Protected Area Financing through Cooperation Agreements, Concessions, and Carbon Credits

Directorate of Forestry and Water Resources Conservation
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1. Introduction

Sustainable conservation finance is a portfolio of various short-term and long-term income sources that stably contribute to the financing of conservation activities. Sustainable financing aims to create a predictable and sustainable cash flow for conservation activities. The main function of sustainable finance is to cover operational costs, investment costs, infrastructure development and other costs related to protected area management. Sustainable financing is not only a matter of the amount of the budget, but also about how effectively the funds are used and how well the benefits obtained by stakeholders, including the community.

The sustainable financing mechanism has many options, one of which is by utilizing cooperation in the form of collaborative management (co-management), which is a joint management between protected areas and partners through the division of roles and funding. Partners referred to in this context are supporting institutions for area management, such as Civil Society Organizations (CSOs), Non-Government Organizations (NGOs), local governments, and the private sector. Several initiatives that have been widely implemented in this collaborative management are the Cooperation Agreement (*Perjanjian Kerja Sama* or PKS) scheme, conservation concessions, and carbon credits.

This study will discuss the mechanism of PKS, concessions, and carbon credits that have been initiated in various protected areas, especially Kerinci Seblat National Park (KSNP) as a case study. This study also reviews the challenges and recommendations for better implementation.

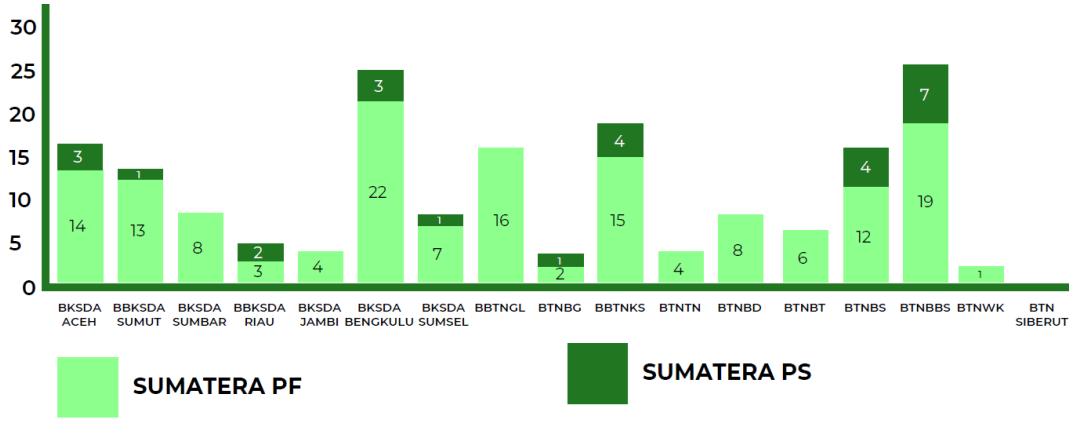
2. Opportunity to Utilize the Cooperation Agreement Mechanism (PKS) for TIGER Project UPT

Collaborative management in protected areas has been initiated since 2014 through Minister of Forestry Regulation No.19 of 2004 in Nature Reserve Areas (*Kawasan Suaka Alam* or KSA) and Nature Conservation Areas (*Kawasan Pelestarian Alam* or KPA), and the article explains about the PKS mechanism. The Minister of Forestry Regulation No. 95 of 2014 and the Minister of Environment and Forestry Regulation No. 44 of 2017 also outline the procedures for the KSA and KPA partnerships, including the PKS procedures. Partners referred to in PKS are universities, private companies, NGOs, or the community. The mechanism begins with the preparation of a joint proposal which is mutually agreed upon between the partners and the MoEF, or through a direct funding mechanism. PKS has an important value as a manifestation of effective performance for protected area managers. The number of PKS is also the basis for evaluating the performance of the Technical Implementing Unit (*Unit Pelaksana Teknis* or UPT).

PKS in protected areas are focused on 2 (two) aspects, namely:

a. Strengthening the area function (*Penguatan Fungsi*/PF), whose activities include strengthening conservation institutions and area management, preservation of flora and fauna, restoration of ecosystems, ecotourism, community empowerment, and utilization of environmental services.
b. Strategic development (*Pembangunan Strategis*/PS) that cannot be avoided to strengthen state sovereignty, such as the installation of national borders, construction of communication towers or cross-provincial roads.

Within the scope of the Directorate General of Natural Resources and Ecosystem Conservation (*Konservasi Sumber Daya Alam dan Ekosistem* or KSDAE), there are 765 PKS, consisting of 574 PKS for strengthening functions and 191 PKS for inevitable strategic development. Sumatra Island is one of the regions that has quite a lot of PKS in protected areas.



In one of the TIGER project sites, Kerinci Seblat NP, 32 PKS were produced in the 2015-2020 period. 27 of them are for strengthening functions, and 5 for the inevitable strategic development.

PKS with local governments are generally carried out for strategic development as well as strengthening functions. For example, PKS with the government of South Solok Regency aim to build a highway to transport community crops and encourage tourism. The PKS with the Kerinci Regency government is carried out for tourism development in the utilization zone, including the development of access, infrastructure, community empowerment, and tourism regulation. There is also a PKS with the Lebong Regency government which aims to develop access to isolated areas within the KSNP special zone.

PKS with the private sector and NGOs/CSOs generally aim to strengthen functions, although there are several private parties that support strategic development in KSNP. Some of the objectives of PKS to strengthen functions in KSNP include developing monitoring and reducing threats to wildlife conservation, implementing SMART-RBM, occupancy surveys for tigers and other prey animals. In the buffer zones, there are PKS for elephant conservation because elephants traverse a number of company concessions and community lands. The NGOs that enter into PKS with KSNP include FFI, PILI-NGO movement, Akar Network, Perkumpulan Walestra, and Lingkar Institute.

BBTNKS is also supported by CSOs who are developing collaborations for harvesting pine resin NTFPs (with the Bina Karya Farmers Group), NTFP harvesting and waste management (KPPL and Karya Utama farmers group), and the sustainable coffee cultivation of Bangun Rejo (Mandiri Bangun Rejo

Conservation Group). Several private sectors have also contributed to strengthening the protection function, such as PT Mitra Kelinci, PT Supreme Energy, and PT Bangun Tirta Lestari.

However, there are still some initiatives that have not yet reached the agreement. Several PKS with geothermal companies and PDAMs are still in the early initiation stage even though they had been initiated many years ago.

Some of the challenges in implementing PKS include:

a. Partners need strategic issues to collaborate with protected areas like conservation of endangered species. This causes PKS to be concentrated in areas with iconic species.
b. The bureaucratic system of the PKS process is relatively complicated and takes a long time.
c. The zoning area determines the continuity of the cooperation. Areas that have the threat of encroachment have the potential to disrupt PKS and partners' desire to contribute.
d. There is no check and balance mechanism in financial management that can reduce the level of coordination and trust between parties.
e. Not all parties outside the UPT have the same perspective on collaborative management. For example, the limited development of road infrastructure and the orientation of land clearing in the area, although carried out for community empowerment, are still not corresponding to the function of the area.
f. The number of PKS in one UPT has the potential to cause overlapping or duplication of activities.

The basic principle that should be used as a reference in managing collaboration is to build mutual respect, mutual trust, and mutual benefits between parties. For this reason, an agenda must be developed, implemented, and evaluated together. In the collaboration model, good principles are interdependence, collective spirit, collective awareness, and collective actions. To create a PKS that can encourage sustainable financing for protected area managers and their partners, it is expected that there will be some changes such as:

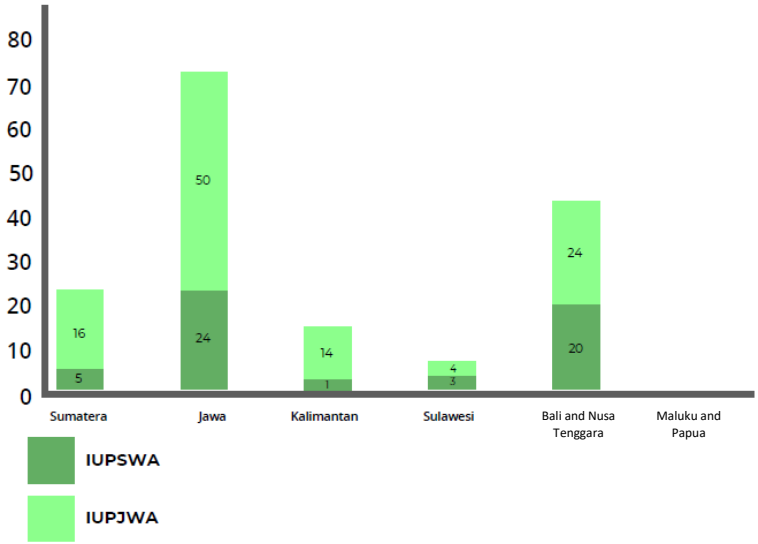
a. The collaboration is focused on protecting the area and biodiversity, which has a long-term function for sustainable development, so that the burden of financing is shared between the government and partners.
b. Determination of bottom-up policies, multi-stakeholder-based management, changing the normative bureaucracy towards responsive professionals and adaptive services, as well as decentralized management, for example the implementation of Resort Based Management.
c. PKS between the UPT and the community can serve aa conflict management strategy, therefore the Community Based Forest Management scheme in the PKS should be directed at activities that encourage community agreement and participation in area protection and community economic development, such as Community Forest (*Hutan Kemasyarakatan* or HKm), Community Plantation Forest (*Hutan Tanaman Rakyat* or HTR), or Forest and Land Rehabilitation (*Rehabilitasi Hutan dan Lahan* or RHL).

3. Opportunity to Utilize Concession Mechanism for TIGER Project UPT

Another scheme of co-management that can contribute to supporting conservation is by granting permits and rights to non-government authorities to manage forest areas for conservation purposes, which are called conservation concessions. The concession mechanism can be located inside a protected area or outside the area, with the main activity being the use of environmental services.

For activities within the area, concessions can be made through a Nature Tourism Concession Permit (*Izin Pengusahaan Pariwisata Alam* or IPPA), in the form of a Business Permit for the Provision of Nature Tourism Facilities (*Izin Usaha Penyediaan Sarana Wisata Alam* or IUPSWA) or a Business Permit for the Provision of Nature Tourism Services (*Izin Usaha Penyediaan Jasa Wisata Alam* or IUPJWA); Utilization Permit for Exploitation Stage Geothermal Environmental Services (*Izin Pemanfaatan Jasa Lingkungan Panas Bumi Tahap Eksploitasi* or IPJLPB); Water Utilization Permit (*Izin Pemanfaatan Air* or IPA) and Water Energy Utilization Permit (*Izin Pemanfaatan Energi Air* or IPEA) for non-commercial purposes or Water Utilization Business Permit (*Izin Usaha Pemanfaatan Air* or IUPA) and Water Energy Utilization Permit (*Izin Usaha Pemanfaatan Energi Air* or IUPEA) for commercial purposes. For outside protected areas, concessions are realized in the form of Business Permits for Utilization of Ecosystem Restoration Timber Forest Products (*Izin Usaha Pemanfaatan Hasil Hutan Kayu Restorasi Ekosistem* or IUPHHK-RE).

A. Ecotourism



As of 2020, 162 IPPA permits have been issued (53 permits for IUPSWA and 109 for IUPJWA), with the majority located on the islands of Java, Bali and Nusa Tenggara, and Sumatra. From the number of permits, it is estimated that the total investment for infrastructure development is IDR 2.48 trillion.

In one of the TIGER project locations, KSNP, only 1 IUPSWA was issued for PT Linggau Bisa in South Sumatra Province. This is in line with ecotourism non-tax state revenue (*Pendapatan Negara Bukan Pajak* or PNBP) in KSNP which is not too high. In addition, a survey was conducted in KSNP to see the willingness to pay for tourism, purchasing power, economic conditions, and condition of human resources in supporting sustainable ecotourism. The survey results show that KSNP is considered lacking in those aspects, so KSNP is not included in the priority areas for ecotourism within the scope of the Directorate General of KSDAE. In addition, business actors around KSNP are also not ready to take advantage of concessions, even though KSNP has accommodated this incentive through the determination of utilization zones and efforts to promote ecotourism.

Lessons learned from existing IPPA practices are that tourism managers need to build forums to facilitate coordination, such as the Wakatobi Nature Tourism Forum. The regional UPT can also initiate or foster this forum for business actors.

B. Water and Geothermal Environmental Services

Utilization of water environmental services focuses more on the use of clean water, such as drinking water, agriculture, tourism, so that it is more widely used by the community, government agencies, or PDAMs. Meanwhile, hydro energy is more focused on electrical energy, so there are several private sectors who are interested in applying for permits. Nationally 26 permits were issued for IPA and IUPA, plus 7 permits for IUPEA. The resulting investment is IDR 63.3 billion for water use and IDR 1.02 trillion for hydro energy. PNBP generated from IUPA and IUPEA in 2019 was worth IDR 1.63 billion.

On the island of Sumatra, it is estimated that there is an availability of 111,178 billion m of water per year with a usage requirement of 49.58 billion m per year, so there is still a surplus. Because the use of water for energy will not eliminate the availability of water, the utilization of water energy in Sumatra is very prospective. The Strategic Plan of the Directorate of Utilization of Environmental and Forestry Services (*Pemanfaatan Jasa Lingkungan Hutan Konservasi* or PJLHK) for 2015-2019 includes KPIs for the use of water and water energy environmental services, and on the island of Sumatra the permits are focused on the Gunung Leuser National Park, Kerinci Seblat National Park and Bukit Barisan Selatan National Park areas.

In the context of developing the use of water energy through hydropower, KSNP is a potential location because the potential for water discharge from the Batang Hari watershed reaches 1.134 trillion meters/year, and until now its use is only 147.23 billion meters/year. The Musi watershed also has the potential to become a source of power generation with a maximum discharge at some points reaching 49.4 billion meters/year, and its use has only reached 6.5 billion meters/year. For small scale through micro-hydro builders, rivers with relatively small discharges can be utilized, such as in the Teramang Muar River Area whose discharge reaches 13 billion meters/year, but currently only be used for agricultural irrigation, fisheries and household needs.

Water utilization permit in KSNP by BBTNKS partners 2015-2019

NO	BBTNKS partners for water utilization concessions	TYPE OF PERMIT	YEAR	LOCATION
1	PLTMH Sako Tapan	IPEA	2015	Nagari Sungai Gambir Seko Tapan, Pesisir Selatan
2	Polda Bengkulu (SPN Bukit Kaba)	IPA	2015	BENGKULU
3	PDAM Tirta Sakti kerinci Regency	IUPA	2015	Kerinci Regency
4	PT. Brantas Cakrawala Energi	IUPEA	2016	South Solok
5	KTH Ranah Kasah Lestari and Perkumpulan Walestra	IPEA	2019	Renah Kasah Village, Kerinci Regency
6	Karang Jaya Village, Selupu Rejang District	IPA	2019	REJANG LEBONG

For household water utilization, there are several PDAMs other than PDAM Tirta Sakti operating around KSNP and have the potential for collaboration, such as PDAM Pessel in Pesisir Selatan, PDAM Rantau Pandan in Muara Bango, PDAM Tirta Buana in Bangko, PDAM Sarolangun in Sarolangun, PDAM Tirta Selagan in Muko-Muko Regency, PDAM Tirta Langkisau in Kambang, and PDAM Tirta Saribu Sungai in South Solok.

However, since 2019 licensing for the water utilization in protected areas for business activities is no longer allowed. The water utilization is only allowed for non-commercial activities and is used by individuals.

For geothermal, the Geological Agency in 2017 released survey results that there were 342 geothermal potential locations, with the most points being in Sumatra (98 points), Sulawesi (87 points), and Java (73 points). 48 of these points are in protected areas, 56 in protected forests, 50 in production forests, and 145 in APL. Geothermal potential for protected areas alone can generate 4-6 GigaWatt of electrical energy. Until now, nationally there are only 14 geothermal concessions in the scope of protected areas. One example of quite large geothermal investment with the IPPJPB scheme is in Gunung Halimun Salak National Park, PT Chevron Geothermal manages 228.69 hectares with an investment of IDR 12.8 trillion for a capacity of 377 MW and PT Indonesia Power manages 13.72 hectares with an investment of IDR 2 trillion for a capacity of 180 MW.

In KSNP, there are several Geothermal Working Areas (*Wilayah Kerja Panasbumi* or WKP) that are still in the exploration stage, such as the Liki Pinangawan Muaralaboh WKP managed by PT Supreme Energy and Sungai Penuh WKP and Huluhais WKP managed by PT Pertamina Geothermal Energy. However, the granting of this IPPJPB permit is still contrary to the world heritage status that KSNP holds.

As a short-term solution, optimizing the utilization of water and geothermal environmental services can be carried out outside protected areas, for example in protected forests that are directly adjacent to the use of the Borrow-to-Use Forest Area Permit (*Izin Pinjam Pakai Kawasan Hutan* or IPPKH) which aims to develop environmental services. This initiative can be carried out by permit applicants by involving Forest Management Units (FMUs) or support from the Watershed Management Station (*Balai Pengelolaan Daerah Aliran Sungai* or BPDAS) or the surrounding River Basin Station. An example of this initiation is in the protected forest community of Cipeteuy Village, Sukabumi in building a Micro Hydro Power (MHP), which is supported by Gunung Halimun Salak BTN, JICA and local NGOs, or Beganak HKm who constructed MHP from Riam Kemokak Waterfall in the Upper Merangun River in the Gunung Naning Protected Forest (*Hutan Lindung* or HL).

C. Ecosystem Restoration

Ecosystem restoration activities in Indonesia began by an initiative from Burung Indonesia in 2000 in the Hutan Harapan area. Until 2015, MoEF has issued 14 IUPHHK-RE permits spread across Sumatra and Kalimantan, with a total area of 558 thousand hectares of production forest. In 2019, two IUPHHK-RE were issued and the total land area became 622 thousand hectares.

NO	COMPANY NAME	PROVINCE	AREA (HECTARE)
1	PT. Restorasi Ekosistem Indonesia	South Sumatera	52,170
2	PT. Restorasi Ekosistem Indonesia	Jambi	46,385
3	PT. Restorasi Habitat Orangutan Indonesia	East Kalimantan	86,450
4	PT. Ekosistem Khatulistiwa Lestari	West Kalimantan	14,080
5	PT. Gemilang Cipta Nusantara	Riau	20,265
6	PT. Rimba Raya Conservation	Central Kalimantan	37,151
7	PT. Sipef Biodiversity Indonesia	Bengkulu	12,672
8	PT. Rimba Makmur Utama	Central Kalimantan	108,255
9	PT. Gemilang Cipta Nusantara	Riau	20,450

NO	COMPANY NAME	PROVINCE	AREA (HECTARE)
10	PT. Kerawang Ekawana Nugraha	South Sumatera	8,300
11	PT. Sinar Mutiara Nusantara	Riau	32,830
12	PT. Global Alam Nusantara	Riau	36,850
13	PT. The Best One Unitimber	Riau	39,412
14	PT. Alam Bukit Tigapuluh	Jambi	38,665
15	PT. Alam Sukses Lestari	Central Kalimantan	19,520
16	PT. Rimba Makmur Utama	Central Kalimantan	49,620

The IUPHHK-RE is expected to be the driving force for a paradigm shift that investment and exploitation are not directed at harvesting timber, but to restore ecosystems and promote important biodiversity recovery. For example, PT Rimba Makmur Utama and PT Rimba Raya Conservation have ecosystem restoration permits for the purpose of trading carbon and NTFPs. PT Alam Sukses Lestari conducts restoration for land reclamation. Ten companies for IUPHHK-RE are located on the island of Sumatra, five of which are managed by the April Group entitled Riau Ecosystem Restoration (RER) with a commitment of USD 100 million for 10 years, with a total concession permit of 60 years.

Even though IUPHHK-RE is not located in a protected area, it can contribute to the area. PT Alam Bukit Tigapuluh (ABT) in the buffer zone of Bukit Tiga Puluh National Park has 30 security guarding the concession area, which also impacts the security of the protected area. In KSNP, there is an ecosystem restoration concession managed by PT Sipef Biodiversity Indonesia to develop a biodiversity study in an area declared a High Conservation Value Forest and develop partnerships with smallholders. PT SBI also carried out area restoration and area protection, especially those bordering KSNP. The number of patrol team personnel is 12-20 people. This concession area protection activity can be a fortress for the protection of the area against encroachment.

4. Opportunity to Utilize Carbon Credit Mechanism for TIGER Project UPT

Carbon credits are designed as a market-oriented mechanism to reduce greenhouse gas emissions. An institution, either a state or a company or other institution, will benefit from the sale of a certificate if it is proven to have reduced greenhouse gas emissions. The carbon credit mechanism is important to explore because it can encourage new economic alternatives, followed by forest protection and strengthening efforts to restore and recover ecosystems, as well as encourage Indonesia's contribution in reducing greenhouse gases.

Carbon credits are generally project-based and the context is the difference between emissions before and after the project development. Afterwards, carbon credits will be given after the emission reduction has occurred. These credits can be sold and used by the buyer to meet emission reduction targets or to make the buyer's activities carbon neutral. Carbon credit systems can exist in either a mandatory or a voluntary market. The mandatory market includes MPN and JI, while the voluntary market includes Gold Standard (GS), Verified Carbon Standard (VCS), Plan Vivo, Panda Standard, and other markets.

To support carbon credits that focus on reducing the rate of forest destruction and deforestation, a command and control mechanism has been established, one of which is REDD+. The REDD+ is the

entry point for the design and implementation of carbon credits, as has been done by PT Rimba Raya Conservation which carried out the REDD+ initiative with a VCS carbon credit mechanism.

	CDM	VCS	GS	PLAN VIVO	REDD+
TYPE OF MECHANISM	MANDATORY	Voluntary	Additional CDM mechanisms and voluntary carbon credits	Voluntary	Supporting voluntary carbon credits
USER	States, SOEs, ROEs, and private companies	Private Companies	SOEs, ROEs, and private companies	NGOs and SHGs	Central government, local government, SOEs, ROEs, private companies, NGOs and SHGs
TYPE OF PROJECT	Natural resource processing industry	Forestry industry or forest protection	Forestry industry or forest protection	Small-scale forestry industry, agroforestry or community forest protection	Forestry sector
CERTIFICATION OUTPUT	CER	VCU	CGS*	PVC	ICER**
OFFSET PROVIDER	European Union and US – Cool Effect, Carbon Fund, Carbon Credit Capital	US BEF, BlueSource, Carbon Credit Capital, Native Energy, TerraPass, The Climate Trust	US – 3 Degree, Carbon Credit Capital, Carbon Fund, Cool Effect, Native Energ	Level, Cotap, myclimate, prima klima, Sedicialberi, zerro mission	None and payments based on agreements between countries or institutions the Result based payment or following voluntary carbon
TRANSACTION COST	50,000 – 130,000 USD	20,000 – 50,000 USD	10,000 – 30,000 USD	7,500 – 15,000 USD	-
IMPLEMENTATION IN INDONESIA	215 non REDD+ projects	13 VCS Projects	19 GS-based projects	6 Plan Vivo projects	39 projects and 1 REDD+ program

*CGS = Certified Gold Standard, ** ICER = Indonesian Certified Emission Reduction or *Sertifikat penurunan emisi karbon hutan Indonesia* (SPEKHI)

In the KSNP landscape, there is a prominent practice of voluntary carbon credits initiated through the REDD+ scheme, such as Plan Vivo carbon credits in the Bujang Raba Village Forest and Durian Rimbun Village Forest. In Bujang Raba, the project was coordinated by KKI Warsi by involving 5 indigenous communities to protect tropical mountain forests. The area is managed by the community sustainably through the Village Forest program, and actively reduces forest fires, illegal hunting, and unsustainable harvesting of timber and NTFPs. More than 5,000 hectares of forest generate a net carbon benefit of around 40,000 tCO2e per year. In May 2020, the carbon was purchased by Sweden for IDR 1 billion.

The REDD+ initiative in Durian Rambun Village Forest is coordinated by FFI with an area of 3,616 hectares of village forest, and an estimated carbon benefit is 6,618 tCO2e per year. Activities undertaken include enrichment planting, tree planting, agroforestry enhancement, and protection of natural regeneration of native species. Community involvement is carried out through patrols, sustainable forest management, and the establishment of a sustainable coffee company.

In addition, there are several REDD+ initiatives that are still in the preparatory stage. In the Limau FMU area, a carbon scheme is being developed through the RaCSA (rapid carbon stock assessment) method by educating the local community about calculating carbon stocks in two Village Forest locations, namely Guguk Village and Lubuk Beringin Village by KKI-WARSI. FFI is also developing a community carbon pool-based REDD+ pilot in 8 village forests in Merangin Regency with an area of 20,000 hectares, with activities including micro spatial planning, preparation of Emission Level

Reference and MRV, and PDD validation. ICRAF together with the Merangin Regency Government developed a regional development plan based on low carbon emission land use. Local-level practices and support have great potential as social capital for REDD+ implementation.

Based on the practice in KSNP, it appears that civil society is able to learn and understand the mechanism of carbon credits. In fact, the key to the success of this mechanism is the readiness and activeness of the community in protecting forests and restoring forest ecosystems. The area of degraded forest within KSNP and its buffer zone is 1.29 million hectares. By planting 2 million trees per year, 78 thousand tons of C5 will be produced in 10 years. For this reason, the initiation of carbon projects in the region is important.

5. Conclusions and Recommendations for Follow Up

PKS, conservation concessions, and carbon credits are mechanisms that can be utilized for sustainable financing of protected areas. In the KSNP area, PKS has been widely practiced by UPT and has become the main option in running partnerships in protected area management. Carbon concessions and credits still need to be developed in KSNP, especially IPPA and IPPJLPB and demonstration projects for REDD+ for carbon credit targets within the KSNP area.

	PKS MECHANISM	**Protected area and buffer zone concessions**	**CARBON CREDIT**
TYPE OF MECHANISM	Cooperation of both parties through PKS, RPP and RKT documents	Cooperation of both parties through licensing and partners can develop PKS for good practice of area management	Initiative from authorities without going through partners or developing partnerships with agencies working on carbon projects
NATURE OF MECHANISM	Mandatory for partners working in protected areas	Mandatory in licensing and implementing regulations for implementing concession permits	Voluntary based on proposals from stakeholder authorities supported by partners
REGULATION	Regulations governing PKS in place	Regulations governing concession in protected areas and their buffers zone in place	Only regulations for demonstration activities for the implementation of forest carbon
IMPACT OF AREA MANAGEMENT	Significant impact if the support from partner is optimal, especially in cost sharing and benefit sharing	Significant impact for IPPA practices but doubtful for IPJLPB especially if exploration, exploitation, and utilization practices have an impact on biodiversity or ecosystems	The impact has not yet been known because it is still in the demonstration activities period
DEVELOPMENT OPPORTUNITIES	Great development opportunities because many conservation area authorities have long experience with this mechanism	Requires several development stages, especially site readiness, zone status stability and eliminating constraints on accessibility and infrastructure	The development aspect has not yet been known due to minimal regulations for the implementation of carbon credits in protected areas
SUSTAINABLE FINANCING MECHANISM	In the short term, this mechanism is relatively more effective than the other two mechanisms	The income is calculated based on the concession holder's contribution or permit contribution in good practice area management	Ineffective in the short term, but highly potential to be effective in long term sustainable financing mechanisms

Although PKS is not something new in protected area management, a collaborative paradigm shift should be built so that the PA manager and the partner will have same position, even though the PA manager have higher authorities. The large number of PKS potentials may cause overlapping activities, hence alliances or networks is suggested to develop, so efficiency of the activities will be increased.

Regarding concessions, conservation area managers should disseminate the regulations to increase the contribution of business actors in the utilization of environmental services. Managers may also conduct assessments and mapping of environmental services as an initial stage to promote the area.

To support REDD+ through the voluntary carbon market, learning from the carbon project initiatives that have been initiated, local communities have a critical role in determining the success of project implementation. Partnership initiatives such as area protection, ecosystem restoration, or water protection in the future can be linked to the target of reducing greenhouse gas emissions to enter the carbon credit mechanism.