the state-owned banks, BNI 46, has allocated about IDR 10 trillion in loans to smallholder farmers in Sungai Melayu Rayak village. Twenty farmers have received loans since 2018. Each loan ranges from IDR 50 to 500 million, with a repayment period of three to five years and a 14% interest rate. The loan is used for land clearing, buying seeds, planting and replanting.

Traders paying smallholder farmers (PFF8) for their production create a flow that has a minor but positive impact on the landscape (+1). The positive score comes from the local people benefiting economically as a result of the flow. Since smallholder farms are often far from the CPO factories, farmers have to sell to traders, who buy the fruits, collect them from the farms and sell them to the factories. This process can save transportation costs for the farmers, but prices paid by the intermediaries are often below market prices. Since farmers lack other options, they usually agree to these terms.

Oil palm companies share the proceeds of the outgrower cooperatives with the members of the cooperative (PFF6). When companies receive a permit to use land, part of it is usually already being farmed by others. These farmers automatically become member of the outgrower cooperatives in the area that the company is obliged to set aside. The company manages the lands and shares the proceeds from harvests with the farmers through the cooperatives. The cooperatives manage the money; the outgrowers can reinvest the money or take the money as they wish. It provides some local people with additional income. In addition, as long as the outgrowers’ plantation is located near the company, the company will accept and buy the fruit. However, transparency related problems may arise due to the manner of sharing the profit, which is generated by the outgrower plantation, but managed by the oil palm company. The score for this flow is –1.

Payments from the refinery factory to the oil palm and CPO factory (PFF9) and from the oil palm and CPO factory to the oil palm company (PFF10) have identical effects on the landscape; each flow has an overall score of –2. Although both flows contribute to benefiting the local economy, since local people work for these companies and earn money, they unfortunately contribute to the conflicts between the companies and outgrowers discussed earlier, which negatively affect social capital. Also, the payments allow companies to continue their production, which pollutes the water.

Flows PFF4 and PFF5 both scored 0.

## 4.5. Mining

Participants identified fourteen main financial flows (MFFs) in the mining sector in the Gunung Tarak Landscape; see Table 5 and Figure 8. All of the flows had a negative score.

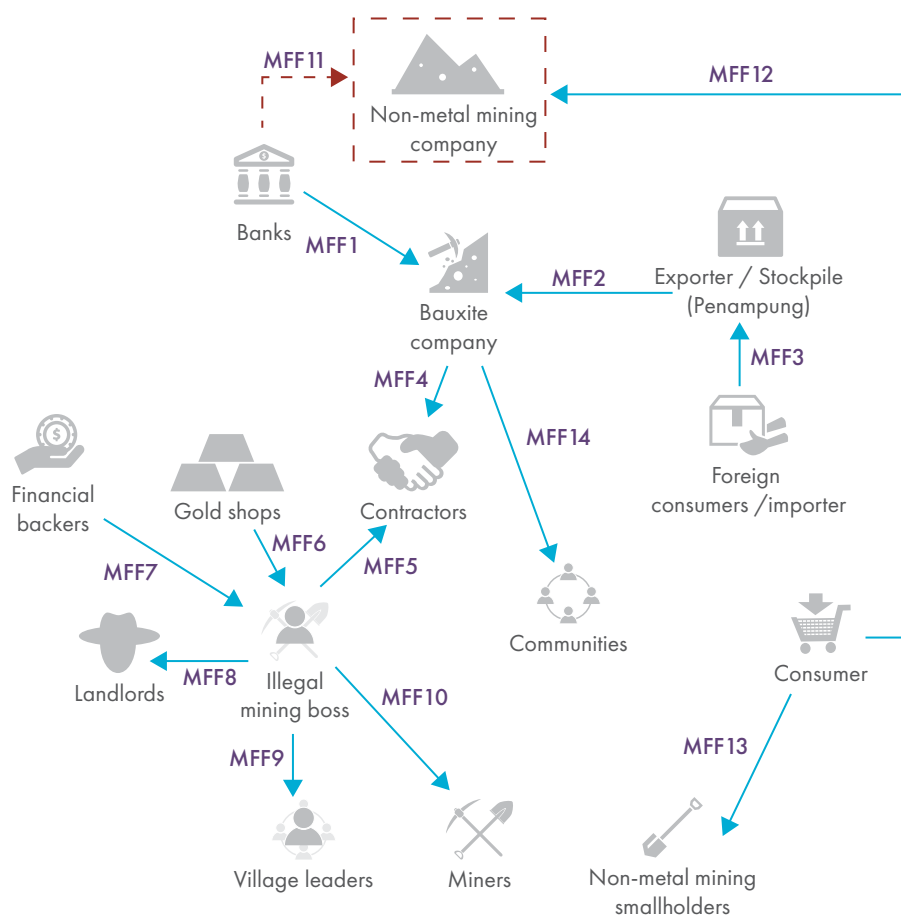
**Table 5. Main financial flows in the mining sector (MFFs), Gunung Tarak Landscape**

MFF#	Source -> Recipient	score
MFF1	Banks → Bauxite company	-4
MFF2	Exporter/stockpile (Penampang) → Bauxite company	-4
MFF3	Foreign consumers → Exporter/ stockpile (Penampang)	-4
MFF4	Bauxite company → Contractors	-4
MFF5	Illegal mining boss → Contractors	-2
MFF6	Gold shops → Illegal mining boss	-4
MFF7	Financial backers → Illegal mining boss	-4
MFF8	Illegal mining boss → Landlords	-4

MFF9	Illegal mining boss → Village leaders	-1
MFF10	illegal mining boss → Miners	-4
MFF11	Banks → Non-metal mining company *	-3
MFF12	Consumers → Non-metal mining company	-4
MFF13	Consumers → Non-metal mining smallholders	-5
MFF14	Bauxite company → Communities	-5

\*Note: while SFG participants identified this Flow MFF11 as a significantly negative flow, during interviews it turned out that this flow does not exist. The score reflects the impacts perceived from the mining activities, but the funds for those activities probably come from a different (not-identified) source.

Figure 8. The main financial flows within the mining sector (MFFs) in the Gunung Tarak Landscape



Note: blue = negative impact; red = flow MFF11 does not exist

Not one flow of those selected for the mining sector focal group discussions in the GLT was perceived to have positive or even neutral impacts on the landscape goals. The flows that are perceived to have the greatest negative impacts are those from consumers to the smallholder non-metal miners (illegal) (MFF13) and from the bauxite company to the community (MFF14), each scoring an overall -5. Although both flows have a positive impact on the local economy – either by local people being owners of mining businesses, working at the mining company or selling their land to the miners – they have negative effects on forests and biodiversity through deforestation and water pollution.

Payments for goods from consumers to smallholder non-metal miners (MFF13) also contribute to tenure conflicts between miners and other stakeholders (such as the national park and local government). Similar disputes have arisen due to land payments from the mining company to the community (MFF14), in cases where villagers' land claims overlap mining locations. In 2018, PT Laman Mining spent millions of U.S. dollars to pay for communities'

land in Laman Satong. The companies pay to get ownership of the land formerly owned or managed by the community so they can change the land use to mining from other land uses; for example, rice. In such cases, they don't need the community's consent since they have paid for the land. However, the community's consent is required if the company wants to get its AMDAL (Analysis Mengenai Dampak Lingkungan/environmental impact analysis) approved. This may lead to companies trying to influence (bribe) village representatives to get their consent. These land payments negatively affect food and water security through paddy fields being converted to mining locations and water resources for local consumption being reduced.<sup>12</sup>

Two flows have slightly less negative effects: **MFF1** and **MFF2**. Bank loans to bauxite companies (**MFF1**) contribute to creating economic benefits for local people, since workers of the company get insurance. Other impacts of the loan are negative; for example, in the Matan Jaya community in the Kayong Utara regency, wildlife habitats are destroyed in the area where mining operations occur; land ownership conflicts arise among the villagers who want to sell their lands to the company; sustainable agriculture lands are used as a mining road; mining has polluted water resources; and deforestation occurred within the concession area. The total score for **MFF1** is **-4**.

Similar negative effects, also scoring **-4**, are created by the financial flow from exporters to the bauxite company (**MFF2**). This financial flow is important for the company to be able to continue the mining business. There are two differences between **MFF1** and **MFF2**, however. Instead of conflicts related to land ownership conflict this flow stimulates unhealthy competition among villagers to get jobs in the stockpile. In addition, carbon emissions are caused not only by deforestation but by the transportation used in mining and export.

Bauxite companies pay for services to contractors (**MFF4**), who do work such as land clearing, office building, and transportation. Currently there exists only one bauxite company that hires these contractors. The flow has one positive impact: additional jobs for local people as (informal) workers. However, the flow's remaining impacts are negative and range from land clearing, deforestation, water pollution by tilling, sustainable agriculture fields used as a mining road, and competition among the villagers to get these jobs. The flow's net score is **-4**. Basically, this flow is made possible by the bank loans to the bauxite company (**MFF1**) and payments from exporters to the bauxite company (**MFF2**) and its impacts are the result of those flows.

### Illegal mining

In the mining sector of the GTL six of the fourteen selected flows are directly related to illegal mining activities. There are approximately 40 gold-mining machines in the GTL and every machine can produce 15 grams of gold per day or 450 grams per month. With a gold price of IDR 500,000 per gram, the total revenue obtained is estimated around IDR 9 billion per month or 108 billion per year.

Four of these flows — **MFF6** (Gold shops to illegal mining bosses, for goods payment); **MFF7** (Financial backers to illegal mining bosses); **MFF8** (Illegal mining bosses to landlords, for rent); and **MFF10** (Illegal mining bosses to miners) — score **-4** for their overall impact on the landscape objectives.

**MFF7** represents a loan from a financial backer to an illegal mining boss. The financial backer is usually a private-sector person. The mining boss is a person who hires workers and owns mining machines. Mining bosses have agreements (usually unwritten) with financial backers about profit sharing. Because of the financial backer, the mining boss is able to provide workers with money for their daily needs, food and equipment.

**MFF8** is a land rental payment by the mining boss to the "owner" of the land. Although the illegal gold mining is located in production forests owned by the national government, four local people claim the area as their land. According to regulation, forest area cannot be owned by a person, and there cannot be a legal claim on this land; in spite of this, there are still people who claim ownership of these lands and receive "rental" payments from the illegal mining bosses.

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<sup>12</sup> Evaluating the extent to which these payments compensate for social and environmental damage would require an in-depth analysis. The GTL LAFF did not focus particularly on assessing the effect of compensation, but if this assessment is needed the LAFF methodology could be adapted to carry it out.

All four of these flows positively affect the local economic situation since some of the local people work for the miners. In fact, these flows all scored the same, with identical justifications. All four flows lead to land clearing and deforestation, which reduces wildlife populations in the area. The water of the rivers and ponds at the former mining sites, which are used by local people, have been severely polluted. Intense, sometimes violent, conflicts occur between the villagers as they compete for the gold.

The last two flows directly related to illegal mining are payments from illegal mining bosses to the contractors (**MFF5**) and from the illegal mining bosses to village leaders (**MFF9**). **MFF5** provides jobs; for instance, operating heavy machinery, which benefits local people economically. However, operations by contractors contribute to land clearing in the concessions and deforestation, which reduces wildlife populations and pollutes river waters. The total score for **MFF5** is **-2**.

**MFF9** is actually a bribe, also known as a “tax,” paid to the village leader. The boss pays IDR 200,000 per machine. There are 40 machines in the area, so the “tax” is IDR 8 million per month or IDR 96 million per year. The total score for **MFF9** is **-1**.

Two flows in this sector may be indirectly linked to illegal mining: **MFF3** (Foreign Consumer/Importer (China) to Exporter/Stockpile (Penampung) (**-4**); and **MFF12** (Consumer to non-metal mining company, also scoring **-4**). Both flows are payments for goods by consumers and both exhibit one positive impact: jobs for local people and insurance for those who work at the company. However, **MFF3** contributes to the destruction of important habitat and to the reduction of flora and fauna populations. It also pollutes water resources, which means that paddy fields cannot be used (all these impacts occur in Matan Jaya). The flow also creates competition among villagers for jobs in the stockpile.

**MFF12** contributes to deforestation and land clearing and to reduced water resources for local people. In Pam-pang Harapan it also ignites disputes between villagers and the company due to environmental issues. In the Pawan River area, about 20 business owners have sand mining boats. Each boat with two workers can produce IDR 1 million worth of sand per day using simple machinery. That means that the estimated size of this business is IDR 7.3 billion per year. Focal group members were not sure whether these business owners have the license required for sand mining in rivers.

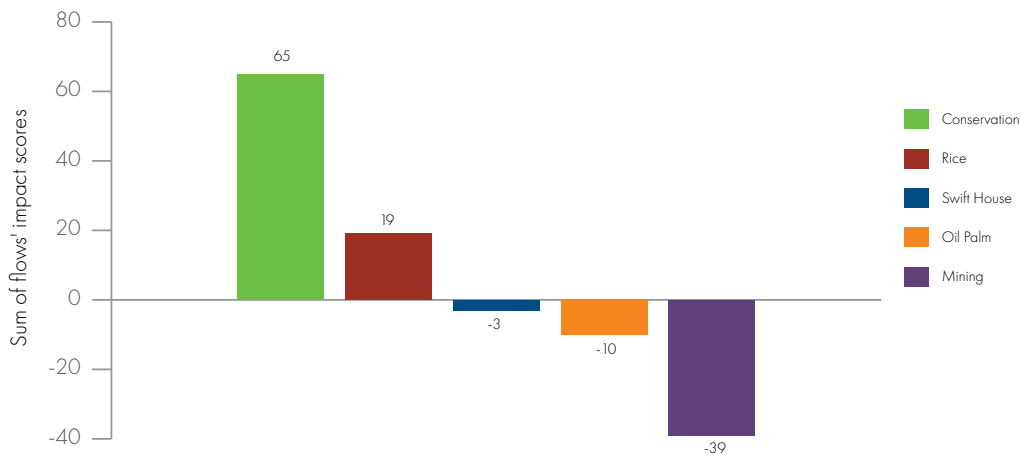


## 5. Discussion

The results of the landscape assessment of financial flows in the GTL draw a vivid picture of the flows in each sector. For example, the conservation sector is considered to positively contribute to the landscape goals, while the mining sector shows no financial flows with an overall positive score. The oil palm sector also has a very negative impact on the landscape. The rice sector flows exhibit overall positive impacts, but as pointed out in the results section this is mostly due to these flows benefiting local people economically.

This section of the report focuses on specific actors that have a significant role or influence in the GTL. It also examines the separate sectors as well as their trans-sectoral interactions, seeking to identify possible ways to improve financial flows' influence on GTL objectives. In general, the conservation sector was reported to contribute more positively to the different landscape objectives than the other sectors, while oil palm and mining were perceived to have significant negative impacts on those objectives (See Figure 9).

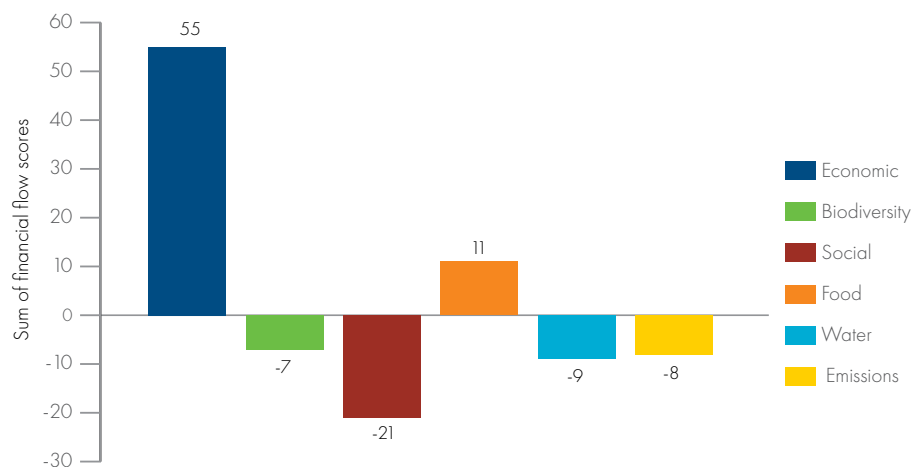
**Figure 9: Sum of the impact scores adjusted for 10 assessed financial flows per sector<sup>13</sup>**



<sup>13</sup> For this, the average per flow was calculated and then multiplied by 10

Results also show that of the landscape objectives, the one oriented towards economic benefits is well financed, food security is well attended too, mainly due to investments in conservation and rice, while the other objectives require measures to compensate for the negative effects of the existing investments (Figure 10). Particular oil palm and mining are perceived to negatively affect social capital in the landscape, causing conflicts between stakeholders, among others due to unclear land boundaries and little transparency in transactions. These two sectors also are perceived to be responsible for most of the negative effects on the water security and emission objectives, while biodiversity is threatened by these same sectors as well as by the swift house activities.

**Figure 10. Financial flow impacts on landscape objectives**

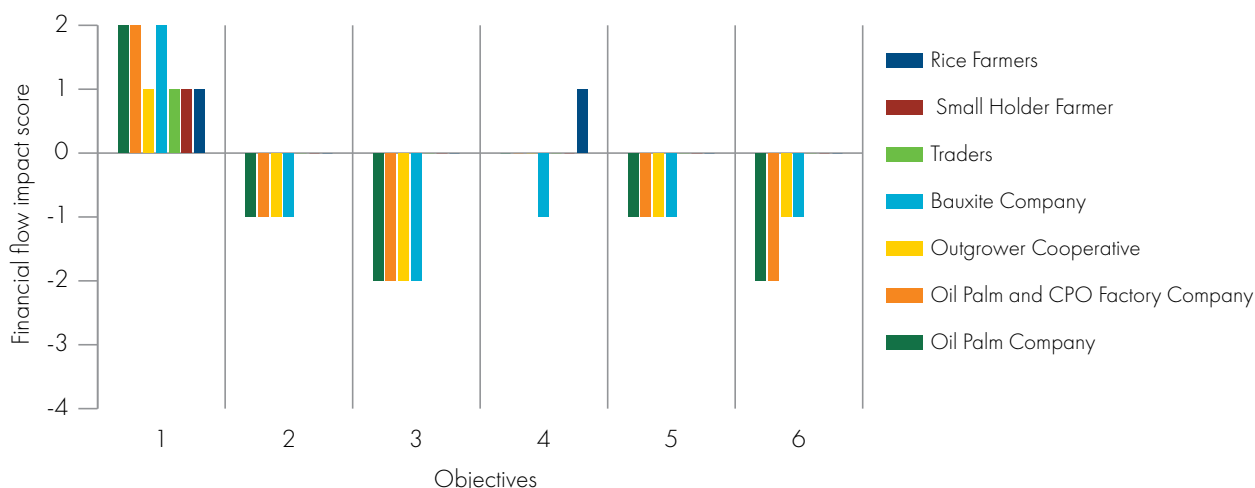


Looking at the landscape overall, we also were able to identify several actors that were influential in more than one sectors and therefore any change in their behavior could have big impact on the landscape as a whole. Of these, we discuss banks and traders in the following Sections (5.1 and 5.1 respectively). In addition, the ministry of agriculture (Section 5.3) and mining companies (Section 5.4) are actors with great potential to influence achievement of the landscape objectives if they change some of their behavior, and these are discussed as well. Although the oil palm sector has great negative impacts and there is a potential to decrease these, we already see ongoing efforts for improvement, some of which have been reported on in the results section and these are not further discussed here. Only where actors in the oil palm sector depend on banks for their finance they are mentioned in Section 5.1.

## 5.1. Banks

Three of five sector focal groups identified financial flows involving bank services as key. Figure 11 shows all the key financial flows from banks in the GTL to six recipients and the impacts of these flows on the landscape objectives. For example, all flows from banks had positive impacts on landscape objective 1 (creating economic benefits for local people). In all of the sector focal groups that identified banks as a source of financial flows these flows were perceived to have positive impacts on this landscape objective through facilitating additional income by financing economic activities. For rice farmers, bank flows were also perceived to have a positive impact on landscape objective 4 (food security), since the funds are used for to support rice production, both for sale and consumption.

**Figure 11. Impacts on landscape objectives of all financial flows originating from banks to different actor groups in the different sectors analyzed.**



One of the banks, BRI, provides KUR (*Kredit Usaha Rakyat*/micro credit program) between IDR 25 million and IDR 500 million per loan; the national government subsidizes the interest payments up to a certain amount. (While regular interest on loans is 10–14%, loans through the KUR have an interest rate of only 7% and the banks receive the difference in interest from the government as a subsidy.) This type of credit has been promoted by the Indonesian government since 2012 and is aimed at providing access to bank finance for people who are often denied it. There are three types of KUR:<sup>14</sup>

- KUR Mikro, working capital credit and/or investment credit, with a limit of IDR 25 million;
- KUR Ritel, working capital credit and/or investment for individuals with an existing business, with a lending limit of IDR 25–500 million; and
- KUR TKI (*Tenaga Kerja Indonesia – Indonesian Manpower*), to finance Indonesians who want to work abroad, with a maximum of IDR 25 million per person.

To obtain KUR up to IDR 25 million no collateral is needed and the subsidy from the government makes it very accessible to the local people.

In Gunung Tarak Landscape BRI provides microcredit, mostly to the rice and rubber sectors. It would be interesting to find out more about the conditions imposed by the bank when it provides these loans; for example, what kind of environmental, social and governance (ESG) principles it applies, if any. These principles could influence the way that the money is used, and even how it is repaid. It has been noticed that local people in the GTL often use loans as grants, which requires some attention. Perhaps this is an issue of lack of financial literacy, which could be fixed by training/financial capacity building for local people.

Oil palm smallholders have access to loans from banks. Loans come with certain conditions; these were not identified for the rice farmer loans, but they may be similar to those mentioned in the previous paragraph. The smallholder’s oil palm plantation must be registered and the smallholder must possess a registration letter from the regency agency that confirms that the plantation is not in the forest area. This condition seems to be working to support landscape objectives, since the financial flows of loans to smallholder plantations were not perceived by focal group participants to contribute to deforestation. A recent report by TBI,<sup>15</sup> however, signals that most smallholders do not have access to formal loans due to this requirement, and must finance their plantations with their own money; they also use poor farming practices (non-certified seeds, poor maintenance practices).

14 Source: <https://bri.co.id/kur>.

15 Irawan, U.S. and E. Purwanto, 2020. *Profile of Smallholder Oil-palm Plantation in Ketapang District, West Kalimantan*. Bogor: Tropenbos Indonesia.

Bank loans to the remaining three oil palm actors — oil palm companies (PFF1); oil palm and CPO factories (PFF2); and outgrower cooperatives (PFF7) — contribute to improvement of the local economy, yet they are perceived to have significantly negative effects on the other five landscape objectives, although in some cases palm oil companies have been willing to contribute to conservation programs such as KEE and HCV. It is unclear which banks lend to the oil palm sector; international banks may contribute as well as Indonesian ones. Oil palm companies and outgrower cooperatives pollute the water and contribute to deforestation and loss of biodiversity. Although the loan money also may be used for HCV area allocations, this hardly compensates for forest clearing and water pollution, as the damage is often irreversible. Currently, a national moratorium prevents plantation expansion and prohibits licences from being issued for new oil palm businesses, but bank loans to the palm oil companies are still perceived to cause negative impacts. This suggests that when it comes to lending to the oil palm sector, especially to the bigger companies, ESG principles are not in place, are weak or are poorly monitored.

Although negative impacts on the environment from the oil palm business are hardly news, the financial flow assessment brings up the issue of social capital (landscape objective 3). Loans to the oil palm plantations allow companies to purchase concessions, which ignites disputes among villagers as they compete for compensation or for outgrower programs offered by the companies. In addition, borders between the villages and the plantation often cannot be agreed on.

Another issue related to social capital is caused by bank loans to the outgrower cooperatives (PFF7), since the money loaned to the cooperative is managed by the oil palm company. Management of these outgrower cooperatives is also handled by the company. Conflicts between cooperatives and the companies have come up; this is thought to be caused by a lack of transparency of companies when managing the cooperative's loan. In addition, misunderstandings often arise due to the lack of financial literacy of the cooperative members. They frequently lack the understanding that the loan must be paid back in installments along with the interest, and that it will take some time before they can receive the actual profit of their harvest. The initial harvest usually covers only the first installment and the interest.

It could be explored whether these social capital issues might be managed or prevented by the bank applying certain principles or conditions for the loans. The same conditions could possibly be applied to the loans to the bauxite company (MFF1).

Since the banks have the power to decide how and where their loans can be used, they also make educated decisions not to invest in high-risk businesses, such as swift nest production or non-metal mining companies (all of the latter seem to be illegal). Non-metal mining is estimated to increase in the coming years; the GTL is developing, infrastructure is being built and sand is often used for construction. Since there is a demand, sand mining continues even without being licensed, and miners find investors other than financial institutions. Perhaps if the licences were provided to the miners with specific conditions and principles to require mining practices that could reduce or eliminate negative impacts, the banks would lend to these companies. If licence requirements and bank policies were coordinated, such investments could support landscape development in a way that adheres to climate change mitigation and preservation of local biodiversity. It would also contribute to the local (legal/official) economy, by taking the actors who now invest in illegal activities out of the sector.

## 5.2. Traders

Traders play an important role in all four selected production sectors of the GTL: rice, swift houses, palm oil and mining. They are often intermediaries between the producer and the distributor or exporter. Traders provide multiple services, from providing loans to selling or renting equipment. It is in the traders' best interest for the producers to keep producing goods that they then can trade. The financial flows involving traders score positively overall, but potentially they could contribute even more positive impacts to the landscape objectives.

For example, oil palm traders facilitate smallholder oil palm farmers (plantations of less than 25 ha) by purchasing fruit from them (PFF8). This flow supports farmers because these small farms are often located in remote areas far from the CPO factories, and transporting the fruit would be costly. Although this mechanism is considered to reduce costs for the farmers it also keeps these smallholders far from the market. From one point of view farmers



might benefit from this flow, but it would be interesting to find out the prices that the traders pay to the farmers and compare it to other mechanisms and ways of selling.

Traders of rice also serve as small-scale distributors of fertilizers, pesticides, seeds, etc., which they buy from the suppliers and sell to the rice farmers. It is not clear, however, which source is more convenient for the farmers to buy agricultural goods from: the traders or the actual suppliers. If it is simply more convenient for the rice farmers to buy supplies from traders due to their distance from the market, there could be an opportunity for another supplier, such as government, to provide organic supplies (see **RFF1**).

Perhaps the goods that traders sell could be partly determined by the banks, since traders working in the rice sector (among other sectors) are sometimes provided with microfinancing by the bank (**RFF8**). Traders are known to provide loans for the rice farmers before the harvesting time, with a condition that the rice harvested will be sold to the trader at a previously agreed price. Banks could, perhaps, play a role in designing these loans.

### 5.3. Ministry of Agriculture rice program

The flow from the national government to rice farmers groups (**RFF1**) represents two programs meant to facilitate rice growers so that they can produce better yields. The programs, provided by the Ministry of Agriculture (MOA), provide farmers with money that can be used only for purchasing farming equipment. The equipment must be acquired from assigned suppliers; in some cases packages of supplies reach farmer groups directly from the supplier. In 2018, IDR 10.68 billion was distributed to all districts in Ketapang Regency through this program.

However, there is room for improvement. Although the equipment and supplies are indeed handy, they often don't reach the farmers' groups until after the period when they are needed. The poor timing, along with incompatibility with farmer's needs, could be adjusted based on the local context. Adjustments to improve timing, or to provide equipment and supplies that better suit farmer groups could contribute to increasing the quality and quantity of the farmer's yields, among other objectives.

MOA's program also inspires farmers to adapt their farming practices and materials to become more sustainable. For example, the program's equipment and supply packages consist of organic fertilizers and pesticides. The program encourages people to optimize their current working land rather than opening up new fields. This governmental involvement has also contributed to reducing or even halting shifting cultivation by the farmer groups who use the program.

### 5.4. Mining

The mining sector has legal and illegal financial flows. All mining activities in GTL create a negative impact on biodiversity, climate change mitigation and social capital. Bauxite companies are perceived to harm farming activities as well; for example, sustainable agricultural land (designated by the local government of Kayong Utara) was converted from paddy fields to a mining road in Matan Jaya. These impacts could be reduced or controlled by those who invest in the mining companies, such as the banks. As already discussed, banks are responsible for quite a few financial flows in the landscape and only a few of the loans are known to have environmental, social and governance (ESG) terms or conditions. Perhaps loan conditions related to the environmental and social impacts created by the mining companies could be put in place, or, if they already exist, made stricter in order to create better outcomes from these flows. In addition, the monitoring of these impacts should be improved.

There are 1.3 million ha of concessions designated for mining in the GTL, and the large mining companies working in these concessions are most likely registered. Legally registered companies should be easier to influence through certain measures, such as loans provided with ESG conditions, or funding being withheld if the company does not comply with the ESG standards.

When looking at the financial extent of the legal mining impacts, it is obvious that there is room for improvement. Regulations by government and standards required by investors could be potential ways to introduce some control. A significant power over the operations of legal mining companies also lies in the hands of the exporters. By

coordinating their requirements exporters, financiers and government could exert considerable pressure on the mining industry to improve their practices and reduce their negative impacts on the environment.

Illegal mining activities are just as damaging to the GTL objectives as legal mining is, and are less likely to be regulated. Most of the illegal mining extracts sand or gold. Sand extraction is usually done in the rivers, while illegal gold mining often takes place in production forest areas. Even though the production forests are owned by the government there are still people who claim ownership of these lands and receive “rental” payments from the illegal mining bosses.

As long as local people benefit from these rental payments, they will probably not inform the government about the illegal mining activity taking place or take any actions against it. Probably the most reasonable solution is to provide people with information about the harmful impacts of mining and show them that in the long run they do not benefit from renting “their” lands.

For both gold and sand mining the main driving force is the demand and the fact that miners are able to find financial backers. Since sand demand is increasing due to the development of GTL, a possible way to reduce the harmful impacts of illegal sand mining is to legalize it. Legalization must require that activities adhere to high ESG standards and must restore any existing damage.



## 6. Conclusions

The LAFF process in the Gunung Tarak Landscape brought numerous insights into the way that funds flow between actors and the impact that these flows have on social and environmental landscape objectives. Although the results lack detail on the magnitude of the flows it is still clear that private-sector flows within and into landscape, such as those from banks, are much larger than public flows. These privately sourced funds are perceived to pose a much more negative impact on the landscape goals. Financial flows originating from public sources have only positive or neutral impacts on landscape objectives. Almost all the assessed financial flows — both private and public — are perceived to have positive impacts on local economic development. Such strong positive impacts can potentially distract people from noticing the negative aspects of those flows.

The LAFF approach allowed participants to identify those financial flows that have positive impacts on the landscape and could potentially be scaled up, and the flows that affect landscape objectives in a negative way, but could be mitigated or redirected.

Also, several of the financial flows that already have positive impacts on the landscape could possibly be enhanced. In particular, the KUR micro credit bank loans, supplemented by the government and MOA rice programs, show potential and could be expanded. KUR allows companies and individuals who usually cannot get financing to obtain loans with affordable terms. These finances are perceived to have positive impacts on the landscape. This type of funding could have even more positive impacts if it was scaled up, utilized by other banks, and linked to ESG criteria when assessing beneficiaries' activities.

The MOA rice programs have also exhibited positive impacts. These programs encourage people to switch their rice-growing practices from conventional shifting cultivation to more sustainable approaches. Since these programs are provided to farmers' groups, they could also be a convenient access point for deepening farmers' knowledge of sustainable cultivation; they could also perhaps provide sustainable/local inputs and other opportunities for initiatives or businesses. The MOA rice programs could be improved, scaled up and most importantly timed more accurately for even better outcomes. The programs could also be connected to loans that support sustainable land uses.

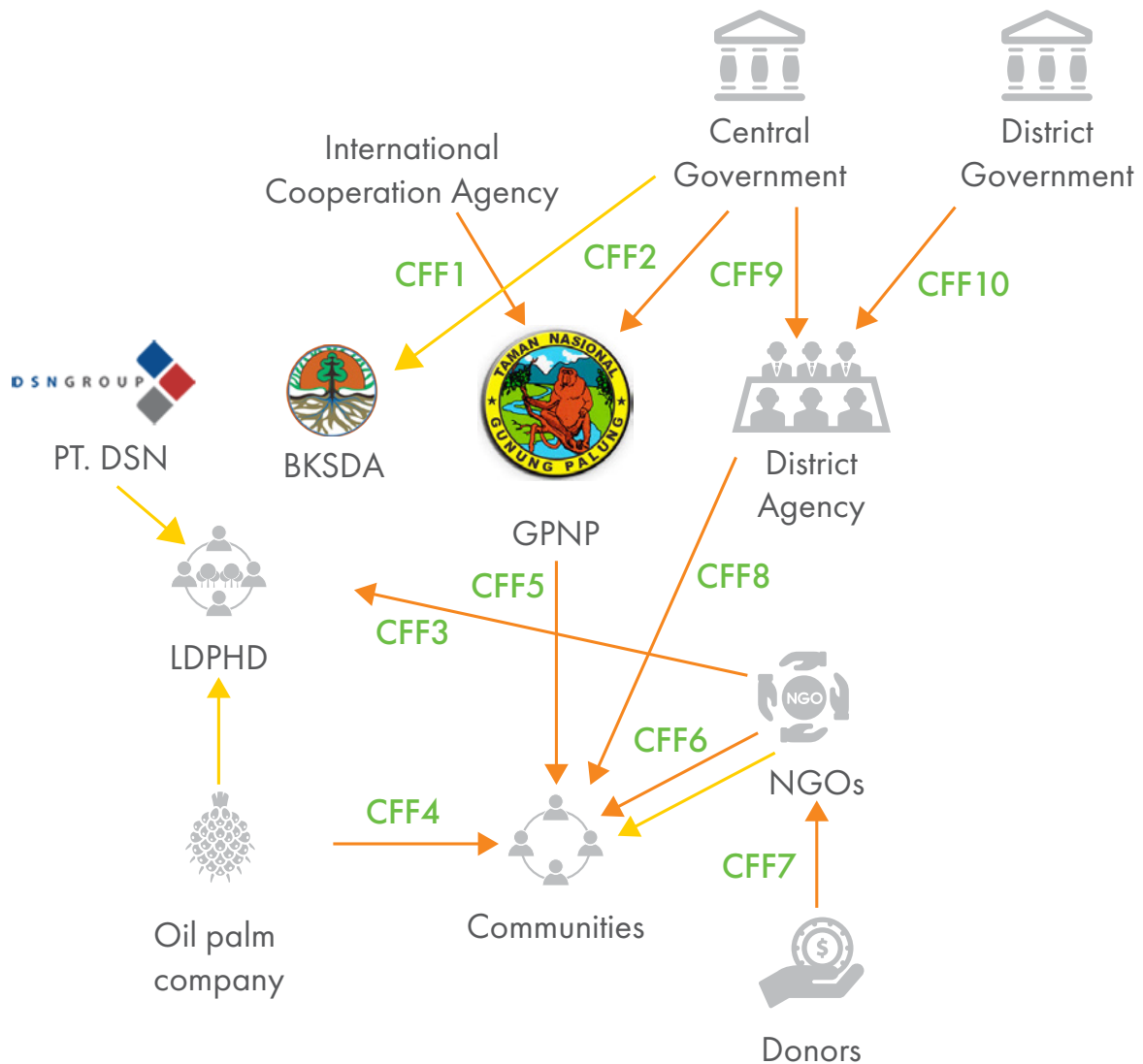
Most private flows identified in the SFGs were considered to be significant in magnitude and in their negative impacts on the landscape objectives. Banks are involved in every key sector assessed, and all of the flows originating from banks have positive impacts on the local economy (landscape objective 1); one financial flow originating from banks in the rice sector (**RFF1**) also has a positive impact on food security (landscape objective 4). All other landscape objectives are negatively affected by these bank loans. An obvious way to change such negative impacts is to implement or strengthen existing ESG principles related to the loans. Positive impacts on environmental objectives could also be improved by creating loans with terms and conditions that require sustainable practices.

Moreover, follow-up interviews revealed that credit unions and microfinance facilities play a very important role in this landscape; these have not been assessed in depth. Some of them have programs that strengthen the financial literacy of the beneficiaries and/or provide loans only to agricultural activities considered to be sustainable. These programs, along with other financial technology options, may be able to create a new financial flow, possibly connected to the banks, that has effective safeguard systems that can have very positive impacts on the landscape.

The growing businesses of swift house production and sand mining may possibly soon be formalized. It would be beneficial to keep an eye on these emerging sectors, and to have ESG systems in place when such enterprises become attractive for formal investors.

Annex 1: Financial flow maps per sector with their respective scoring tables.

Conservation sector financial flow map



Orange = positive impact; yellow = flow not quantified

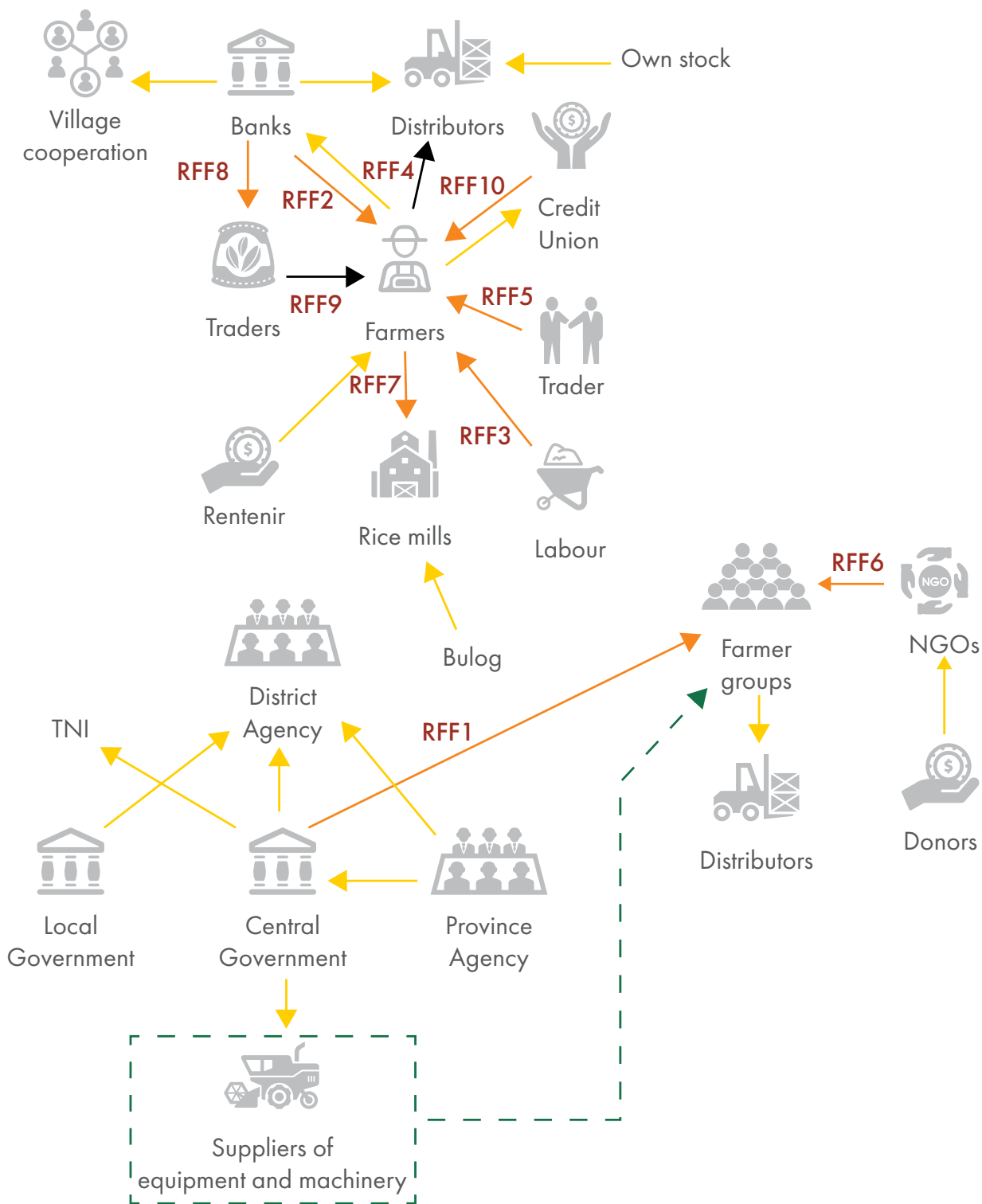
## Flow Scores (Conservation sector)

FF#	Source -> Recipient	Transfer	Absolute size	creates economic benefits for local people (income, employment)	contributes to restoration of landscape biodiversity	strengthens social capital (include def)	contributes to food security	contributes to secure access to good water	contributes to clean energy	Score
CFF1	International Cooperation Agency -> GPNP	Grant	Rp. 13,000,000,000,- (2013 -2018)	1	2	2	1	0	2	8
CFF2	Central Government - GPNP	National government budget	Rp. 13,1 billion (2017)	1	2	1	1	2	2	9
CFF3	NGO - Forest Village Management Organization	Grant		1	1	1	1	1	1	6
CFF4	Oil Palm Company -> Community	Grant		2	1	1	1	1	1	7
CFF5	GPNP -> Community	Grant		1	1	1	1	1	1	6
CFF6	NGO -> Community	Grant	IDR 65,331,100 (ASRI/2016), IDR 39,253,500	1	1	1	1	1	1	6
CFF7	Donor -> NGO	Grant	\$ 317,774.13 (YP/2017), Rp. 5 billion (TI/2017 - 2021) , Rp. 12,297,078(ASRI/2016), IDR 5,572,227(ASRI/2017), IDR 8,871,768 (ASRI/2018)	2	2	2	1	1	2	10
CFF8	District Agency -> Community	District government budget		1	1	1	1	1	1	6
CFF9	Central Government -> District Agency	Sharing of reforestation fund		0	0	0	0	0	1	1
CFF10	District Government -> District Agency	District government budget		1	1	1	1	1	1	6

**List of Donors in the landscape**

No.	Donors
1	USAIDS
2	Ford Foundation
3	JICA
4	ABAXIS
5	The Waterloo Foundation
6	Health in Harmony
7	Yale-New Haven Hospital
8	Dining for Women
9	Johson n Johnson
10	Google
11	The Arcus Foundation
12	Disney Wildlife Conservation Fund
13	Conservation, Food, and Health Foundation
14	Woodland Park Zoo
15	Sea World Busch Gardens,
16	Prince Bernhardt Nature Fund
17	the National Science Foundation
18	Arcus Foundation
19	Whitley Fund for Nature

Rice sector financial flow map



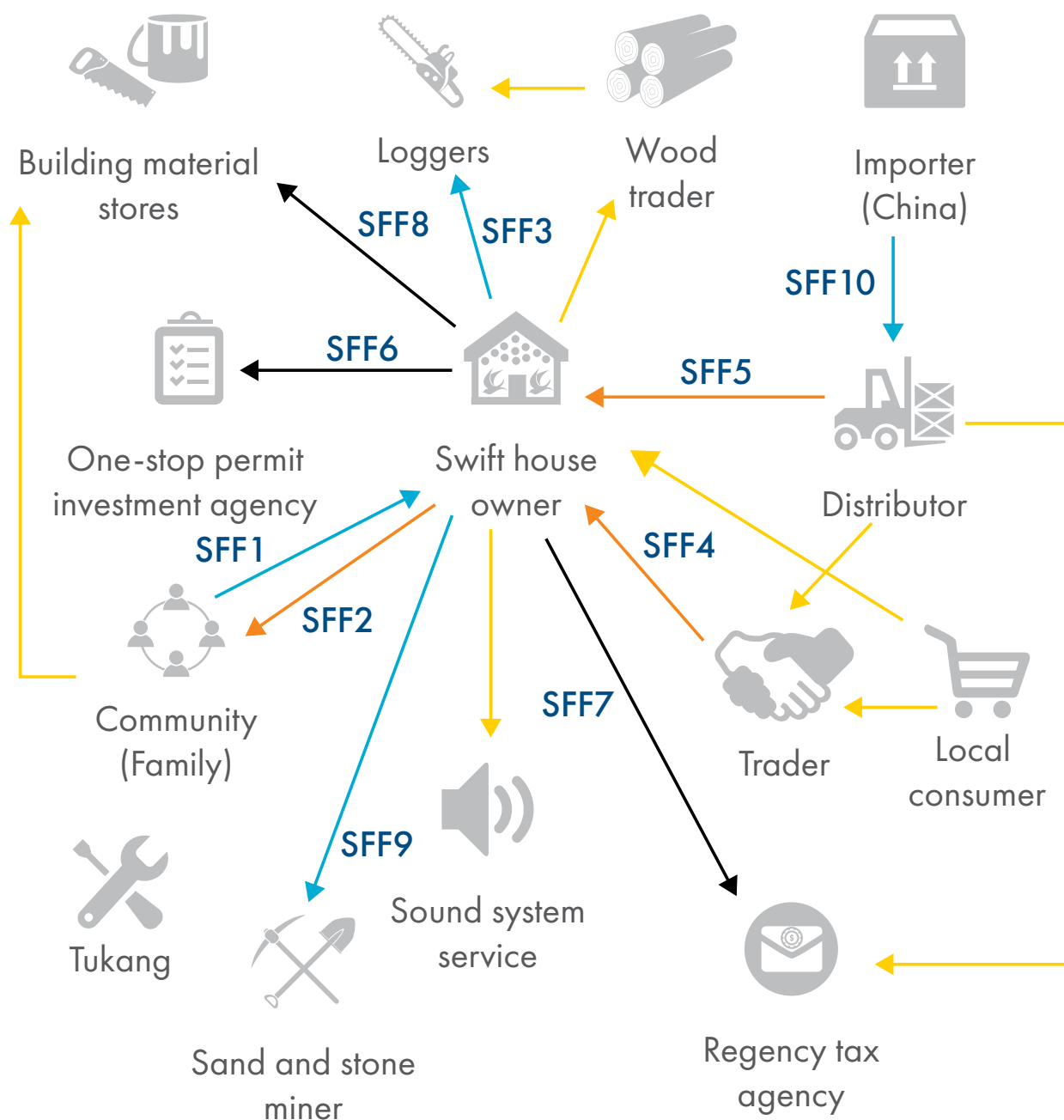
Orange = positive impact; black = neutral impact; yellow = flow not quantified, green dashed = new flow, identified after the interview



**Flow Scores (Rice sector)**

FF#	Source -> Recipient	Transfer	Absolute size	creates economic benefits for local people (income, employment)	contributes to restoration of landscape biodiversity	strengthens social capital (include def)	contributes to food security	contributes to secure access to good water	contributes to clean energy	Score
RFF1	Central Government -> Farmers Group	Central Government Budget	IDR 10,488,298,000 (Ketapang District)	1	1	1	2	0	0	5
RFF2	Bank -> Farmers	Loan	IDR 25,000,000	1	0	0	1	0	0	2
RFF3	Farmers -> Labour	Wage payment	?	1	0	0	1	0	0	2
RFF4	Farmers -> Distributor	Goods payment	?	0	0	0	0	0	0	0
RFF5	Trader -> Farmers	Loan	?	1	0	0	0	0	0	1
RFF6	NGO -> Farmers Group	Grant	?	1	1	1	1	0	0	4
RFF7	Farmers -> Rice milling	Service payment	IDR 28,000,000,000	1	0	0	0	0	0	1
RFF8	Bank -> Trader	Loan	?	1	0	0	0	0	0	1
RFF9	Trader -> Farmers	Goods payment	?	0	0	0	0	0	0	0
RFF10	CU -> Farmers	Loan	?	1	0	1	1	0	0	3

Swift House sector financial flow map

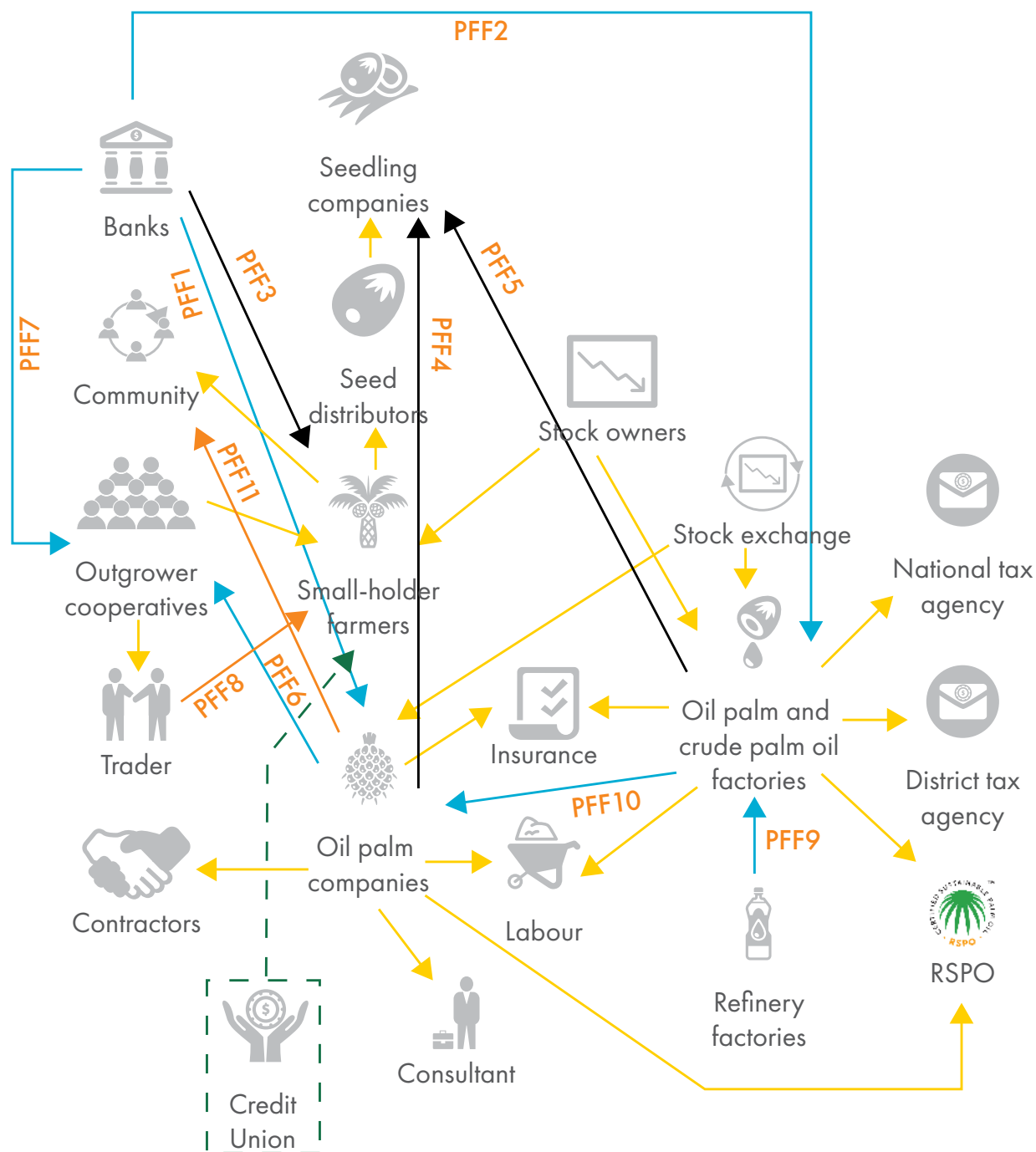


Orange = positive impact; blue = negative impact; black = neutral impact; yellow = flow not quantified

**Flow Scores (Swift House )**

FF#	Source -> Recipient	Transfer	Absolute size	creates economic benefits for local people (income, employment)	contributes to restoration of landscape biodiversity	strengthens social capital (include def)	contributes to food security	contributes to secure access to good water	contributes to clean energy	Score
SFF1	Community (Family) -> Swift House Owner	Investment	?	1	-2	0	0	0	-1	-2
SFF2	Swift House Owner -> Community	Grant	?	0	0	1	0	0	0	1
SFF3	Swift House Owner -> Logger	Goods Payment	?	1	-2	0	0	0	-1	-2
SFF4	Trader -> Swift house Owner	Goods Payment	?	1	0	0	0	0	0	1
SFF5	Distributor -> Swift House Owner	Goods Payment	?	1	0	0	0	0	0	1
SFF6	Swift House Owner -> One Stop Permit Investment Agency	Permit Payment	?	0	0	0	0	0	0	0
SFF7	Swift House Owner -> District Tax Agency	Tax	?	0	0	0	0	0	0	0
SFF8	Swift House Owner -> Building Material Stores	Goods Payment	?	0	0	0	0	0	0	0
SFF9	Swift House Owner -> Sand and Stones Miner	Goods Payment	?	1	-1	0	0	0	0	0
SFF10	Distributor -> Importer	Goods Payment	?	1	-1	0	0	0	-1	-1

Oil Palm sector's financial flow map

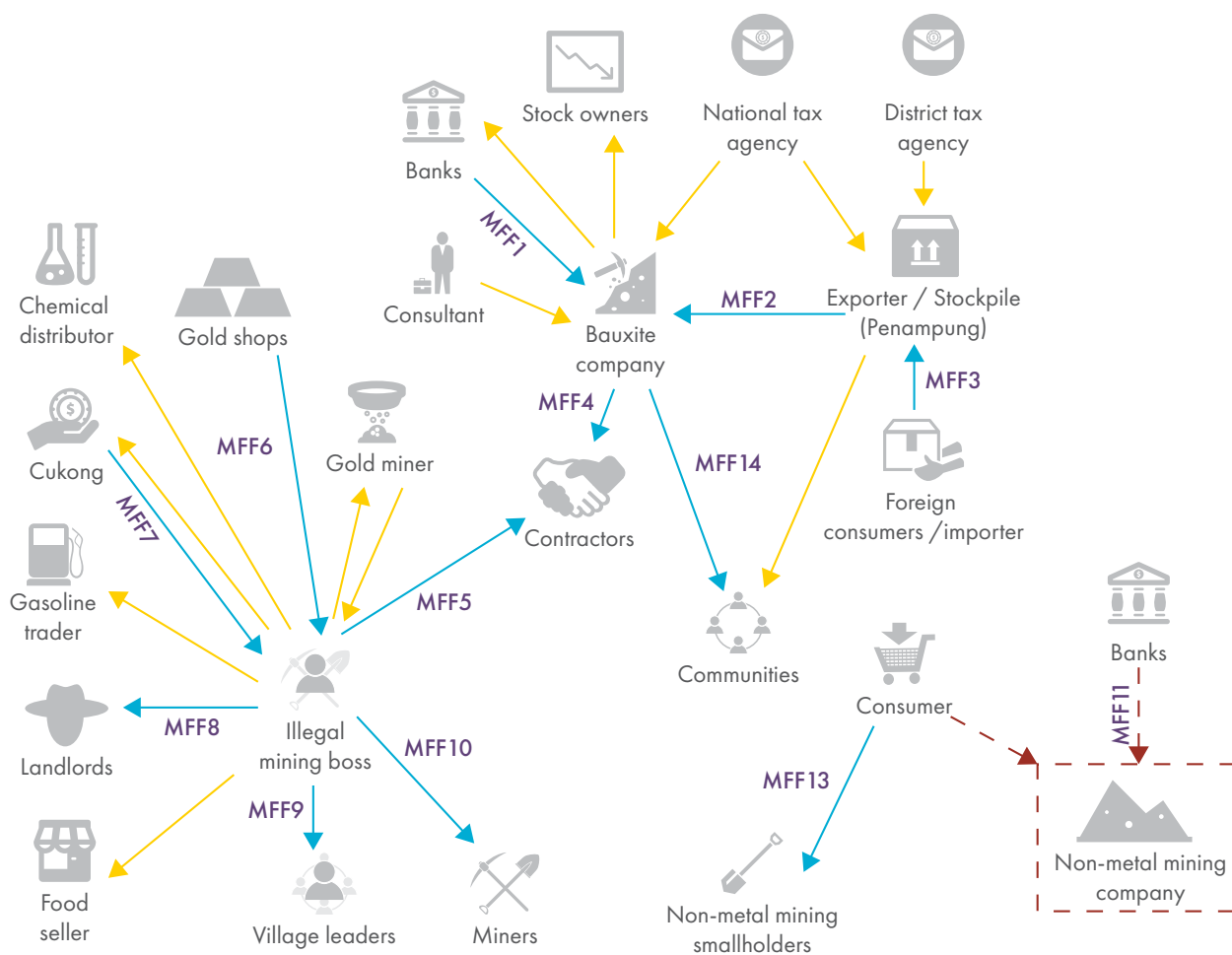


Orange = positive impact; blue = negative impact; black = neutral impact; yellow = flow not quantified; green dashed = new flow, identified after interviews

**Flow Scores (Oil Palm sector)**

FF#	Source -> Recipient	Transfer	Absolute size	creates economic benefits for local people (income, employment)	contributes to restoration of landscape biodiversity	strengthens social capital (include def)	contributes to food security	contributes to secure access to good water	contributes to clean energy	Score
PFF1	Bank -> Oil Palm Company	Loan	?	2	-1	-2	0	-1	-2	-4
PFF2	Bank -> Oil Palm and CPO Factory Company	Loan	?	2	-1	-2	0	-1	-2	-4
PFF3	Bank -> Small Holder Farmer	Loan	IDR 10,000,000,000 (BNI 46 – Farmers)	1	0	0	0	0	-1	0
PFF4	Oil Palm Company -> Seedlings Company	Goods payment	?	0	0	0	0	0	0	0
PFF5	Oil Palm and CPO Factory Company -> Seedlings Company	Goods payment	?	0	0	0	0	0	0	0
PFF6	Oil Palm Company -> Out growers Cooperation	Benefit sharing	?	1	0	-2	0	0	0	-1
PFF7	Bank -> Out growers Cooperation	Loan	IDR 80,000,000,000 (Bank Mandiri – Koperasi Pelang Sejahtera),	1	-1	-2	0	-1	-1	-4
PFF8	Trader -> Small Holder Farmers	Goods Payment	?	1	0	0	0	0	0	1
PFF9	Refinery Factory Company -> Oil Palm and CPO Factory Company	Goods payment	?	2	0	-2	0	-1	-1	-2
PFF10	Oil Palm and CPO Factory Company -> Oil Palm Company	Goods payment	?	2	0	-2	0	-1	-1	-2
PFF11	Oil Palm Company -> Community	CSR Grant	?	1	1	-2	1	1	1	3

**Mining sector's financial flows' map**



Blue = negative impact; yellow = flow not quantified; red = flow MFF11 does not exist

**Flow Scores (Mining sector)**

FF#	Source -> Recipient	Transfer	Absolute size	creates economic benefits for local people (income, employment)	contributes to restoration of landscape biodiversity	strengthens social capital (include def)	contributes to food security	contributes to secure access to good water	contributes to clean energy	Score
MFF1	Bank ->Bauxite Company	Loan	?	2	-1	-2	-1	-1	-1	-4
MFF2	Exporter -> Bauxite Company	Goods payment	?	2	-1	-1	-1	-1	-1	-4
MFF3	Foreign consumer -> Exporter	Goods payment	?	2	-1	-1	-1	-1	-1	-4
MFF4	Bauxite company -> contractor	Services payment	?	1	-1	-1	-1	-1	-1	-4
MFF5	Illegal mining boss -> contractor	Services payment	?	1	-1	0	0	-1	-1	-2
MFF6	Gold stores -> illegal mining boss	Goods payment	Rp. 108,000,000,000,-/year	1	-1	-2	0	-1	-1	-4
MFF7	Cukong -> illegal mining boss	Loan	?	1	-1	-2	0	-1	-1	-4
MFF8	Illegal mining boss -> landlord	Rental payment	?	1	-1	-2	0	-1	-1	-4
MFF9	Illegal mining boss -> village leader	Unformal tax payment	Rp. 96,000,000,-/year	0	0	-1	0	0	0	-1
MFF10	illegal mining boss -> miner	Services payment	?	1	-1	-2	0	-1	-1	-4
MFF11	Bank -> Nonmetal mining company	Loan	?	2	-1	-2	0	-1	-1	-3
MFF12	Consumer -> Non-metal mining company	Goods payment	?	1	-1	-2	0	-1	-1	-4
MFF13	consumer -> small holder nonmetal miner	Goods payment	\$ 1,512,000,000/year (sands)	1	-1	-2	0	-2	-1	-5
MFF14	Bauxite company -> community	Land payment	?	1	-1	-2	-1	-1	-1	-5



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