

# ASEAN CENTRE FOR BIODIVERSITY

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Draft of the Final Report

“Filling the Baseline Gaps for Socio-economic and Livelihood in  
Gunung Leuser National Park (Area 3) and Way Kambas National  
Park”

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**Deliverable:** Draft Final Report  
Filling the Baseline Gaps for Socio-economic and  
Livelihood in Gunung Leuser National Park (Area 3) and  
Way Kambas National Park

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## Abbreviations

ACB	ASEAN Centre for Biodiversity
AHPs	ASEAN Heritage Parks
ASEAN	Association of Southeast Asian Nations
BPS	Biro Pusat Statistik / Central Bureau for Statistics
CFM	Collaborative Forest Management
CMP	Collaborative Management Plan
ERU	Elephant Respond Unit Officers
FGDs	Focused Group Discussions
GL	Gunung Leuser
GLNP	Gunung Leuser National Park
JICA	Japan International Cooperation Agency
KLHK	<i>Kementerian Lingkungan Hidup dan Kehutanan Republik Indonesia</i> Ministry of Environment and Forestry of the Republic of Indonesia
KfW	Kreditanstalt für Wiederaufbau
KKH	<i>Direktorat Konservasi dan Keanekaragaman Hayati</i> / the Directorate of Biodiversity Conservation of Indonesia's Ministry of Environment and Forestry
KSDAE	<i>Ditjen Konservasi Sumber Daya Alam Ekosistem</i> / Directorate General of Ecosystem Natural Resources Conservation
KSPN	<i>Kawasan Strategis Pariwisata Nasional</i> // National Tourism Strategic Area
KTHK	<i>Kelompok Tani Hutan Konservasi</i> /Farmer's Group of Conservation Forest
LPT	<i>Lembaga Pariwisata Tangkahan</i> / Tangkahan Tourism Institute
METT	Management Effectiveness Tracking Tool
MoEF	Indonesia's Ministry of Environment and Forestry
MDK	<i>Model Desa Konservasi</i> / Village Conservation Model
MMP	<i>Masyarakat Mitra Polisi Hutan</i> / Community-based Forest Law Enforcers
MPA	Masyarakat Peduli Api/ Community-based Fire Preventor
NGOs	Non-Governmental Organization
NP	National Park
NTFP	Non-Timber Forest Product
PETA	<i>Yayasan Pesona Tropis Alam Indonesia</i> / Indonesian Natural Tropical Enchantment Foundation
PERDES	<i>Peraturan Desa</i> /Village Regulation
PKG	<i>Pusat Konservasi Gajah</i> / Elephant Conservation Center
PKI	<i>Partai Komunis Indonesia</i> /Indonesian Communist Party
PMM	Program Management Manual
PTPN	<i>PT. Perkebunan Nusantara</i> /Nusantara Plantation (State-owned Enterprise)
RBM	Resort Based Management
RPTN	<i>Resort Pengelolaan Taman Nasional</i> //Resort-area Management of National Park
RPJP	<i>Rencana Pengelolaan Jangka Panjang (RPJP)</i> /Long-term Action Plans for the National Park
SATGAS	<i>Satuan Tugas</i> /Task Forces

SGP	Small Grants Programme
SOCP	Sumatran Orangutan Conservation Program
SLA	Sustainable Livelihood Approach
SLF	Sustainable Livelihood Framework
SPTN	<i>Seksi Pengelolaan Taman Nasional</i> // National Park Management Unit
TN	<i>Taman Nasional</i> / National Park
TNWK	<i>Taman Nasional Way Kambas</i> /Way Kambas National Park
ToR	Terms of Reference
TPR	Technical Progress Report
UNESCO	United Nations of Educational, Scientific, and Cultural Organization
USAID	U.S. Agency for International Development
VESSWIC	Veterinary Society for Sumatran Wildlife Conservation
WCS	Wildlife Conservation Society
WK	Way Kambas
WKNP	Way Kambas National Park
Yapeka	<i>Yayasan Pendidikan Konservasi Alam</i> / Nature Conservation Education Foundation
YLI	<i>Yayasan Leuser International</i> // Leuser International Foundation
YOSL-OIC	Orangutan Foundation for Sustainable Sumatran Orangutan Information Center

## Executive Summary

The ASEAN Centre for Biodiversity has received assistance from German Financial Cooperation through a Small Grants Programme (SGP) to support the efforts of the ASEAN Heritage Parks (AHPs) to protect the biological diversity and improve livelihoods in and around (adjacent areas of) their core zone. Indonesia and Myanmar were selected as the initial countries to pilot the SGP, followed by Viet Nam for the second phase.

In the framework of the SGP, development of the Collaborative Management Plans (CMPs) for the AHPs Gunung Leuser National Park (GLNP) and Way Kambas National Park (WKNP) had been conducted in 2018. The CMPs provide the basis for calls and grants for interventions of SGP and provide the baseline data for the programme's outcome and impact. Upon ACB's review of the CMPs, gaps were identified in the baseline-data. This holds in particular for the socio-economic information and, to a lesser extent, for the biophysical information.

This consultancy service provides an assessment of baseline data gaps on outcome and impact indicators of biodiversity and livelihood programmes that are either underway or projected to be implemented in villages that are adjacent to GLNP and WKNP AHPs. This consultancy assignment aims to support the initial gaps assessment. The purpose of the consultancy is:

- a. To fill the gaps of the socio-economic and biodiversity data and information of the two national parks and
- b. To establish baselines for possible outcome and impact monitoring and evaluation

In addition to the CMPs, ACB also has developed the Programme Management Manual (PMM) to guide the implementation of SGP in Indonesia. In the PMM, especially in Annex 7 (Monitoring and Evaluation), there are specific matters related to Outcome and Impact Indicators (Annex 7.1 and 7.2). These set of indicators were developed in order to evaluate the programme in longer term of the programme implementation. In addition to that, in the PMM Chapter 7 also mentioned about the SGP Logframe Diagram (page 56) that shows the relationship of results: from activities to the outputs and its contribution to the thematic outcomes through its indicators; and its contribution to the project objectives through its key result areas. This is in line with the specific indicators of each key result area that can be found in Annexes 7.1 and 7.2 of the PMM as mentioned. It is important to note that the Logframe and Set of Indicators for Indonesia were referred to Myanmar with a few adjustments in the initial implementation of SGP in Indonesia. Thus, these pre-set indicators need to be further reviewed and revised to reflect the current situations.

The consultancy work was based mainly on secondary and complemented by primary data. Secondary data were collected from various credible sources that are listed in the annexes, while primary data was collected from selected villages, that were drawn from the two AHPs. The assessment period is carried out in October 2020 until April 2021. The primary data collection was carried out during November up to December 2020 in two national park areas. Meanwhile, the secondary data collection was conducted during October 2020 up to February 2021, with some consultation with ACB SGP team, the Penabulu Foundation as a Service Provider SGP Indonesia, the national parks management in GLNP and WKNP, the grantees of Cycle 1, the local communities, and the local governmental offices in GLNP and WKNP.

The assessment findings are presented following three parts. First, the review of the CMPs and its gaps; second, the findings on the biodiversity conservation; and the last part is the findings on the socio-economic and livelihood aspects. Especially for the second and third parts, the findings will be mainly based on the fieldwork assessment and mostly from the village-based findings. In addition to the village-based findings from the fieldwork results assessment, the sections of biodiversity and socio-livelihood were guided by the set of indicators provided in the PMM Indonesia. Review on the existing indicators provided in the PMM that contains two parts, namely Biodiversity Conservation (Objective A) and Livelihood Component (Objective B). Aside from the findings on the filling the baseline gaps, the report also provides recommended indicators based on the assessment findings.

The following are highlights of findings on filling the baseline data gaps on biodiversity conservation and livelihood of buffer village communities for GLNP and WKNP. In general, data on some indicators while available were at very micro level and based on point estimates rather than representative samples. Thus, while such indicators were available, but because the consultancy only had limited time, it would mean that it was not possible to establish the authenticity and reliability of the data for such indicators. Meanwhile, there were cases when data on some indicators were available in one of the national parks but unavailable in the other. Such data were included in the report on the consideration that they can help to bring out the differences in social, cultural, economic, and physical environment, biodiversity conservation and history in the two national parks.

Summary for the biodiversity findings:

1. GLNP and WKNP long term development reports for period of ten years provided sufficient data on national park institutional capacity, species count, human resources capacity, law enforcement and protection of national park integrity and value, collaboration arrangements with buffer village communities, and local Non-Government Organisations (NGOs) in strengthening conservation and protection of flora and fauna in the two national parks.
2. Difficulties in filling data gaps that is not covered in NP long-term development plan in the area included irrelevancy of some indicators in the PMM document to the



context of the two AHPs, unavailability of data in AHPs, and existence of third-party data that could not be used as reliable data source because there was not sufficient time to conduct validation with AHPs management. Problem areas in filling baseline data gaps included differences in data variability on some indicators, unavailability of data on some indicators, irrelevancy of some indicators in PMM document for the Indonesian context, and differences in data on some indicators available in GLNP and WKNP.

3. Non-in-depth involvement of all stakeholders in CMPs report development especially in providing indicators relevant information had implications for baseline data in the CMP reports on indicators on such issues as a collaboration between AHPs, local governments, and AHP buffer villages in national park conservation and protection of flora and fauna, and adoption of conservation practices in economic and daily activities of buffer village. Main obstacles to biodiversity conservation and protection of AHP include among others, activities of buffer communities in AHPs such as hunting, collecting firewood, collecting water, collecting honey, forest and land fires, and gathering medicinal plants and illegal logging. Specially for GLNP, settlements of buffer village population inside the park remains a problem that poses the danger of current and future biodiversity conservation and protection efforts. Therefore, as CMP document would expect to find indicators of the initial conditions of the activities of the programmes in evaluation tables, this is not the case.

On social and economic outcome and impact indicators, the consultancy had the following findings:

1. Considering the techniques used to collect baseline data on outcome and impact indicators, the report findings were based largely on secondary data sources from the national statistics agency, published reports on social and economic activities of buffer village communities, progress reports of ongoing SGP projects, and AHP official reports. Indicators for which data were available and reported included sources of livelihood, accessibility, education, health, and level of involvement in ecotourism activities.
2. The key sources of income and livelihood of buffer village population in the two AHPs are subsistence agriculture, keeping livestock, growing plantation crops especially rubber and oil palm, working on plantations, and ecotourism activities.
3. Educational attainment of most of the population is primary school. Data on income or expenditure, varied widely and was not recorded in many official documents.
4. Data also identified problems that buffer village communities face in sustaining livelihoods, which included persistent human-wildlife conflict i.e. encroachment of elephants, limited land for farming activities; and limited institutional and human resource capacity to develop ecotourism potential.

Based on the findings, the consultant team proposed some recommendations for ACB further considerations:

- Considering SGP is currently within the implementation period, the need for the development of output, outcome, and impact indicators that covers that of preceding programme implementation and remaining programme until the end of the programme period, and better still to be part and parcel of program design. That way, recurrence of the problem of developing indicators that measure programme performance after the projects are already underway will be averted.
- To enhance programme performance in the future, there is need to identify list of output level indicators which should be an integral component of CMP documents that will complement outcome and impact indicators.
- ACB may conduct a review that is aimed at identifying programmes, which will be carried out through SGP, to determine whether CMPs can continue to serve as the main reference documents or updating the reports to incorporate gaps in output, outcome and impact indicators and projects. This will have implications for the set of relevant indicators, need for collecting baseline data in accordance with the activities carried out in the programme.
- For the specific recommended indicators for Indonesian context, the team proposes some of possible revised indicators that are derived from the assessment findings, both on Impact and Outcome levels. To select the recommended indicators for Indonesia, the team suggests using certain justifications that are based on this assessment results.

## **I. Introduction**

### **1.1. Background**

The ASEAN Centre for Biodiversity (ACB) has received assistance from German Financial Cooperation through the Small Grants Programme (SGP) and financially supported by Kreditanstalt für Wiederaufbau (German Finance Cooperation – KfW). SGP is supporting the efforts of the ASEAN Heritage Parks (AHPs) to protect the biological diversity and improve livelihoods in and around the adjacent areas of their core zone. Indonesia and Myanmar were selected as the initial countries to pilot the SGP, followed by Viet Nam for the second phase. For Indonesia, the Directorate of Biodiversity Conservation or Direktorat Konservasi dan Keanekaragaman Hayati (KKH), of Indonesia's Ministry of Environment and Forestry (MoEF) or Kementerian Lingkungan Hidup dan Kehutanan Republik Indonesia (KLHK) has the role as the Implementing Agency. While the Penabulu Foundation is the Service Provider for SGP programme implementation.

Out of the seven (7) AHPs in Indonesia, Gunung Leuser National Park (GLNP) in Aceh and North Sumatra Province, and Way Kambas National Park (WKNP) in Lampung Province, were selected as two pilot sites of SGP implementation. The two (2) parks were selected due to their significant importance in terms of biodiversity and its contribution to the global environment. The parks also highlight the importance of conserving flagship species, such as, among others: Orangutan, Rhino, Sumatran Elephant, and Tiger for GLNP. While Bear, Rhino, Tapir, Sumatran Elephant, and Tiger are found in WKNP.

SGP in the Indonesian context has three objectives inter alia, (1) Sustainable livelihoods: households and communities located in the priority areas will benefit directly from the small grants programme for their livelihood improvements; (2) Biodiversity conservation: biodiversity threats to the two ASEAN Heritage Parks will be reduced; and (3) Co-management strengthened: political and social support will be increased for the integrity of AHPs and their values by district officials, government agencies, and local stakeholders.

The development of Collaborative Management Plan (CMP) documents for the two AHPs conducted in 2018, followed by the implementation which is ongoing and entails the implementation of CMPs. The documents provide the basis for calls and grants for interventions of SGP, and also provide the baseline data for the programme's outcome and impact. The programme is currently in its implementation phase. By the time that the consultancy service is conducted, the implementation has been done in the Cycle One for these following progresses: 1) the Biodiversity Conservation Grants have been running, and 2) seven (7) grants have been awarded to local organisations in both parks. The indicators that SGP Indonesia has been used so far, especially for Cycle 1 implementation, need to be assessed in relation between the progress in the output

level, the alignment of the indicators in CMP documents and its significance to the outcome and impact levels.

In Gunung Leuser, the grantees include (interview with the Resource Economy and Livelihood Specialist of SGP, March 2021):

- (i) Yayasan Orangutan Sumatera Lestari - YOSL with the project: Collaborative Action to Protect and Improve Biodiversity Conservation in Gunung Leuser National Park Area III
- (ii) Wahana Lingkungan Hidup Indonesia Sumatera - WALHI SUMUT with the project: Encouraging Strengthening and Protection of the Gunung Leuser National Park Ecosystem with Resolving Tenure Conflicts through the Conservation Partnership Programme
- (iii) Yayasan Pesona Tropis Alam Indonesia - PETAI with the project: Strengthening Conservation of the Gunung Leuser National Park (GLNP) through Biodiversity Management in Area 3, Stabat
- (iv) Yayasan Ekosistem Lestari Indonesia – YEL with the project: Community Awareness Improvement on Taman Nasional Gunung Leuser (GLNP) Biodiversity Conservation
- (v) Veterinary Society for Sumatran Wildlife Conservation – Vesswic with the project: Strengthening Welfare and Management of Captive Sumatran Elephant, to Develop Strategy for Captive Elephant Conservation in Tangkahan

The total investment of the grants for Cycle 1 in Gunung Leuser is **EUR 309,150**.

In Way Kambas, the grants are awarded to two (2) organisations that include:

- (i) Pusat Informasi Lingkungan Indonesia – PILI Green Network with the project: Strengthening the Resort Based Management and Partnership with The Buffer Village for The Mitigation of Wildlife Hunting and Forest Fire in Way Kambas National Park
- (ii) Aliansi Lestari Rimba Terpadu - ALeRT with the project: Survey and Monitoring of Sumatran Rhino Population using Camera Traps and Individual Identification Technology

The total investment of the grants for Cycle 1 in Way Kambas is **EUR 106,426**. Altogether, the total investment for the Cycle 1 of SGP Indonesia is **EUR 415,576**.

In line with the Terms of Reference (ToR), the focus of the assignment is to fill the gaps in the baseline data, particularly for the socio-economic information and, to a lesser extent, for the biophysical information. Moreover, comprehensive baseline data that is expected to be drawn from current data and information available in CMPs and the Programme Management Manual (PMM) for Indonesia, especially at the outcome and impact levels.

PMM that was developed by ACB aim to guide the implementation of SGP in Indonesia. In the PMM, especially in Annex 7 (Monitoring and Evaluation), there are specific matters related to Outcome and Impact Indicators (Annex 7.1 and 7.2). These set of indicators were developed to evaluate the programme in longer term of the programme implementation. In addition to that, in the PMM Chapter 7 also mentioned about the SGP Logframe Diagram (page 56) that shows the relationship of results: from activities to the outputs and its contribution to the thematic outcomes through its indicators; and its contribution to the project objectives through its key result areas. This is in line with the specific indicators of each key result area that can be found in Annexes 7.1 and 7.2 of the PMM as mentioned. It is important to note that the Logframe and Set of Indicators for Indonesia were referred to the Myanmar with a few adjustments in the initial implementation of SGP in Indonesia.

Therefore, this consultancy contributes to reviewing the indicators based on the Indonesian context, especially applied in both national parks. Furthermore, the recommended indicators that are in line with the Indonesian context are provided in this report as reflected in the succeeding chapters.

## **1.2. Objectives**

In line with the introductory background, this consultancy is aimed at conducting a Baseline Gaps Analysis for GLNP Area 3 and WKNP. In addition, it is expected that the report will also contribute to the review and possible revision of the pool of indicators that is available so far. Specifically following the ToR, the objectives of this consultancy work are:

1. Filling the gaps in the socio-economic and biodiversity data and information of the two national parks; and,
2. Establishing baselines for the possible outcome and impact monitoring and evaluation.

## **1.3. Methodology**

### ***Conceptual Framework***

As stated in the Proposal of this consultancy service as well as in the Inception Report, the framework being used in this assessment is based on the combination of Collaborative Forest Management (CFM) and the Sustainable Livelihood Approach (SLA). However, it should be noted that the combined framework is used as a tool to guide this study and with no intention to be used as the full set of frameworks for the SGP implementation in Indonesia. Since the investment priorities in the SGP implementation in Indonesia did not use the particular framework, the team have tried to synergize the selection of the CFM and SLA components to the data collection exercises so that the baseline data and its gaps will be in line with initial indicators provided in the PMM Indonesia. What is presented in this report will be mainly referring to the data collection includes findings and its analysis, refer to set of indicators in the

PMM Indonesia, with more detail information of the data collection exercise that is referred in the combined CFM and SLA frameworks in the Annex 1 and 2 of this report.

SGP projects are directly aimed at empowering sustainability of livelihood of AHP neighboring villages through strengthening existing livelihood sources, enhancing, and diversifying alternative non-forest dependent ones, and promoting environmental conservation behavior. These to pursue the overarching goal is to enhance and support the sustainability of AHP resource that is in addition based on national (Ministry of Environment and Forestry), provincial and district government strategic plans, as informed by AHP strategic development and action plan. Therefore, the national park's natural resource, institutional capacity, and management that is vital for the success of SGP implementation are expected to play a vital role in baseline data gaps analysis and study. Later on, these aspects play a vital role in the selection of indicators. In Chapter II, the analysis will be made based on the CMP gaps and the existing indicators that are derived from the SGP Logframe Diagram provided in the PMM Indonesia page 56. To that end, the baseline gaps study assessment is mainly complementary in nature because its output is expected to fill the gap in baseline data and information on outcomes and impact indicators between what is required and what is available.

### ***Data Collection***

The assessment period is done between October 2020 until April 2021. The primary data collection was made during November up to December 2020 in two national park areas. Detailed fieldwork schedule and focus group discussions (FGDs) are provided in the Table 3 and Table 4 in this Chapter. While the secondary data collection was made during October 2020 up to February 2021, with some consultations with ACB SGP team, the Penabulu Foundation as a Service Provider SGP Indonesia, the national parks management in GLNP and WKNP, the grantees of Cycle 1, the local communities, and the local governmental offices in GLNP and WKNP.

A combined technique has been used during the assignment, namely primary and secondary data collection. Primary data collection involved Focused Group discussions (FGDs) and in-depth interviews with representatives selected of AHP surrounding villages, AHP management, local communities, local NGOs, relevant government officials, and other stakeholders in GLNP Area 3 and WKNP. Data collected included social and economic status of households in AHP neighbouring villages, land tenure status, livelihood sources both AHP forest-based and non-forest based, level of conservation awareness of farming communities in AHP neighbouring communities, community development activities involving AHPs (AHP management officials), status of ecotourism activities, both those in the jurisdiction of AHPs and those located in AHP neighbouring villages that have been designated as SGP intervention priority areas.

Meanwhile, secondary data collection included reviewing relevant documents provided by ACB as well as published materials from credible sources. Secondary data entailed obtaining published CMP reports, AHP reports, previous assessment reports conducted for SGP implementation such as short term experts' reports on the livelihood and ecotourism, ACB's initial assessment on the pool of indicators, district/provincial statistics agency publications, grantees' reports, and other published documents on social and economic aspects of the population in the districts covered by the two parks to determine various sources of income for people living inside and outside the two AHPs. In addition, data on the social and economic status of AHP neighbouring villages that have been designated as SGP intervention priorities were collected from various 'external' sources including the central bureau for statistics (BPS) specifically *Profil Desa* (village profile) reports in each village, district and provincial government publications, AHPs, local NGOs, community leaders, academic reports related to AHPs and communities adjacent to AHPs, and central government (Ministry of Environment and Forestry). These data and information included:

- Social and economic developments statistics of the AHP neighboring villages (village and district governments);
- Relevant biodiversity, socio-economic, and livelihood data; and,
- Maps of forest cover and zoning areas.

### **Fieldwork Locations**

Justification on the sites' selection is based on these following criteria:

- a. Represent at least one resort in the national parks;
- b. Represent the variation of socio-economic condition and relation with GLNP and WKNP; and,
- c. Included in the programme intervention of SGP.

The primary data collection was conducted in two national parks with the reference from the CMPs. This is worth noting that the approach used in this assessment is focused on the villages since the data collection were using village-based activities. Meanwhile, in both national parks, the resort approach is usually used to manage the parks. The team used village-based approach with the consideration that most of the communities living surrounding national parks have the livelihood assets formally established through village development structures. Even though in some cases, there are communities currently living in the AHP areas, but their status is attached in the buffer villages as the member of Conservation Forest Farmer Group or *Kelompok Tani Hutan Konservasi* (KTHK)<sup>1</sup>, borrowing the local term. Initially, the team conducted data collection in 17 villages in total for both Gunung Leuser and Way Kambas.

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<sup>1</sup> KTHK is a farmer group consisting of farmers who cultivate land within the national park. This is legally permitted by signing an agreement with the management of National Park. As individuals, the farmers are administratively the villagers of the buffer villages. One KTHK may consist of farmers from different buffer villages. The term KTHK is used not only as a group but also as an area managed within a National Park. There are KTHK members who visiting their farms regularly back and forth (from KTHK to their village residence in buffer village), some live within the KTHK area.

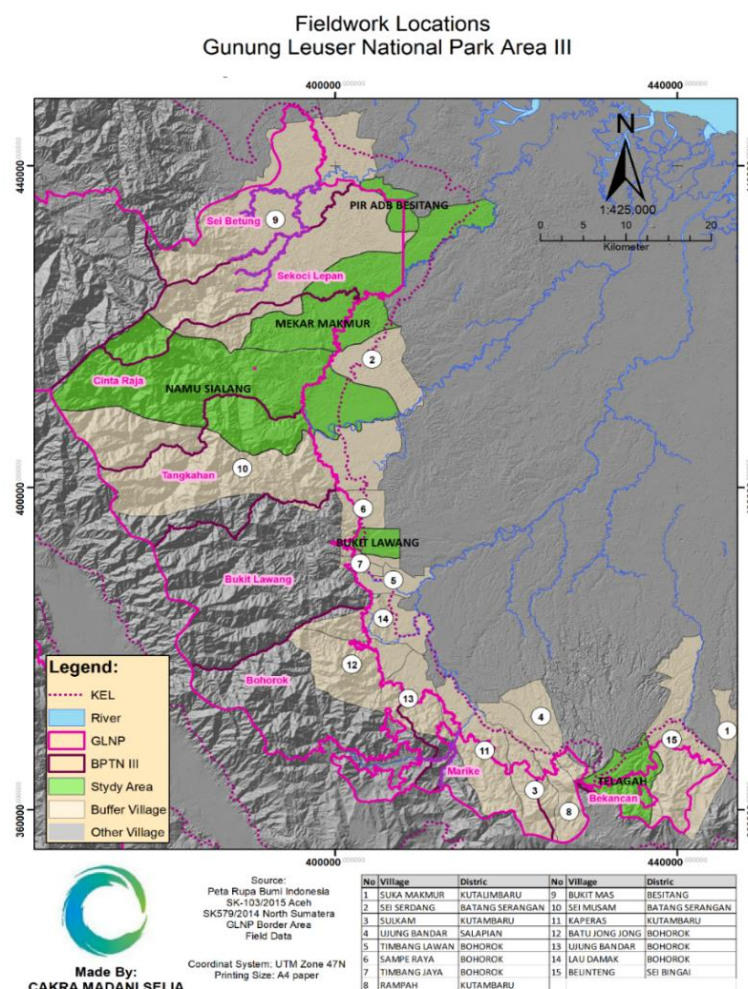
However, due to data cleaning and analysis, only 10 villages were found to have complete data on all the indicators that were analysed. Therefore, for this assessment, the analysis is based on the 10 villages as described in the two tables below.

For Gunung Leuser, the sites studied include Sei Lapan, Sei Bingai, Bahorok, Besitang, and Batang Serangan, which are in area 3 of GLNP in Langkat Regency. The team initially had a plan to visit KTHK Sekocilepan, but until the fieldwork finished the team was not granted the permission to enter the national park area. Thus, the team only conducted the data collection and analysis based on the findings from buffer villages surrounding the national parks.

**Table 1. Field location in GLNP**

No	Administration area		Area		
	Village	Sub-district	Regency	Resort	NP
1	Mekar Makmur	Sei Lapan	Langkat	Sekocilepan & Cinta Raja	GL
2	Pir ADB	Besitang	Langkat	Sekocilepan	GL
3	Namo Sialang	Batang Serangan	Langkat	Cinta Raja & Tangkahan	GL
4	Bukit Lawang	Bahorok	Langkat	Bukit Lawang	GL
5	Telagah	Sei Bingai	Langkat	Bekancan	GL

**Figure 1. Fieldwork Locations in GLNP**



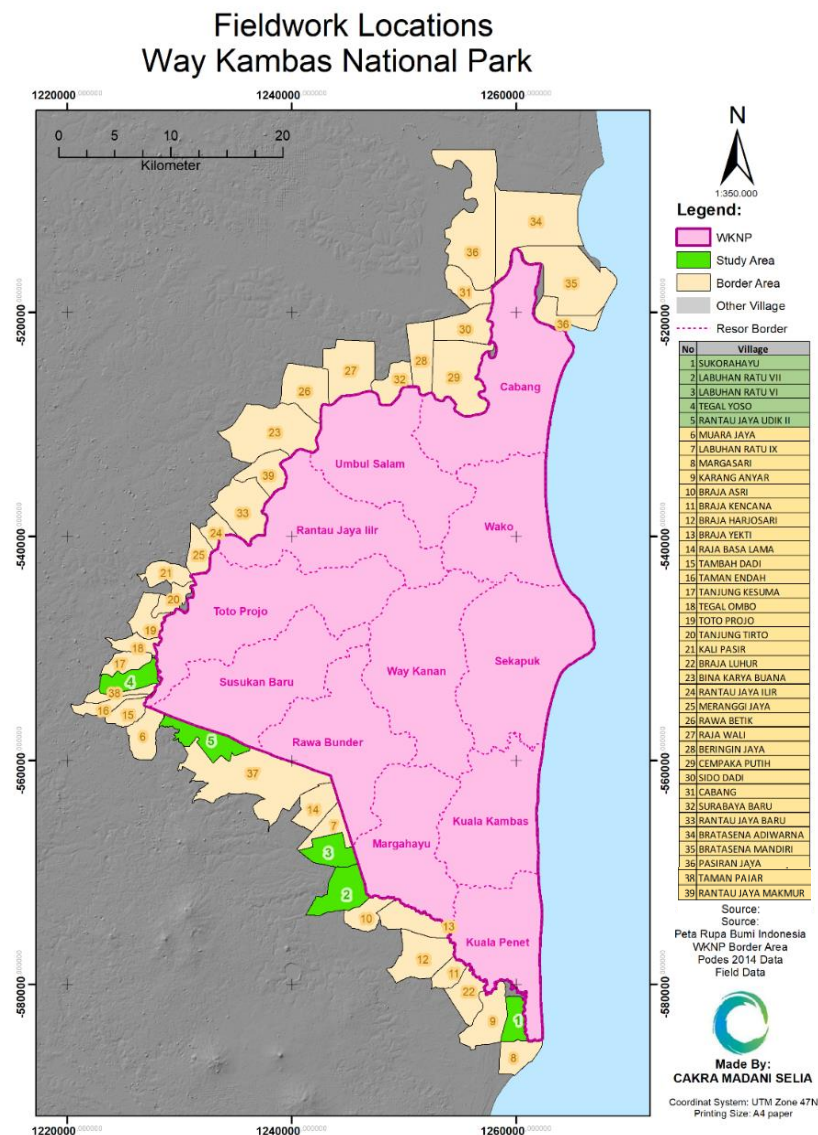


In Way Kambas, the fieldwork was done primarily in East Lampung Regency that spread out in Labuhan Maringgai, Labuhan Ratu, Sukadana, and Purbolingo.

**Table 2. Field location in WKNP**

No	Administration area		Regency	Area	
	Village	Sub-district		Resort	NP
1	Labuhan Ratu 6	Labuhan Ratu	Lampung Timur	Margahayu	WK
2	Labuhan Ratu 7	Labuhan Ratu	Lampung Timur	Margahayu	WK
3	Sukorahayu	Labuhan Maringgai	Lampung Timur	Kuala Penet	WK
4	Rantau Jaya Udik II	Suka Dana	Lampung Timur	Susukan Baru	WK
5	Tegal Yoso	Purbolinggo	Lampung Timur	Toto Projo	WK

**Figure 2. Fieldwork locations in WKNP**



The schedule of fieldworks and FGDs as reflected in the two tables below.

**Table 3. Fieldwork schedule**

No	Administration area	Area		Date
	Village	Resort	NP	
1	Mekar Makmur	Sekocilepan & Cinta Raja	GL	7 December
2	Pir ADB	Sekocilepan	GL	8 December
3	Namu Sialang	Cinta Raja & Tangkahan	GL	10 December
4	Bukit Lawang	Bukit Lawang	GL	11 December
5	Telagahh	Bekancan	GL	12 December
6	Labuhan Ratu 6	Margahayu	WK	18 December
7	Labuhan Ratu 7	Margahayu	WK	18 December
8	Sukorahayu	Kuaa Penet	WK	19 December
9	Rantau Jaya Udik II	Susukan Baru	WK	20 December
10	Tegal Yoso	Toto Projo	WK	20 December

**Table 4. FGD schedule**

No	Administration area	Area		Date
	Village	Resort	NP	
1	PIR ADB	Sekocilepan	GL	8 December
2	Sei Serdang	Cinta Raja	GL	9 December
3	Bukit Lawang	Bukit Lawang	GL	11 December
4	Lau Damak	Bahorok	GL	11 December
5	Sukorahayu	Kuaa Penet	WK	19 December
6	Tegal Yoso	Toto Projo	WK	20 December
7	Labuhan Ratu 7	Margahayu	WK	20 December

#### 1.4. Limitation and Challenges

The COVID-19 pandemic has had a significant impact on the assessment, the fieldwork team had to follow all the health protocols including taking the PCR test before going to the GLNP and WKNP, and on the way back to Yogyakarta, wearing masks and maintaining physical distancing protocol policy during interviews and FGDs. The time spent on the fieldwork must be allocated for the protocol that means less time for the data collection. With the limited time, the fieldwork activities basically went well, except for the opportunity of the team to conduct data collection in KTHK Sekocilepan in GLNP due to permit-related matters. The GLNP management did not issue the permit until the last day of the fieldwork considering the conflict situation in the area.

Second challenge that the team encountered during the assessment was the delay in obtaining permit from the national authority which had adverse impact on subsequent deliverables. The delay in obtaining the permit to conduct fieldwork activities for instance led to the decision to abandon one of the phases of primary data collection, that required sending questionnaires to prospective respondents prior to having FGDs and in-depth interviews. Third, the timing of the conducting of fieldwork proved a challenge. This is because the collection of data was done toward the end of the year, which is a time when some respondents were busy with end of year work, hence not available for FGDs and in-depth interviews.

## **II. Baseline Gaps of Collaborative Management Plans (CMPs)**

It is important to note that in this Chapter there are two different approaches applied in the two national parks as mentioned in Chapter I. GLNP applies the resort-based approach that includes the national park areas. On the other hand, WKNP uses the village-based approach that does not necessarily directly include the park areas. Relevant to this assignment, the analysis of the data findings in those two parks is also differentiated based on the different approaches.

### **2.1. Review on the CMPs**

Collaborative Management Plans (CMPs) are used as the basis of programme implementation for the Small Grants Programme in Indonesia. The CMPs were developed and approved in 2018. The CMPs can be used as a reference for the local stakeholders for programme implementation. Both GLNP and WKNP have developed the Long-Term Action Plans for the period of 2010 – 2019 as stated in the *Rencana Pengelolaan Jangka Panjang (RPJP) Taman Nasional* or Long-Term Action Plans for the National Parks in both parks. The CMPs were then developed as the complementary of the established Plans, especially for the period of 2018 – 2023. The CMPs were developed with the participations of the local stakeholders.

#### **Review on the CMP of GLNP**

Within the CMP context, the strategies stipulated in each sub-programme are based on the ten new ways of managing conservation areas that include (CMP, 2018: 36):

- 1) Community as management subject
- 2) Respect to Human Rights
- 3) Cooperation among Directorate General – level within MoEF
- 4) Cooperation among related Ministries
- 5) Respect to cultural and customary values
- 6) Multi level leadership
- 7) Scientific based decision support system
- 8) Resort (field) based management
- 9) Reward & mentorship
- 10) Learning organisation

Based on the observation, what is provided in the CMP is mainly the list of programmes that is broadly grouped into two, namely strengthening biodiversity conservation and strengthening self-reliance of adjacent villages to reduce dependency on GLNP forest products as a source of living (Livelihood program).

The biodiversity conservation programmes include:

- a. GLNP institutional and management improvement.
- b. Community Outreach and Conservation Awareness Sub-programme.
- c. Biodiversity inventory, identification and monitoring sub-programme.
- d. Ecosystem Restoration and Rehabilitation; and,

e. Law Enforcement Sub-programme.

In terms of management, the breakdown intervention programmes include:

- a. To improve the human resources in achieving the management objectives due to:
  - Limited education background and experiences of the staff
  - Staff relocation
  - Limited personnel
  - Lack of capacity of the resort.
- b. To revisit the forest potential utilization for local communities in adjacent areas.
- c. To resolve land tenure conflict in specific areas; and,
- d. To increase the community involvement and empowerment.

Meanwhile, the livelihood programme consists of several sub-programmes including Community Development Sub-Programme and Ecotourism Sub-Programme. For the livelihood improvement, the CMP focuses on several interventions, such as creating product innovation, livelihood development, and accessing market for members of the Conservation Partnership. In addition to the livelihood intervention, especially for the ecotourism, the CMP proposes several interventions that include institutional strengthening, visitor management, capacity improvement, product diversification to a wider market, as well as improvement of the facilities and infrastructure related to the tourism designation in Area III.

Observation on the CMP based on the above main programme interventions related to the baseline data and information is reflected in the table below.

(1) Biodiversity programme

Sub- Programme	Observation
Co-Management and Area Management Sub-Programme	No baseline indicators on nature of obstacles in current management, number of GLNP boundary guard posts or equivalent, and personnel. Such data and information are not available in the CMP. The available data limited to human resources and institutional capacity, especially regarding the number of staff, its education, and its age.
Community Outreach and Conservation Awareness Sub-programme	No availability of data on list of forestry regulations, measures or indicators of community perception and understanding about conservation related issues. The limited information on the forestry regulations and stakeholders' involvement are presented in the CMP.
Biodiversity inventory, identification and monitoring sub-programme	No baseline information and data on existing biodiversity count on key species (rhinos, elephant, tiger), and equipment and tools, frequency of conflicts with buffer villages by animal species. The data available only include the type of forests, number of Mammalia, and birds.
Ecosystem Restoration and Rehabilitation Sub-programme	No data is available for Ecosystem Restoration and Rehabilitation including area of the national park that is critical or degraded hence need restoration, level or length of damage to world life corridors
Law Enforcement Sub-programme	No data on baseline or initial condition data prior to implementing the sub-programme that include institutional capacity of ranger patrol units in terms

	of equipment, personnel, education, and training, and reach of patrol or supervision activities
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(2) Livelihood programme:

Sub-Programme	Observation
Community Development	Baseline data on degradation or deforestation is needed but not provided. In addition, such data on community perception about handicraft and a measure of market potential for handicrafts are not available.
Ecotourism	<p>As regards to promoting ecotourism development, data are needed on existing institutional community-based organizations, accommodation, infrastructure and supporting facilities such as public health clinics, tourist guides, tourism brochures, educational attainment, and community perception about ecotourism. Moreover, since the main goal of the livelihood programme is to strengthen community livelihood from non-forest products, indicators on household income or expenditure, main source of employment, contribution of forest products-based income to household income, should be provided but not available.</p> <p>The information provided in the CMP was mainly about the short description of tourist destinations in Bahorok Resort, Bukit Lawang Resort, Tangkahan Resort, Bekancan Resort, and Sekoci Resort. In addition, information about existing community-based tourism in Batu Katak is also mentioned.</p>

While one would expect to find indicators of the initial conditions of the activities of the programmes in evaluation tables, this is not the case. This is because such tables are limited to presenting activities and benchmarks of progress and timeframe. This applies to all programmes. Thus, in general the interventions are detailed as regards the objectives, expected outcomes, activities that are required to produce the output (deliveries), funding required, timeline, and partners to be involved in collaborative implementation of the activities. However, the CMP does not present any information and data on baseline/initial conditions or indicators that are important indications of the condition before the intervention that should serve as a reference with which to compare the outcome and impact of the intervention. Having said that, the CMP is limited to guide the programme intervention in the output level, especially to give a reference for programme implementation of SGP.

### Review on the CMP of WKNP

Unlike GLNP, the WKNP management uses the village-based approach for programme intervention. Specifically, for WKNP, the CMP is divided into 7 main strategies that includes:

1. Strategy of WKNP institutional strengthening at site level (Resort);
2. Strategy of a whole WKNP area protection, the biodiversity and its ecosystem;
3. Strategy of flora and fauna preservation through data and information update and its development;
4. Strategy of habitat development through ecosystem recovery;

5. Strategy of local community critical awareness enhancing toward the WKNP area sustainability;
6. Strategy of village spatial plan integration through assisted village model, and integrated ecotourism model development; and,
7. Strategy of integrated WKNP area planning and development with related stakeholders, through the conservation partnerships development defining role and benefit sharing scheme in the natural resources and ecosystem protection and utilization.

The seven (7) strategies above were materialised into two (2) main programme interventions and 9 sub-programme interventions, as described below.

1. Natural Resources and Ecosystem Conservation Programme  
Sub-programme:
  - a. Development of Resort based Management/RBM system
  - b. Area Protection & Safeguarding
  - c. Flora and Fauna Preservation
  - d. Ecosystem Restoration
2. Community Livelihood Improvement Programme  
Sub-programme:
  - a. Community outreach and conservation awareness
  - b. Community development focuses on agricultural and forestry commodities.
  - c. Development of priority village model ('Desa Binaan')
  - d. Development of integrated ecotourism model
  - e. Strengthening stakeholder collaboration in the area of WKNP (Conservation Partnership)

Based on the above programme interventions provided in the CMP of WKNP, the observations on the gap's analysis are provided in the analysis below.

#### (1) Natural Resources and Ecosystem Conservation Programme

Sub - Programme	Observation
Development of Resort based Management/RBM system	<p>The aim of this sub-programme is to strengthen the capacity of human resources by enhancing quality and quantity of personnel at the resort level, contains detailed accounts of activities, coverage, budgeting earmarks, timeline but lacks indicators on conditions of all aspects that were the focus of intervention, making future evaluation of programme performance difficult to gauge.</p> <p>Specifically, as regards capacity building, CMP on WKNP does not provide any data on the status of planning for development activities which has been used, in which aspects it underperformed to justify the proposed resort-based management; existing human resource capacity and competence at the resort level</p>
Area Protection & Safeguarding	The aim of this sub-programme is improving protection of biodiversity, strengthening mitigation system of ecosystems by reducing the impact of forest and land fires, wildlife conflicts and forest crimes. The strategy has a

	<p>detailed description of activities, coverage, implementation timeline and projected expenditure but does not have indicators of the initial conditions of the areas that are the focus of the interventions.</p> <p>On improving biodiversity protection and conservation, the CMP does not provide the reader with details on the status of biodiversity count, spread, vulnerability, existing surveillance and protection capacity, frequency of forest crimes, conflicts between buffer villages and animals from the national park, level of monitoring posts and joint supervision, number and capacity of forest rangers and ranger partner communities.</p>
Flora and Fauna Preservation	<p>The main goal of the sub-programme is to strengthen flora and fauna protection and conservation through improvement in data and information collection, update and its development provides the indicative budget, coverage and timeline but does not contain data on current conditions of flora and fauna in general and elephant and rhino population in particular as the main focus of the programme. As is the case in other proposed intervention areas, CMP report does not provide details on initial conditions/baseline status of activities such as current research on flora and fauna, level of fauna and flora monitoring capacity, level of inventory of native vegetation types and carbon storage studies, conducting an inventory and mapping of key species activity, is not explicit on the current practices and operating procedures used in managing rhino and elephant populations, current level of performance of the elephant training center (PLG) and SRS Management (human resources, facilities and so on). CMP does not give any measure of seriousness that cow dung poses to rivers that traverse WKNP (hence ecosystems and habitats), which would justify the inclusion of the activity on the list of key activities.</p>
Ecosystem Restoration	<p>The aim of this sub-programme is to restore habitat and ecosystems by mitigating the impact of past actions such as fires, illegal logging, encroachment, and illegal hunting on WKNP area. Data on deforestation during 1996-2010 is provided, and the percentage of land in WKNP that is critical is also available (33% of total area). While critical land that is 33 % of forests in WKNP is easily obtained just by converting the percentage into hectare given the fact that data on total area of WKNP is known, it is not clear whether the level of deforestation in 2018 was still the same as that given in 2010. While CMP sets the target of restoring 2000 Ha during the ecosystem's restoration programme, it does not provide the current status of endangerment that the ecosystem faces to justify the restoration (level of encroachment, critical land, deforestation, illegal logging, and hunting activities).</p>

## (2) Community Livelihood Improvement Programme

The strategy of the local community critical awareness enhancement toward WKNP area sustainability aims to strengthen public awareness of the importance and value of environmental conservation through socialisation and education activities. Hence the contribution of WKNP, like other strategies have a detailed description of activities, villages that are the beneficiaries, budget earmark for each activity and timeline, but there are no indicators of the level of public awareness or lack of thereof, measure of practices that may help to gauge level of public understanding of the importance and value of conservation, or indicators of the perception of people's attitudes and beliefs about the need for environmental protection.

To evaluate the performance of all the sub-programmes in the community outreach and conservation awareness including promoting agricultural and forestry commodities, development of priority village model ('Desa Binaan'), development of Integrated Ecotourism Model, and strengthening stakeholder collaboration in the area of WKNP (Conservation Partnership), there should be a prior assessment of the social and economic conditions to determine the status of the households in the villages that will be beneficiaries of the interventions. Such indicators should include number of family members, number of working family members, current status of livelihoods including source, level of income/expenditure, commodities grown, gender ratio, health and education status and village institutional framework (including existence of extension field officers, village administration personnel, village regulations, extent to which village households apply conservation practices in conducting economic activities that are the source of livelihoods. Nonetheless, to determine whether or not interventions that are proposed achieve their main goal, which is to reduce dependency on national parks for livelihoods, there is a need for information on the proportion or level of dependence of village households on accessing national park resources including forest products, fishing, grazing livestock, hunting wildlife and water for household and farming and livestock activities. CMP does not provide such data and information, which has the potential to complicate any efforts to measure the impact of any interventions that will be made toward reducing dependency of buffer village communities on National Park resources.

The strategy of village spatial plan integration through assisted village model, and integrated ecotourism model development aims to create synergy in the formulation and implementation of development plans for WKNP with those of buffer villages. The expectation is that the integration of spatial planning and development of WKNP and those of adjacent villages will enhance the effectiveness of community development activities, strengthen ecotourism development initiatives, reduce duplicity, and enhance efficiency of resource use and targeting. The program is clear on the details of the activities; villages are the focus of interventions, estimated budget outlays, and timeline. There is, however, the lack of data on the base line of status of the activity of the programme prior to the commencement of programme activities. The same applies to the Strategy of integrated WKNP area planning and development with related stakeholders, through the conservation partnerships development defining role and benefit sharing scheme in the natural resources and ecosystem protection and utilisation. For instance, one of the activities proposed for the program is to promote organic farming and ecotourism development. Gauging the performance of the programme, would thus be easier if indicators of the before-the-intervention status of the potential village beneficiaries of the program with respect to organic farming and ecotourism were included in the programme description (logistic framework). Such indicators may include households with knowledge and experience in organic farming as reflected in growing crops using organic farming practices, market for those commodities, and contribution to household income or livelihood, among others. The



same applies to ecotourism development. However, CMPs provide explicit details on tourism attractions to serve as center of attraction in ecotourism development. Indicators on households in targeted villages that are involved in ecotourism activities, skillset and experience in hospitality services, facilities are available to support ecotourism activities (homestay, infrastructure, basic health services, contribution to household income or livelihood, among others).

## **2.2. Baseline Gaps Analysis of CMPs**

Aside from the gap analysis provided in each national park mentioned in the previous sections, this section also provides observation of the CMPs' gaps in more general manner. CMPs as the guideline document for SGP Indonesia provides limited data on the programme indicators and baseline information. The indicators were designed to cover mostly at output level. The gaps identified when the programme need to be assessed on the higher level such as outcome and impact require macro level that contributes to the achievement of the programme's objective.

The gaps that were found referring to the set of indicators on the CMPs are:

- a. The concept of collaborative management plan should be indicated the multisectoral partnerships, not only referring to limited partnerships of intended stakeholders. The lack of "collaboration" with the local government offices such as at the village, district, and regency levels are still present in the CMPs, while these parties/stakeholders are important to be included not only in term of livelihood improvement for the communities, but also in term of biodiversity protection since. In the CMP of WKNP, these stakeholders were included in the form of village model programme or Desa Binaan, but none in the GLNP. Although, the information gathered from Technical Progress Report (TPR) of local implementing partners shown that one of the partners (Yayasan Ekosistem Lestari) conduct activities to establishment of conservation regulation in village level which called Peraturan Desa (PERDES), therefore this element has covered for GLNP. For the context of Indonesia, this approach (to include local stakeholders at governmental offices) is important considering the existence of communities that are living in surrounding area of the national parks. The village approach also provides the room for programme interventions for those who are living in the buffer zone of the national parks with various options of livelihood, so that the communities will not be depending on the national parks but have more alternatives to do so. Community forestry programmes that have been applied in Indonesia for some time can be a good example for the SGP implementation.
- b. In term of socio-economic and livelihood, the indicators related to the agroforestry programme and non-timber forest products (NTFPs) have limited foundation in identifying the assessment of the featured products, that include the value chain assessments. Moreover, the indicators that reduce the dependency of the communities to the national parks were also limited to be

identified in the CMP of GLNP, while in the WKNP it was mentioned about the options of the livelihood alternatives such as biogas, fishing ponds, and ecotourism that were included in the priority village model or *Desa Binaan*.

- c. In term of biodiversity related issues, the main challenge to achieve the goal of SGP programme in Indonesia was considered as the threat of illegal activities inside the national parks area and the human-animal conflict. The strategies, programme, and indicators related to these matters are only available in CMP WKNP (programme number 2), but none in CMP GLNP. In both CMPs however, there is no assessments related to orbitation of the fauna and the sufficiency supply for the fauna inside the parks. The biodiversity index was not found in both CMPs and any other related documents for SGP Indonesia. The effectiveness score in the national park (in PMM document) was also identified in the CMP WKNP, especially in the form of training. While in GLNP the programme was formulated in the activities such as meeting with relevant stakeholders but there was no further description to measure the effectiveness score that is broken down into some measurable criteria. In the CMPs, the indicator of trainings and meetings are only referring to the numbers or frequencies. For example, in WKNP it was set nine (9) training packages for 60 staff; and in GLNP was set 60 coordination meetings or 30 socializations to relevant stakeholders. However, impact level indicator on management effective score using METT align with MOEF indicator is used to accommodate vary activities in both AHPs that contributes to the achievement of the management effectiveness of the AHPs.

The gaps were also contributed by the development of the SGP indicators at outcome and impact level identified in the PMM document in 2019 later than CMPs that was designed in 2018. Therefore, the alignment of the indicators from output, outcome, and impact are relatively limited. The development of outcome and impact indicators specific to Indonesia context is necessary to ensure the alignment with the output indicators mentioned in CMPs is strong.

The data relevant to the programme indicators that can be treated as baseline data provided in the CMPs is also limited. Based on the review of the CMPs, the programme formulated in CMPs for both AHPs are expected to have differences as it was designed based on each individual AHP context. Programme designed for GLNP has more activities to support the biodiversity and to lesser extent to support livelihoods. There are five sub-programmes to support biodiversity and two sub-programmes to support livelihoods. In a different context with WKNP, the programme designed for GLNP has less activities to support biodiversity with four sub-programmes and more activities on the livelihoods programme with five sub-programmes. However, both documents designed almost similar load of programmes considering the total number of indicators are in between 43-44 output indicators.

In addition to the relevancy of the set of output indicators designed in CMPs are partially followed by the current SGP implementations. The Technical Progress Report (TPR) of the grantees presents that some output indicators align with CMPs using different terms although the definition is likely similar.

Programme	Sub-programme			
	GLNP	Number of Output Indicators	WKNP	Number of Output Indicators
Biodiversity	1. Co-Management and Area Management	5	1: Development of Resort based Management/RBM system	5
	2. Community Outreach and Conservation Awareness	8	2: Area Protection and Safeguarding	7
	3. Biodiversity inventory, identification and monitoring	7	3: Flora and Fauna Preservation	7
	4. Ecosystem Restoration and Rehabilitation	4	4: Ecosystem Restoration	2
	5. Law Enforcement	4		
Livelihood	1. Community Development	7	5: Community outreach and conservation awareness	2
	2. Ecotourism	8	6: Community development focuses on agricultural and forestry commodities	3
			7: Development of priority village model ('Desa Binaan')	8
			8: Development of Integrated Ecotourism Model	5
			9: Strengthening stakeholder collaboration in the area of WKNP (Conservation Partnership)	5
Total Numbers of Output Indicators		43		44

### Indicators in the PMM Indonesia as a Guideline

In the succeeding chapters, the analysis will be based on the existing indicators provided for the Indonesia context that is available in the PMM Indonesia. The analysis is guided by set of indicators stated in the PMM Indonesia. It is worth noting, however, that the analysis will be based on the outcome and impact indicators of the SGP in Indonesia.

The tables below reflected the flow of the data gathering on the impact and outcome indicators of SGP implementation in Indonesia, with particular focus on the Objectives A and B of the SGP implementation. The consultant team retained the Objective C since it will be applied at the regional level or conducted by the ACB instead of a country partner (Indonesia).

## Impact Level

<b>Goal: Contribute to the biodiversity protection and management of natural resources in the ASEAN region</b>	
<b><i>Objective A (Impact level): Improve biodiversity protection in line with the interest of local population directly dependent on selected AHPs and adjacent areas</i></b>	<b><i>Objective B (Impact level): Improve livelihood of local communities directly dependent on selected AHPs and adjacent areas</i></b>
A. 1. Vegetation Cover	B. 1. School attendance/ Educational level (human capital)
A. 2. Species Count	B. 2. Health status (human capital)
A. 3. Biological Diversity	B. 3. Women's income generation (human capital)
A. 4. Patrolling Effort	B. 4. Youth Migration
A. 5. Attitudes and Behavior	B. 5. Local culture (Social Capital)
A. 6. Management Effectiveness	B. 6. Religious system (Social Capital)
	B. 7. Conflicts brought about by the changes in the landscape (social capital)
	B. 8. Livelihood Changes (natural capital)
	B. 9. Income (Financial Capital)
	B. 10. Village Development Status

## Outcome Level

Objective A (Impact level): Improve biodiversity protection in line with the interest of local population directly dependent on selected AHPs and adjacent areas.

<b>Thematic Area 1: General Park Management</b>	<b>Thematic Area 2: Wildlife Research and Monitoring</b>	<b>Thematic Area 3: Law Enforcement</b>	<b>Thematic Area 4: Habitat and Species Management</b>	<b>Thematic Area 5: Community Outreach and Conservation Awareness</b>
<b><i>Outcome 1: Increased collaboration of stakeholders for park management</i></b>	<b><i>Outcome 2: AHP's key species are protected and/or conserved</i></b>	<b><i>Outcome 3: Established and/or increased SMART patrolling effort for the protection of AHP</i></b>	<b><i>Outcome 4: Degraded habitats of AHP's are rehabilitated and habitats are protected for species protection and conservation</i></b>	<b><i>Outcome 5: Increased community conservation awareness</i></b>
Indicator 1.1. Conservation	Indicator 2.1. Conservation action (policy, program, project)	Indicator 3.1. Monitoring and patrolling persons day/month and km2	Indicator 4.1. Reforested areas using nature species.	Indicator 5.1. Community perception
Agreements Indicator 1.2. Area under appropriate zoning	Indicator 2.2. Key species count		Indicator 4.2. Habitats protected against fire/burning	Indicator 5.2. Media mention

Indicator 1.3. Management plan implementation score				
Indicator 1.4. Staff competence level				
Indicator 1.5. Community participation in management committee				

### Outcome Level

Objective B (Impact level): Improve livelihood of local communities directly dependent on selected AHPs and adjacent areas.

<b>Thematic Area 6: Community Development</b>	<b>Thematic Area 7: Ecotourism</b>
<b><i>Outcome 6. Decreased pressure to AHP brought by socio-economic activities</i></b>	<b><i>Outcome 7: Provision of alternative source of livelihood and income</i></b>
Indicator 6.1. Community Land Use plan	Indicator 7.1. Community/ villages doing ecotourism
Indicator 6.2. Extension agent visits	Indicator 7.2. Park income.
Indicator 6.3. Vegetable beds	
Indicator 6.4. Yield of commodity	

From the tables above, the consultant team has collected the data and information, both from the secondary and primary sources. The findings are reflected in the succeeding sections.

### **III. Assessment Findings – Biodiversity Conservation**

The analysis of the biodiversity and livelihood components will be divided into two main parts, namely at the Impact Level and at the Outcome Level. The analysis will be based on the data findings during the assignment process, which came from the primary and secondary sources. The findings presented in this section will also be based on the two AHPs, both for Gunung Leuser National Park (GLNP) and Way Kambas National Park (WKNP).

#### **3.1. Gunung Leuser National Park**

The area of the national park continues to be inhabited by households that belong to KTHK (conservation area farmer groups). National park management with the collaboration of local non-governmental organizations is currently rehabilitating 6,500 ha of deforested area. Based on the Ministry of Environment and Forestry regulation No.06/2018, KTHK households are allowed to cultivate on land that belongs to the national park based on right to use basis and in compliance with conservation practices. So far 19 KTHK have signed conservation collaboration agreements with GLNP management. In addition, GLNP has forged various partnership arrangements with external partners including Leuser Internasional/YLI, Sumatran Orangutan Conservation Program/SOCP, Orangutan Foundation for Sustainable Sumatran Orangutan Information Center/YOSL-OIC, Veterinary Society for Sumatran Wildlife Conservation/VESSWIC (Conservation Response Unit Gajah in Tangkahan); Wildlife Conservation Society/WCS, UNESCO, and USAID to strengthen institutional capacity, human resource capabilities, and park management.

Based on GLNP RPJP, biodiversity in the natural resources has experienced degradation as reflected in the decline in forest cover that has occurred since 1989. Deforestation of the tropical rainforests of GLNP occurred at a rate of 625 ha/year during 1989-2010 period. Besitang area is cited as the most vulnerable to deforestation because it is inhabited by in-migrants. Encroachment on the national park continues from local communities through slash and burning practices, has contributed to the reduction of vegetation cover, aggravated forest fires, illegal logging, and disasters such as floods and landslides.

Low public awareness of the importance and contribution of GLNP to ecosystems and societal wellbeing, is in part attributable to the limited contribution of the GLNP to key problems the local population face including poverty reduction, land shortage, low education access and attainment, limited access to credit, short term horizon of people's outlook to investment and life. Such obstacles, among others have prevented the leveraging of key societal assets among local communities including various forms of local wisdom, social capital, and using negotiations and consensus in resolving disputes to enhance social and economic development.

Findings in the impact level refer to the indicators in PMM Indonesia are described below. The details are presented in Annex. 3, Table 3A.1. There are eight (8) indicators following six key results areas: area coverage (in km<sup>2</sup>) of natural vegetation cover (i.e. mangrove, dipterocarp forest, etc.); population counts of key species; population counts of rare species; Biodiversity Index; threats to biodiversity protections; cases filed for prosecution related to biodiversity protection; attitudes and behaviour scores; and effectiveness scores.

In key result areas vegetation cover, the data is not available for the area coverage (in km<sup>2</sup>) of natural vegetation cover (i.e. mangrove, dipterocarp forest, etc). Whilst for the species counts key result areas, the data found partly covering flora with more than 4000 species and three parasite flowers, and fauna with 350 species of birds, 36 species of sundaland birds and 129 Mammalia species. The data on key species is only available on Sumatran Elephant predicted to be 16-200 and Sumatra Tiger was 100 in 1992.

In the documents collected, data in CMPs or Long-term Plan of the two National Parks and other sources, there is no data available on Biodiversity Index. Like attitudes and behavior, there is no secondary data/survey conducted related to this indicator.

Threats to biodiversity protection to indicate key result area Patrolling Effort, from GLNP data on SMART threat observation 2013-2019 shows that the threats consist of 0.5 violators, 3.7 illegal logging, 1.51 hunting, 0.11 fishing, 0.04 forest fires, 2.73 using national park and 0.02 taking Non-Timber Forest Product (NTFP). Figures are the number of observations per 100km of patrol.

The data relevant to the management effectiveness key result area measures using effectiveness scores found in METT (Management Effectiveness Tracking Tool) score (<http://mett.ksdae.menlhk.go.id/Cp00/cari>), a website of Effectiveness of Conservation Area Management in Indonesia published by Directorate of Conservation Areas, Ministry of Environment and Forestry. The score for GLNP in 2017 is 71%.

Components to be included in the Outcome Indicators of Objective A in GLNP include thirteen indicators that are used in the PMM covering general park management (Thematic 1), wildlife research and monitoring (Thematic 2), law enforcement (Thematic 3), habitat and species management (Thematic 4) and community outreach and conservation awareness (Thematic 5). The details are presented in Annex. 3, Table 3A.2 – Table 3A.6.

In Thematic 1, to enhance conservation efforts, GLNP management has signed collaboration conservation agreements with eight local governmental organisations and 19 groups that are eking out a livelihood in the national park. Conservation collaboration agreements bring together the national park, non-governmental

organisations and buffer zone communities in this case people displaced by Aceh conflict in the late 1990s.

The GLNP has been implementing the zoning system in national park management. Based on GLNP RPJP, GLNP identified in its long-term development plan key obstacles to effective conservation protection to include i) uncertainty about the national park boundaries; ii) suboptimal management of the national park; iii) unsustainable use, and iv) low public awareness and participation. Thus, to enhance conservation management, GLNP management proposed the adoption of zone-based management, which divides the park into seven zones inter alia, the core zone (857,175.64 Ha); jungle zone (shrubs and thickets area) (66,921,08 Ha); utilization zone (12,431.78 Ha); rehabilitation zone (143,734,87 Ha); traditional zone (10,495.03 Ha); history, religion and culture zone (73.27 Ha), special zone (1,236.28 Ha). Nonetheless, 2,534,46 Ha (gray zone) of the park is still contentious and remains prone to conflicts between national park management and buffer village communities.

Based on GLNP data and results of a report that assessed the species count in GLNP in 2020, key species in the national park include 7,298 OrangUtans, about 30 Sumatran tigers, 160-200 Sumatran elephants, 100 Sumatran tigers, 106 bird's species from 40 families. In term of rehabilitation and reforestation efforts, GLNP with the collaboration of local NGOs is reforesting 6,500 Ha using native forest trees. This indicates Thematic 2: Wildlife Research and Monitoring

For law enforcement (Thematic 3) related matter, GLNP staff conducted surveillance and patrol of the national park area 270 times in a total 3180 days, covering 13,256 km<sup>2</sup> of the park area. GLNP national still faces threats from encroachment of buffer community population for various reasons including illegal logging, hunting, fishing, medicinal plants and water. Improvement in road infrastructure that traverses in areas in close proximity to the national park poses serious threat to the national park.

In outcome indicators for the Habitat and Species Management (Thematic 4), the data shown that 6500 Ha projected for 2010-2019 period of reforested areas using native trees as part of the rehabilitation zone for 140.600,53 Ha or 12.84% of the total area of the National Park.

In term of conservation awareness (Thematic 5), by 2005 about 3,000 – 4,000 ha of GLNP area in Langkat district had been converted to oil palm plantations. Based on 1989–2009 satellite imagery GLNP experienced deforestation at a rate of 5% a year (625 Ha) due to illegal logging, area encroachment through the expansion of settlements, occupation of the area by Acehnese refugees, oil palm plantations, and other uses, forest and land fires, flooding aftermath. In total, by 2009, 143,734.87 Ha of GLNP had suffered degradation (GLNP, 2009). The national park with the collaboration of local NGOs, and buffer village communities to increase awareness about the value of GLNP ecosystem to the environment and society.



In its long-term development plan, GLNP underscores the need to prevent efforts to convert the functions of protected areas into cultivation area by protecting the functions of natural forests and peatland as nature reserve, cultural heritage, nature tourism, and supporting the establishment of a buffer zone that separates national park area from areas that fall under the management of PT. Perkebunan Nusantara (Nusantara Plantation-State-owned Enterprise) and buffer village communities. To support the effort national park has forged collaboration with local communities in protection national park boundaries from encroachment for purposes of hunting, fishing, and illegal logging. Other initiatives include conducting joint patrols between members of forest rangers' units and buffer community groups, supporting economic development activities that reduce dependency on GLNP resources such as ecotourism.

### **3.2. Way Kambas National Park**

Biodiversity conservation in WKNP is characterized into several features. First, WKNP is surrounded by 37 buffer villages<sup>2</sup>, which has population density of 200 people/km<sup>2</sup>, implying that the national park is located in the area that is in close proximity to people and their economic activities. To that end, WKNP has faced serious encroachment perpetrated by the population living in buffer village communities since 1980s. Based on WKNP RPJP, in the past there were more than 12 settlements that comprised 4,090 households or 18,300 people occupied 5,350 Ha of the park. Nonetheless, those households were resettled in other areas of the district. Despite that, encroachment of national park continues including fishing, hunting, and grazing livestock on WKNP land.

Secondly, the land that used to belong to illegal settlements of 4,090 families has been overgrown by *alang alang* grass, which is prone to fires. In total *alang alang* grass area covers 40,000 ha or 35 % of WKNP (WKNP, 2017). Thirdly, relations between buffer village population and WKNP continue to be affected by disturbances of elephants into buffer village fields that cause damage to crop at a frequency of 5 and 50 animals in more than 150 days a year. Fourth, WKNP faces threat from buffalo herds that still graze inside the WKNP. Despite efforts to deal with the problem, which resulted into the relocation of most of 3,500 buffaloes outside the park, 280 buffaloes continue to graze on national park grass.

Similar to GLNP, findings in the impact level refer to the indicators in PMM Indonesia are described below. The details are presented in Annex. 3, Table 3A.1. There are eight (8) indicators following six key results areas: area coverage (in km<sup>2</sup>) of natural vegetation cover (i.e. mangrove, dipterocarp forest, etc.); population counts of key species; population counts of rare species; Biodiversity Index; threats to biodiversity protections; cases filed for prosecution related to biodiversity protection; attitudes and behaviour scores; and effectiveness scores.

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<sup>2</sup> Rencana Pengelolaan Jangka Panjang Taman Nasional Way Kambas 2017 - 2026

In key result areas vegetation cover, the data is not available for the area coverage (in km<sup>2</sup>) of natural vegetation cover (i.e. mangrove, dipterocarp forest, etc). Whilst for the species counts key result areas, the data on key species is only available on Sumatran Rhinos 27-33, Sumatran Elephant 139, and Sumatra Tiger 12-27.

Like GLNP, there is no data available on Biodiversity Index. However, for attitudes and behavior in WKNP, there is data from PILI study data<sup>3</sup> on the perceptions of the two village buffer villages: Braja Harjosari & Rantau Jaya Udik (page 34). There are 88% of community members in Braja Harjosari village and 33% in Rantau Jaya Udik village with behaviour not accessing NP and 40% community members in Braja Harjosari village and 56% community members in Rantau Jaya Udik village with perception of Hunting, fishing, burning, and destroying the forest is prohibited.

Threats to biodiversity protection to indicate key result area Patrolling Effort, from WKNP data 2019 shows that the threats consist of 17 violators, 23 illegal logging, 234 hunting, 47 fishing, 190 forest fires, 155 opening road access and 116 in constructing equipment and transportation. The last key result area, the same source of data with GLNP, the published data shown that management effective score for WKNP in 2017 is 69%.

Following indicators in PMM document, components to be included in the Outcome Indicators of Objective A in WKNP is similar with GLPN, include thirteen indicators that are used in the PMM covering general park management (Thematic 1), wildlife research and monitoring (Thematic 2), law enforcement (Thematic 3), habitat and species management (Thematic 4) and community outreach and conservation awareness (Thematic 5). The details are presented in Annex. 3, Table 3A.8 – Table 3A.12.

WKNP has signed five (5) agreements with local NGOs and one forest community that is located in Labuhan Ratu VII village (Thematic 1). As for Thematic 2, Wildlife Research and Monitoring, based on available data key species count include 50 mammal species, 314 and 315 avian species-based Parrot & Andrew (1996) and Holmes (1996), respectively. Other species included 17 species of amphibians, 13 species of reptiles, 48 species of freshwater fish and 77 species of butterflies. Specifically, records also indicated based on Long term development plan for WKNP, key species count included 27-33 Sumatran Rhinoceroses, 139 Sumatran elephants, and 12-27 Sumatran tigers.

To protect WKNP as a nature reserve as well as helping buffer village population in reducing disturbances from elephants, collaboration arrangements have been

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<sup>3</sup> Veriasa, T.O. and Indraswati, E. (2020). *Hasrat di Tepi Rimba Memahami Faktor Penentu Sikap dan Perilaku Masyarakat di Pinggiran Taman Nasional*. Asean Center for Biodiversity/PILI Green Network, 2020

established between national park patrol units and local communities. Joint teams of WKNP and buffer village members conduct surveillance and patrol activities. One such group is *Masyarakat Mitra Polhut* (MMP) or Community-based Law Enforcers, which assists national park patrol officials to protect national park boundaries. *Masyarakat Peduli Api* (Community-based Fire Preventor) and *Satgas Gajah* (Community-based Elephant Task Force) are the other two local community-based groups that focus on fighting forest fires and preventing elephants from making incursions into buffer village fields.

Some of the remaining threats to biodiversity that were recorded include 23 incidents of illegal logging, 234 incidents of hunting inside the park, 47 incidents of catching fish inside the park, and 190 incidents of fires. Some 17 perpetrators of illegal access to national park area were identified.

Based on WKNP RJPN, alang alang grass covers an area of 40,000 ha, which represents 35% of total WKNP area. Alang alang grass is very vulnerable to forest fires. Amalina et al. (2016) suggested that of the total area of the WKNP, 42,711.2 hectare of the total area (34%) was identified as facing high level of vulnerability to forest fires, 65,323,1 hectares. (52%) as moderate, and 16,330.8 ha (13%) as low. Existence of Masyarakat Peduli Api (MPA) (forest fire prevention & mitigation community) Masyarakat Model Desa Konservasi or Community-based Conservation Model specifically to tackle elephant disturbances at least 3 resorts that are fire-prone and ex-encroachment areas that can be prioritized for ecosystem recovery planning, namely at Susukan Baru Resort, Rawa Bunder, Kuala Penet, and Toto Projo.

To strengthen the protection of the national park from external encroachment that takes various forms including hunting, illegal logging, hunting, and fishing activities, WKNP supports environmental conservation awareness that involve buffer village communities. One such activity involves the establishment of *Model Desa Konservasi* or the village conservation model, which is supposed to serve as an example on the best way communities can embed conservation principles in their activities and livelihoods. In addition, local communities are actively involved in supporting conservation efforts in other ways such as fighting forest fires and supporting WKNP in supporting the integrity of the park from encroachment. Based on WKNP RPJN, in 2007, the Conservation Village Model Community (MKD) was formed in Brajayekti village with activities including joint handling of elephant disturbances and fostering a buffer village model. In 2004, training in forest fire management was also held at the same location. This activity is a collaboration between TNWK and JICA (Japan International Cooperation Agency).

#### **IV. Assessment Findings – Livelihood**

Similar to the biodiversity component, the livelihood component is also derived from the indicators available in the PMM SGP Indonesia. The indicators were used as a guideline to fill the baseline gaps data and information provided both in Collaborative Management Plans and the long-term action plans for Gunung Leuser and Way Kambas national parks.

##### **4.1. Gunung Leuser National Park**

Based on the village analysis assessment, the socio-economic conditions and communities of the GLNP buffer villages are divided into two groups. The first group is a group that depends on their livelihoods in the GLNP area. This group is in the area of the TN area VI Besitang management section to be precise in the Sekoci Lepan resort. To conduct this first group study, the villages that were the focus of the study were PIR-ADB Village and Mekar Makmur Village. Village Description PIR –ADB is a plasma nucleus plantation village that does not have a land expansion area to accommodate the population growth rate in the village. Meanwhile, the people of Mekar Makmur Village, some of the villagers are former victims of the Aceh refugee conflict who opened the GLNP area around the 2000s. In order to fulfil agricultural land for farmers in the two villages, some communities open natural forests and turn the area into residential and agricultural areas. A condition that has been going on for the last 20 years and still continues today. As one of the strategies to reduce the threat of the AHP area, the GLNP management and its partners have facilitated to develop community groups to play an active role in conserving the AHP area through the conservation forest farmer group (KTHK) scheme. The form of mentoring and facilitation that the farmer group uses are adjusted to the KSDAE Perdirjen Regulation-No: 6/2018 on conservation partnerships. By December 21, 2020, there were 14 KTHK groups that have entered into a cooperation agreement as one of the conditions for managing land and forest areas in the GLNP area.

The second group is a group that is very concerned about the sustainability of the forests in the GLNP area. They are very aware and have enjoyed the economic benefits of the forest area they are currently protecting. The buffer villages that are the focus of this study are Namo Sialang Village and Tangkahan Village and Telagah Village. This group is a village representative who gets economic benefits through the management of developing ecotourism potential. There are dozens of tourism potentials in the GLNP area, especially in area III that has been developed by partners with the buffer village community. Although some of these ecotourism points do not develop due to internal conflicts in ecotourism management. From the dozens of potentials, there are at least two ecotourism areas that are included in the national tourism strategic area (KSPN), namely Ecotourism Bukit Lawang and Ecotourism Tangkahan. The two tourist destinations have had a significant impact on supporting the community's economy for the GLNP buffer village.

The characteristics of livelihood for the communities living in and around GLNP areas range around various sources from both the forest and off the forest. The communities living in villages inside the areas near GLNP affect and are affected by the existence of the national park. The national park is a source of life sustaining that includes water, firewood, medicinal products, food commodities, fishing, rattan, and source of off farm income through honey harvesting among others. The national park plays an important role especially for village members of KTHK, who are former in-migrants from Aceh that are currently occupying part of GLNP to earn a living since their entire livelihood is dependent on GLNP. In addition, the existence of the national park is an important source of livelihood for AHP neighbouring villages through the services and the products that they sell to tourists.

Nonetheless, the proximity of GLNP has been a source of recurring problems for AHP village communities, including destruction of farm produce by elephants, hedgehogs, and porcupine; source of conflicts with GLNP patrol units that are charged with protecting GLNP from incursions of the local population. Of all the challenges that have been recurring over the years which are as a consequence of interaction between AHP neighbouring villages and the national park, the issue of access to land in GLNP by many accounts seems to be the most protracted and wide-ranging in its implications. Some of the factors that have contributed to the persistence of the problem include the lack of decisiveness to deal with members of the village communities who deliberately enter GPNP resource to cut timber and extract other resources because for them, that is one of the ways they can sustain their livelihoods.

Furthermore, the data and information collected for GLNP in the impact level referring to the PMM Indonesia are described below.

In the impact level, there are at least ten (10) indicators following the key results areas, namely: school attendance/educational level, health status, women's income, youth migration, local culture, religious system, number of conflicts, livelihood change, staple-crop shortage, and household income. Based on the assessment findings, only three out of then indicators that have the data and information, which are school attendance/educational level, livelihood change, and household income.

In term of educational level, the performance indicator used is the average length of schooling in years. Based on the findings, the length of school for the community is 8.64 years in average. This calculation is based on the secondary data source provided in Langkat District in Figure, 2019, published by the Bureau of Statistic Indonesia. In the second indicator, the team were not able to find the data, both from the primary and secondary sources on the health status, proxied by the number of health facilities in the villages. For this reason, the team would suggest eliminating the indicator from the Indonesia context.

Specifically, in livelihood context, the data findings that can be included as the baseline refer to the source of the livelihood of the people. The data is based on the village-based data provided in the official village publication of *Profil Desa* or Village Profile in 2019. The data was collected based on the four villages, namely Telagah, Mekar Makmur, Namo Sialang and Bukit Lawang. The team considers that this aggregate data is useful to set up the baseline for the indicator of livelihood component. Based on the data, majority of people earn of living in the agriculture sector, followed by entrepreneur sector in the second position. These two sectors contribute at least 74% of the livelihood. The other sectors contribute much lesser on the economy of the people as reflected in the table/matrix B.8.

Since the data on income based on the official publication do not exist and the FGD results show that it is complicated to count the exact income of the people, the team recommends utilizing the adjusted per capita expenditure as a proxy of the income. Based on the Langkat District official publication in 2019, the per capita expenditure of the people reached IDR 11,210,000 per month or about USD\$ 854.70 (Bank Indonesia exchange rate in early 2021). Meanwhile, Langkat District has the poverty rate as of 9.9% in the same year (Langkat in District, 2019).

Even though some of indicators have the non-existing data, it is worth noting to briefly discussed some indicators since that is also found during the data collection. For example, the indicator of youth migration with the proxy of those who are staying in the AHP is not relevant for the context of SGP Indonesia. The FGD result does not mention about this situation clearly. The participants only mentioned that the income generation from the youths in the areas were based on the ecotourism and oil plantation sectors and did not mentioned about the migration on the income generation except for education. However, this situation is temporarily based on requests and demands, let alone with no sustainability. The income generation from these activities is relatively small, if not at all.

The FGD result also shows that communities are having their belief, values, norm, and cultural restrictions. This is especially reflected in the term of “kedatukan” that have been applied by the local communities since generations. However, in some extent the “kedatukan” mechanism is not in line with the legal status of the national park. kedatukan is an association that brings together indigenous local communities who are opposed to the policy of settling former Aceh IDPs (Internally Displaced Peoples) land that belongs to the national park. To that end, the concept of kedatukan is opposed to the regulation No.06/2008 that allows KTHK to settle and cultivate land in the national park on right to use (Hak Guna Usaha-HGU) rather than right to own basis land on condition that they comply with conservation principles especially readiness to participate rehabilitation under Climate Change Adaptation (CCA) framework. The regulation was issued in order to resolve a long running conflict between KTHK and the national park. Unfortunately, indigenous local communities perceived the issuing of the regulation as discriminatory against them since many of their households do not

have land as well to earn a living. With time, kedatukan groups are questioning the legality of the existence of the national park claiming that it was established on their land without their approval. To that end, kedatukan is both opposed to the policy of allowing KTHK to cultivate land that belongs to the national park and question the legality of the designation of the national park on that they claim belongs to their ancestors without approval. Based on the responses received from the GLNP management during this study, GLNP has not confirmed the legality of the existence of kedatukan (including the legality of managing the land). For now, GLNP can accommodate them through a conservation partnership (as a community group).

Considering the further complication of the analysis, the team recommends eliminating this indicator from SGP Indonesia context. Important to note that the conflict resolution is one of key areas that have been prioritizing by the Directorate of Conservation Areas, Ministry of Environment and Forestry. Even though the formal data was non-existent, some of the grantees (WALHI Sumatra Utara) also conducts the activities based on conflict resolution related issues. This indicator can be reconsidered as one of the recommended indicators for Indonesia context. However, to assume the baseline data is zero due to no formal record would need agreement amongst the stakeholders of SGP on set up this figure.

In the level of outcome, there two main indicators that are used in the PMM, namely the Community Development (Thematic 6) and Tourism (Thematic 7). For the Community Development, the indicators provided for the outcome indicators consist of four (4) components, namely the indicator of: (i) community land use plan, (ii) the extension agent visits, (iii) the vegetable beds, and (iv) yield of community. However, based on the review during the inception phase as well as based on the data findings, the team has found another added indicator that are relevant to Indonesia' context, namely indicator of number of villages with cross-slope barriers protecting cultivated fields.

The assessment findings show that there are at least 19 KTHK in GLNP area. This number came out from the 30 villages spread out in the areas. The additional indicator from the point 6.2, the team found that there are 10 villages using the cross-slope barriers to protect the cultivated fields. The findings came up from the interview with the GLNP officials and the local NGOs. The number of extension agent visits in GLNP is still relatively small about four (4) times in a year based on the information from the GLNP official source.

In the indicator of the percentage of household with permanent raised vegetable beds near the house is almost zero. Based on observations, both households adjacent and inside GLNP do have to have permanent raised vegetable beds next to their house. The FGD results show that the vegetable programme was an old programme from the Agriculture Office that had been ended since couple of years ago. It was intended to

improve the health status of the households by developing vegetables garden in each household. For the last indicator, the data on the yield of commodity by the community was not existing, based on the primary and secondary sources.

Similar to the Thematic 6, the thematic 7 on Ecotourism also has one additional indicator for Indonesia context. The added indicator was number of visitors to the AHPs.

For indicator number of villages doing ecotourism activities, there are four (4) villages that are doing the ecotourism activities, namely, Desa Namo Sialang, Desa Sei Musang, Desa Bukit Lawang, and Desa Batu Rongring. The tourism community partnerships also exist in Tangkahan, Bukit Lawang, Pamah Simelir, and Batu Katak. Based on the GLNP data in 2019, the total number of visitors in GLNP was 22,179 people derived from Bukit Lawang as of 19,995 and Tangkahan as of 2,184. While the annual revenue from tourism sector was about IDR 2,047,650,000 or about USD\$ 143,335.50 (based on Bank Indonesia exchange rate in early 2021).

#### **4.2. Way Kambas National Park**

The socio-economic conditions and community of the WKNP buffer villages are divided into three groups. The first group is a community group where their economic activities are partially fulfilled from within the TNWK area. The economic activities include grass gathering for the fulfilment of animal feed, fishing activities by fishermen during big waves, and depend on wetland farming from water sourced from the WKNP area. To conduct this first assessment, the villages that were the focus of the study were Sukorahayu Village, Rantau Jaya Udik II Village, and Tegal Yoso Village.

Sukorahayu Village is a buffer village in the coastal area. As a coastal area, some people work as fishermen. When the big waves hit, rivers and beaches on the WKNP coast are areas for fishing. As a village where the majority are rice farmers, the need for water irrigation is the main need in their agriculture. Currently, there are two (2) hamlets in Tegal Yoso that utilise rice field irrigation from the WKNP area.

Some of the farmers in Rantau Jaya Udik II Village are looking for grass in the WKNP area because of the lack of grass in the village. The activity of looking for grass in the area was banned by the WKNP office because there were indications of burning the land to get young grass and it was indicated as a location for animal hunting. The existence of this prohibition has no impact on the economy of the people who raise livestock. Because the livestock is not the main economic source of the people of Rantau Jaya Udik II Village.

The second group is a group that receives benefits from the conservation of the forest in the WKNP area through ecotourism activities. The buffer villages that are the focus



of this assessment are Labuhan Ratu VI Village and Labuhan Ratu VII Village. These two villages can represent several other villages that have developed ecotourism around WKNP. There are several tourism potentials that have been developed in the WKNP area such as the Elephant Training Center or *Pusat Pelatihan Gajah* (PLG) which offers interaction with elephants, trekking routes into the WKNP area, and environmental education tours, especially for school-age children.

As a village that has been declared a tourism village, Labuhan Ratu VI Village has several tourist destinations objects such as a rest area, a group of batik craftsmen, and a coconut shell craft group. Meanwhile, in the village of Pelabuhan Ratu VI, there are supporting facilities for ecotourism activities that have been running but have not been maximized, such as local guide groups, homestay providers and conservation houses as an information centre for ecotourism in the WKNP area. The potential for ecotourism development in the two villages is strongly supported by the position of the village which is on the route to the entrance to the PLG tour. Thus, the potential for ecotourism development in the two villages allows it to increase the economic income of the buffer village community.

The third community group is a group that channels their hobbies into the WKNP area. Some of the people's hobbies in the WKNP area include fishing and animal hunting. This third group came from 38 buffer villages and other villages around WKNP. This community group is included in the community that threatens and disturbs the animals in the WKNP area. The effort carried out by the WKNP Office and partners is to make a shift in activities such as the creation of a honeybee cultivation group, the creation of a craft group and the development of tourism potential to divert the people's hobbies.

The main source of livelihood for the WKNP village community as a whole does not depend on the existence of the WKNP area. The economic sources of the WKNP buffer zone village community come from agricultural activities, being factory employees, and working abroad.

Way Kambas is using the similar indicators and key results areas at the impact and outcome levels with the Gunung Leuser. At the impact level, the findings on the baseline data were similar as well with the Gunung Leuser in term of availability of data and information.

In terms of average length of schooling, the WKNP has lower rate of educational level with the length as of 7.57 years in average (East Lampung District in Figure, 2019). There is no data found on the health status as well, both from secondary and primary sources. Another non-existent data was on the youth migration. Based on the FGD

result, only one (1) KTHK is developed in WKNP and most of communities are not living inside the national park.

For the indicators of local culture and religious system, the awareness of the communities living in surrounding areas of the WKNP to maintain the natural resource management is relatively high. The lack of community pressure on the WKNP area may also be affected by several conditions in the buffer village communities. The first condition shows that several buffer villages of the WKNP area were formed from government programmes for former political prisoners during the G30S *Partai Komunis Indonesia* (PKI) or Communist Party in era or the 1965 communist era. At that location they were given guidance and agricultural land which was originally known as the *Pancasila* (the national foundation of Republic Indonesia) settlement area. This past history has influenced the behavior of the people who were originally involved in the *Pancasila* settlement programme to not act against the law. The second condition is that in the vicinity of the buffer villages there are still opportunities for other sources of livelihood, such as the presence of companies that accommodate large numbers of workers, the availability of agricultural land, and employment networks abroad to become migrant workers.

For the indicator on conflicts brought about by the changes in the landscape, the main problem of the buffer village community with the WKNP office is the attack of wildlife into the community's agricultural area. Various attacks by animal groups such as wild elephants, swamp crocodiles, and wild boars have seriously disturbed farmers and fishermen in the buffer village communities. These animals attack food crops and agricultural crops belonging to the community. As an effort to overcome conflict, partners with the buffer village community have made various efforts such as constructing a barrier block canal between the WKNP area and community gardens, guarding animal exit points, guarding agricultural areas, expelling them with firecrackers or involving elephants who have been trained by elephant respond unit officers. While in term of number of conflicts between local communities and other sectors, based on the data collection, there was formal data exist. However, similar to the case of Gunung Leuser, this indicator is worth including in the Indonesia context prior agreement on setting up the baseline data assumed to be zero with no formal record available.

The various efforts that have been made by partners with the buffer village community to date are aimed at reducing losses in the community. However, conflict reduction based on studies regarding animal movement (animal mobility) and studies on the number of animal populations with the carrying capacity of the area have not been carried out. These scientific studies can be used as an integrated flora and fauna management plan to reduce animal conflict with the surrounding community. Another form of conflict reduction is, for example, providing space for the hobby of hunting wild boar or reducing river crocodiles when there is a study that the presence of wild boar

and river crocodiles in the WKNP area has disturbed the balance of the food chain in the WKNP ecosystem.

Some of the additional problems that influence social and economic welfare include the difficulty of production, promotion, and marketing of produce. Difficulties faced at the production stage, include obtaining raw materials, and labor and wage systems. Without production, there are no goods to promote, market let alone sell.

Nonetheless, negative activities that include entering WKNP illegally to timber, fishing, convert conservation land into farmland continue to plague the relationship between WKNP and village communities adjacent to the park. To that end, WKNP management has taken various measures to minimize security disturbances, especially those ascribed to the above negative community behavior. One of the efforts made has been to form village surveillance on activities that are directly adjacent to WKNP. Thus, considering the fact there are still many problems that hamper community development and empowerment, there is a need for enhanced efforts at intensifying and widening the scope of collaborative efforts between WKNP managers, the government, and other third parties. This is necessary in order to help empower village communities adjacent to WKNP in areas that include management, technology, financing, promotion, as well as marketing of the produce and products.

As pertains to livelihoods, most of the households are farmers/estates, and only a few residents are fishermen/fish farmers, with residents in Labuhan Maringgai and Cabang villages being good examples. Farmers mainly grow paddy (on wetlands) and plantation crops such as oil palm and rubber on 'dry land'. Besides rice and estate crops, other commodities grown include cassava, corn, cocoa, pepper, bananas and coconuts. With the increase in population and the main economic activity of the population being agriculture, demand for land has also increased. Consequently, pressure on WKNP area has also increased as reflected in rising conversion of conservation land for other uses. Aside of agriculture sector that contributes to almost 90% of the livelihood of the people, the other source of livelihoods includes various occupation that show various options of livelihood sources are available for the communities in WKNP.

Similar to GLNP, there is no available data on the staple-crop shortage in WKNP. The team suggests eliminating this indicator from Indonesia context. The same goes to other nonexistence data for the case of WKNP.

In WKNP areas, the same approach has been adopted in measuring the household income as it is also reflected in the GLNP analysis. The team uses the adjusted per capita expenditure for the proxy of the household income. Based on the statistical data in 2019, the per capita expenditure was IDR 9,908,000 or USD\$ 693.56 (BI rate, early 2021).

At the outcome level, some findings can be drawn from the Thematic 6 (Community Development). Most all villages adjacent to Way Kambas National Park depend in one way or another on agricultural land. Some agricultural land is under the management of a private company, namely PT Nusantara Tropical Fruit (NTF). First, land use pattern is broadly divided into two categories. Dry land which is generally used by the indigenous people to grow subsistence commodities using shifting cultivation practices. Crops that are grown on dry land include pepper, coconut, durian, and cassava. Second, wetland agricultural land is used for growing paddy by in-migrants, especially those who come from Java. Land used for homes and residence is not only a place to live, but also used for growing vegetables and other commodities to support household livelihoods.

Since the WKNP has the village-based approach, so far there is only one (1) KTHK adopted in the area. The specific location is in Labuhan Ratu VII village. For the indicator 6.2, the number of villages with cross-slope barriers protection cultivated fields is 37 villages. The aim of having these barriers is to prevent the wild elephant's attack. The barriers were created garden dividers with community gardens (in the form of Elephant trenches and natural rivers reinforced with embankments).

The rest of the indicators, especially for indicators on the percent of household with permanent raised vegetable beds near the house and yield (in volume) of the commodity by the community; the team was not able to collect the data due to the non-existence of the data. The team suggested to eliminate these indicators from Indonesia perspective.

For the last outcome indicator on the tourism, some findings can be summarise as follows. Tourism sector has registered rapid growth over the last decade, which has led an increase in tourism groups. To support tourism activities, YAPEKA, a local NGO, introduced a homestay concept that households can adopt to provide accommodation for tourists in their homes. Initially, this proposal encountered many difficulties because many households considered their houses not ready to adopt the concept, especially with respect to sanitation, and house environment that combined people residence and cattle sheds. However, with passage of time, people have adopted the concept in line with improvement of health and hygiene achieved through enhanced public awareness about better home environment and sanitation. In addition, several coaching activities that involved the application of training results on the ground have been made.

There are three (3) villages in surrounding WKNP that do the ecotourism related activities, namely Desa Braja harjosari, Desa Labuhan Ratu IX, and Desa Labuhan Ratu VI. The ecotourism programme in Braja Harjosari Village and in Desa Labuah Ratu VI is a collaboration programme between local NGOs Unila-ALeRT, community members, and WKNP office. While the programme in Labuhan Ratu IX village is a collaboration between WKNP office and the community members.

Based on the official data from the WKNP office, the annual park income from tourism activities in 2019 was about IDR 1,004,813,500 or USD\$ 70,336.94. The data on the number of visitors to WKNP is also available in the WKNP report, but unfortunately is not in line with the data of the revenue. The data on the visitor was published in 2015, while the data for annual revenue was published in 2019.

## V. Recommended Indicators

Assessment findings are expected to fill in baseline gaps and establish complete baseline data for possible outcome and impact for monitoring and evaluation of SGP. The data identified as a baseline shall refer to the appropriate and usable indicators. As part of the objective of the assignment, this study is expected to provide a review of the revision of the existing pool of indicators to ensure that the performance measurement of the SGP would become more effective.

The results of the review and revision of existing indicators aim relatively with purpose to modify and select them based on the results of the review and the availability of data collected in this study. The recommended indicators are expected to cover the purpose of the monitoring and evaluation as it is defined as the collection and analysis of repeated observations or measurements to evaluate changes in conditions and progress towards meeting a management objective (Elzinga et al. 2001). The review on the existing SGP indicators is conducted through reviewing documents related to the SGP program including Programme Management Manual (PMM), Collaborative Management Plans (CMPs) of both AHPs, initial Technical Progress Reports (TPR) of implementing partners, livelihoods and ecotourism mission report, and the indicators' benchmark of Ministry of Environment and Forestry of Indonesia (MOEF):

- PMM<sup>4</sup> is the guidance document for the implementation of Small Grants Program in cooperation of The ASEAN Centre for Biodiversity (ACB) and the German Development Bank (KfW). It is noted that PMM is considered as a 'living' document, as the SGP progresses, experiences from the processes, interactions, and actual realities during SGP implementation may warrant a need to review and revise the PMM. This document covers SGP project design and organizations, grants policies and procedures, financial management, procurement and monitoring and evaluation. In this context, the manual on monitoring and evaluation is reviewed as it consists of the existing impact and outcome level indicators designed in the initial phase of the programmes.
- CMPs of both AHPs<sup>5</sup> have been developed in order to provide a disciplined approach to the collaborative management of the AHPs over the period of 2018-2023 as well as to be a reference for the implementation of SGP under ACB. CMPs consist of descriptions of the AHPs (history, status, institutional management, current activities, and regional development frameworks), conceptual and policy review, challenges and strategy and action plan. With PMM document provides impact and outcome level of indicators, CMP entails with output level indicators in the monitoring and evaluation framework. However, the information provided in this document predominantly described the biodiversity part compared to livelihoods. The review of both PMM (outcome

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<sup>4</sup> Programme Management Manual "ASEAN Heritage Parks Small Grants Programme" Indonesia, version <Draft # 9><15><September><2019>

<sup>5</sup> Konsorsium YOSL-OIC-PILI, July 2018, Collaborative Management Plan Gunung Leuser National Park Area III and Way Kambas National Park Collaborative Management Plan Lampung Province, 2018-2023

and impact level indicators) and CMPs (output level indicators) is important to minimise the deviance and ensure the alignment of the indicators at all levels.

- TPR is considered in the review as a reference to ensure the alignment of the current SGP activities implementation that are output level indicators, so that the recommended indicators are still in line with the activities that have been carried out at the same time to get a highlight about the consistency of current interventions monitoring is following the set of output indicators presented in CMP documents. The indicators that used in TPR need to be assessed in relation between the progress in the output level, the alignment of the indicators in CMP documents and its significance to contributes to the outcome and impact levels.
- Benchmark on the impact level indicators of MOEF strategic planning and performance indicators 2020-2024<sup>6</sup>, as the program is to contribute to the biodiversity protection of national parks in Indonesia. As the program is designed to contribute to the strengthening of biodiversity protection and management of natural resources, the alignment of indicators used by the government need to be considered for the recommended indicators. More importantly, the integration of measurement of the program by using similar indicators and its data would help to sustain the monitoring as it has been performed by government agencies.

Referring to Introduction manual on Biodiversity Monitoring for Natural Resource Management<sup>7</sup>, for delivering useful results, biodiversity monitoring needs to be tailored for specific objectives. It is critical to define monitoring objectives clearly at an early planning stage. Although the existing indicators defined at an early planning stage is revisited through this study, the recommended indicators ensure to meet the SMART criteria to make good indicators:

- Sensitive and Specific for the environmental condition (state), pressure or response under question. Sensitivity refers to rapid detectability of fine changes.
- Measurable, if possible, quantitatively, to allow a measure of confidence in results.
- Achievable with the resources at hand, and economic (cost-efficient);
- Relevant to agreed monitoring goals, natural resource management and policy;
- Time-bound, because results must be accessible within a defined time frame and yield information on changes over time.

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<sup>6</sup> Regulation of the Minister of Environment and Forestry of the Republic of Indonesia Number P.16/MENLHK/SETJEN/SET.1/8/2020 concerning the Strategic Plan of the Ministry of Environment and Forestry 2020-2024.

<sup>7</sup> Werner, Florian A. & Gallo-Orsi, Umberto. 2016. Biodiversity Monitoring for Natural Resource Management — An Introductory Manual. GIZ, Eschborn and Bonn, Germany. DOI: 10.13140/RG.2.1.3141.8488/1

Further practical considerations include:

- Choice of indicators responsive to both positive and negative changes.
- Choice of multiple indicators whenever possible. Natural systems are complex and even a carefully chosen indicator may fluctuate unpredictably, e.g. a species population due to disease or extreme climatic events (Richards & Panfil 2011) or may be affected by factors outside the monitoring area (e.g. migratory species, water quality in a shared basin);
- Intuitiveness. Is the indicator easily enough understood to be effectively communicated to local stakeholders and decision-makers? Does it relate to something that people can use or does it have emotional value?
- Information availability. Historical data may serve as a valuable baseline (e.g. land-use change, distribution or abundance of species), while present-day data (e.g. socio-economic indices from national statistics) can complement many monitoring schemes;
- Sustainability. Can the monitoring scheme be institutionalized (i.e. included in the duties of government agencies) in order to ensure its long-term implementation?

From the above process, the selection of the recommended impact and outcome indicators can be seen to have modified relatively significant number wise from the existing indicators listed in the PMM, especially the level of impact. Section 3.1 provides a summary of the recommended set of indicators. Section 3.2 describes the analysis of indicator selection including changes from the existing set of indicators listed in the PMM document. The baseline data following the recommended indicator is available in Annex. 4.

### 5.1. List of recommended indicators

The number of outcome level indicators is also reduced but still ensures that each thematic area can be measured. These recommended indicators were chosen to be more realistic in measuring and achieving program objectives.

IMPACT LEVEL		
KRA	Indicators	National Park
OBJECTIVE A. Improve biodiversity protection in line with the interest of local population directly dependent on selected AHPs and adjacent areas		
A.1. Area coverage	Area coverage (in km2) under appropriate zoning	GLNP, WKNP
A.2. Patrolling Effort	Number of threats related to biodiversity protection	GLNP, WKNP
A.3. Attitudes and Behavior	A.3.1. Village community understanding of NP functions and regulations	WKNP
	A.3.2. Village community activities within the NP area	



A.4. Effectiveness of Forest Area Management	Effectiveness scores using METT	GLNP, WKNP
<b>OBJECTIVE B. Improve livelihood of local communities directly dependent on selected AHPs and adjacent areas</b>		
B.1. Income (financial capital)	Household income	GLNP, WKNP
B.2. Livelihood change (natural capital)	Type of livelihood activities	GLNP, WKNP

<b>OUTCOME LEVEL</b>			
<i>Thematic Areas</i>	<i>Statement</i>	<i>Indicators</i>	<i>Applied for</i>
1. General Park Management	Increased collaboration of stakeholders for park management	Number of Conservation Agreements	GLNP, WKNP
2. Wildlife Research and Monitoring	AHP's key species are protected and/or conserved	Key species count	GLNP, WKNP
3. Law Enforcement	Established and/or increased SMART patrolling effort for the protection of AHP	Number of monitoring and patrolling persons day/month and km2	GLNP, WKNP
4. Habitat and Species Management	Degraded habitats of AHP's are rehabilitated and habitats are protected for species protection and conservation	Deforested areas (Ha)	GLNP
		Coverage of critical land (Ha)	WKNP
5. Community Outreach and Conservation Awareness	Increased community outreach	Number of villages establish conservation village regulation (Perdes)	GLNP
		Number of pupils involves in Environmental Education and conservation processes	WKNP
6. Community Development (Land Use and Livelihood)	Decreased pressure to AHP brought by socio-economic activities	6.1. Number of Community Land Use Plan	GLNP, WKNP
		6.2. Number of extension agent visits	GLNP
7. Ecotourism	Provision of alternative source of livelihood and income	7.1. Number of community/villages doing ecotourism	GLNP, WKNP
		7.2. Park Income	GLNP, WKNP
		7.3. Number of visitors	GLNP, WKNP

## 5.2. Analysis on recommended indicators

The details of the changes of original/existing set of indicators compared to recommended indicators are presented in annex. 3.

### Impact Indicators

*OBJECTIVE A. Improve biodiversity protection in line with the interest of local population directly dependent on selected AHPs and adjacent areas.*

#### A.1. Vegetation Cover

PMM	RECOMMENDED
A.1.1 Area coverage (in km <sup>2</sup> ) of natural vegetation cover (i.e. mangrove, dipterocarp forest, etc.)	Area coverage (in km <sup>2</sup> ) under appropriate zoning

Area coverage under zoning is considered the most critical indicator. This indicator is initially under outcome level; but with the changes it will not significantly change over 2-3 years, this is more appropriate as impact indicators, expecting the changes after five years, at the end of SGP period.

#### A.2. Species Count

PMM	RECOMMENDED
A.2.1. Population counts of key species a. Flora b. Fauna	Key Species
A.2.2. Population counts of rare species a. Flora b. Fauna	

Species count changed into outcome level indicator with more general measurement as key species count.

#### A.3. Biological Diversity

PMM	RECOMMENDED
A.3.1. Biodiversity Index	-

The data is not available; therefore, this indicator is recommended to be eliminated.

#### A.4. Patrolling Effort

PMM	RECOMMENDED
A.4.1. Arrest and apprehensions related to biodiversity protection	Number of threats related to biodiversity protection
A.4.2. Cases filed for prosecution related to biodiversity protection	-

The availability of the data is only on number of threats. There is no data on cases filed for prosecution, nor data on arrest and apprehensions related to biodiversity protection. Therefore, this indicator is recommended to be eliminated

#### A.5. Attitudes and Behavior - Attitudes and Behavior scores

PMM	RECOMMENDED
A.5.1. Attitudes and Behavior scores	A.3.1. Village community understanding of NP functions and regulations A.3.2. Village community activities within the NP area

This indicator is relevant for WKNP based on current activities and output level indicators and the data is available based on the study conducted by implementing partner: PILI Green Network

#### Management effectiveness - Effectiveness scores

PMM	RECOMMENDED
A.6.1 Effectiveness scores	Percentage of Effectiveness of Conservation Area Management

The data source is the website of assessment of the Effectiveness of Conservation Area Management in Indonesia published by Directorate of Conservation Areas, Ministry of Environment and Forestry. The data collected using METT (Management Effectiveness Tracking Tool). The latest data is 2017. The availability of the data is depending on the update from this website.

*OBJECTIVE B. Improve livelihood of local communities directly dependent on selected AHPs and adjacent areas.*

School attendance/educational level, Health status, Women's income generation, and youth migration (human capital).

PMM	RECOMMENDED
B.1.1. Percentage of children at school age attending school revised to Percentage of household's educational level	-
B.2.1. Number of people within the age of working class going to the hospital	-
B.3.1. Number of women having their own income	-
B.4.1. Number of youths staying in the AHP (education and livelihood)	-

These indicators are considered high level and are not directly contributed by the interventions of SGP program. With the investment of SGP and type of interventions that are considered more short-term. These indicators are recommended to be eliminated and the assessment can be more focused on the indicators which the interventions have direct contributions to biodiversity and household livelihoods.

### Local culture and religious system (social capital)

PMM	RECOMMENDED
B.6.1. Belief, values, norms, and cultural restrictions owned by the specific community	-

From assessment, there are findings that the belief, values, norms, and cultural restrictions do exist in the community. However, these qualitative indicators are considered vague to measure to indicate the performance of the program. These elements can be captured as supporting factors contributes to the result of the program through success stories and lessons learned. Although, local culture and religious system can be contributing to the knowledge, attitude and behaviour of the community that is accommodated to be measured at impact level (see impact level indicators: attitude and behaviour). Therefore, this indicator is recommended to be eliminated.

### Conflicts brought about by the changes in the landscape (social capital)

PMM	RECOMMENDED
B.7.1 Number of conflicts between local communities and other sectors (i.e. park management, private sector, etc.)	-
B.7.2. Number of human-animal conflicts	-

Number of conflicts between local communities and other sectors (i.e. park management, private sector, etc.), Number of human-animal conflicts.

There are findings from the assessment collected during FGD with the community; however, complete data that log the human-animal conflicts is not available, also conflict between local communities and other sectors. Therefore, this indicator is recommended to be eliminated.

### Livelihood change (natural capital) - Percentage of household doing livelihood activities.

PMM	RECOMMENDED
B.8.1. Percentage of household doing livelihood activities: a. farming b. livestock raising c. labor d. logging e. hunting f. mining g. Ntfp collection h. fishing i. fuelwood collection	Types of livelihood activities

The data is not available to get the percentage of the household's livelihood activities. This specific indicator requires complete statistic data from each village in the NPs. All village data have been checked and it is not available equally for all villages. Therefore, it is recommended to measure the type of the livelihood's activities, to enable the

monitoring and evaluation indicates the new livelihoods activities as the indicator is to see new type of alternative livelihood shown at the end of the program activities.

#### Staple-crop shortage

PMM	RECOMMENDED
B.9.1. Shortage month/year	-
B.9.2. Percentage of household experiencing staple-crop shortage	-

This indicator is recommended to be eliminated considering there is no relevant data on crop-shortage in both NPs. Through FGD, the data shown that households in both NPs do not fully rely on their crops especially in GLNP, village communities are also working for plantation.

#### Income (financial capital) - per capita income

PMM	RECOMMENDED
B.10.1 per capita income revised to Household income	Adjusted per capita expenditure

The most appropriate impact level indicator for livelihoods. However, the data is not available for households in NPs area, even more the village data and sub-district data. It requires specific budget to collect income specific data at village level. Therefore, district level data is used, although the data may not fully represent income of households at village level.

### Outcome Indicators

General Park Management: Increased collaboration of stakeholders for park management

PMM	RECOMMENDED
1.1. Number of Conservation Agreements	Number of Conservation Agreements
1.2. Area under appropriate zoning	-
1.3. Management plan implementation score	-
1.4. Staff competence level	-
1.5. Number of community participants in management committee	-

Indicator number of conservation agreement is relevant to the statement of thematic area General Park Management on increasing collaboration of stakeholders. Indicator area under appropriate zoning set as impact indicator. Whereas data on management plan implementation score and staff competence level are not available. To collect the data, preparation with NPs is needed especially on designing the scoring method and criteria. Like indicator community participants in management committee, this is not relevant in the two NPs. Based on interview during assessment with NP representative; there is no structure on management committee in NPs, moreover, the involvement of community participants in it.

Wildlife Research and Monitoring: AHP's key species are protected and/or conserved.

PMM	RECOMMENDED
2.1. Number of conservation action (policy, program, projects)	-
2.2. Key species count	Key species count

Key species count is the indicator for Wildlife Research and Monitoring Theme, while number of conservation actions is recommended to be eliminated due to unavailable data across different program and projects implemented in two NPs. Additionally, the focus is to measure the progress on outcome influenced by the existing conservations policy, program and projects than measuring their numbers.

3. Law Enforcement: Established and/or increased SMART patrolling effort for the protection of AHP.

PMM	RECOMMENDED
1. Number of monitoring and patrolling persons day/month and km2	Number of monitoring and patrolling persons day/month and km2 (GLNP)
	Number of village community efforts to support the protection of AHP (WKNP)

The indicator set differently for GLNP and WKNP based on the availability of the data. In GLNP, the data on SMART patrolling efforts is stated in the NPs long-term plan document, therefore, the original indicator remains the same for GLNP. However, that is not the case for WKNP. The data on SMART patrol is not available. The data of number of village community efforts to support protection of AHP is covered in WKNP long-term plan, therefore, this indicator recommended for WKNP that changes from the original indicator.

4. Habitat and Species Management: Degraded habitats of AHP's are rehabilitated and habitats are protected for species protection and conservation.

PMM	RECOMMENDED
4.1. Reforested areas using native species	Deforested areas (Ha)
	Coverage of critical land (Ha)
4.2. Habitats (in ha) protected against fire/burning	-
4.3. Number of forest fire incidences prevented	-

Deforested areas (Ha) are used for GLNP instead of Reforested area as identified in the original indicator, based on the data availability. Similarly, indicator on Habitat and Species Management thematic is recommended to change into the coverage of critical land (Ha) as the data is available. Therefore, the indicator on habitats (in Ha) protected against fire/burning is recommended to be eliminated as well as number of forest fire incidences prevented. The data on forest fire incidence prevented is not available, although data threat on forest fire is available and is used as the impact indicator.

## 5. Community Outreach and Conservation Awareness: Increased community conservation awareness

PMM	RECOMMENDED
5.1. Percentage of community perception	Number of village establish conservation village regulation (Perdes) (GLNP)
5.2. Number of media mention	Number of pupils involves in Environmental Education and conservation processes (WKNP)

As discussed in impact indicator for attitude and behavior key result activity, GLNP is not using this impact level indicator and for outcome level thematic community outreach and awareness, indicator number of villages establish conservation village regulation (PERDES or *Peraturan Desa*) is considered appropriate for GLNP. The original indicators on percentage of community perception, therefore, changed. While for WKNP, this indicator is used for impact level; therefore, indicator community outreach is appropriate considering the current activities in WKNP on establishing Environmental Education Centre and activities on environmental education and conservation processes. Indicator number of media mention is recommended to be eliminated because there is no record available. If this indicator is used, the baseline data would be available from the record of local partners that implement activities relevant to output indicator.

## 6. Community Development (Land Use and Livelihood): Decreased pressure to AHP brought by socio-economic activities

PMM	RECOMMENDED
6.1. Number of Community Land Use Plan	6.1. Number of Community Land Use Plan
6.2. Number of extension agent visits	6.2. Number of extension agent visits
6.3. Number of Community Vegetable beds	-
6.4. Volume of yield of commodity	-

Original indicators number of community land use plan and number of extension agent visits are most appropriate for this thematic, for both GLNP and WKNP. Other two original indicators are recommended to be eliminated due to irrelevancy to the activities (number of community vegetable beds) and unavailability of the data (volume of yield commodity). From the assessment observations, the data on community vegetable bed is almost zero. The nature of GLNP households lives within palm tree plantation and farms perceived as community are not incentivized to have permanent raised vegetable beds next to their house. This has been one of the old programs from agriculture department. Although from FGD, community mentioned Agriculture Department will start the kitchen garden again.

## 7. Ecotourism: Provision of alternative source of livelihood and income

<b>PMM</b>	<b>RECOMMENDED</b>
7.1. Number of villages doing ecotourism	7.1. Number of villages doing ecotourism
7.2. Park Income	7.2. Park Income
7.3. Number of visitors.	7.3. Number of visitors.

Number of community/villages doing ecotourism is useful to indicate the expanding tourism activities in the NPs buffer villages. This original indicator including park income is used for ecotourism thematic. The change on recommended indicator is one additional indicator: number of visitors, to indicate the relevant factors on income to communities that doing ecotourism.



## VI. Conclusion and recommendation

### 6.1. Conclusion

Based on the assessment results, the team concludes the following points:

1. CMPs documents designed for both National Parks contain information on strategy development and action plans including monitoring and evaluation schemes. The document also includes programme indicators. However, the indicators designed only measure the level of activities which will be quite difficult because they are not completely in line with the outcome and impact indicators designed in the PMM document for SGP Indonesia. This is because the CMPs document was developed before the PMM document, while the PMM document has been developed after the CMPs document and does not fully accommodate the set of indicators contained in the CMPs document.
2. The basic gaps finding in the CMPs document is that there is limited baseline data and information. The information that can be used as baseline data can be taken from the CMP document is the information presented in the description of the overview of the national park, the concept, and the challenges of National Park management. However, baseline data that consist of data based on a set of indicators, which are usually part of monitoring and evaluation, are not found in this document. The required baseline data/information has been summarized, however the sources of information, the coverage and period of the data collected vary widely.
3. The gaps that were found referring to the set of indicators on the CMPs are:
  - a. In term of socio-economic and livelihood, the indicators related to the agroforestry programme and non-timber forest products (NTFPs) have limited foundation in identifying the assessment of the featured products, that include the value chain assessments. Moreover, the indicators that reduce the dependency of the communities to the national parks were also limited to be identified in the CMP of GLNP, while in the WKNP it was mentioned about the options of the livelihood alternatives such as biogas, fishing ponds, and ecotourism that were included in the priority village model or *Desa Binaan*.
  - b. In term of biodiversity related issues, the main challenge to achieve the goal of SGP programme in Indonesia was considered as the threat of illegal activities inside the national parks area and the human-animal conflict. The strategies, programme, and indicators related to these matters are only available in CMP WKNP (programme number 2), but none in CMP GLNP. In both CMPs however, there is no assessments related to orbitation of the fauna and the sufficiency supply for the fauna inside the parks. The biodiversity index was not found in both CMPs and any other related documents for SGP Indonesia. The effectiveness score in the national park (in PMM document) was also identified in the CMP WKNP, especially in the form of training. While in GLNP the programme was formulated in the activities such as meeting with relevant stakeholders but there was no further description to measure

the effectiveness score that is broken down into some measurable criteria. In the CMPs, the indicator of trainings and meetings are only referring to the numbers or frequencies. For example, in WKNP it was set nine (9) training packages for 60 staff; and in GLNP was set 60 coordination meetings or 30 socializations to relevant stakeholders. However, impact level indicator on management effective score using METT align with MOEF indicator is used to accommodate vary activities in both AHPs that contributes to the achievement of the management effectiveness of the AHPs.

4. The Monitoring and Evaluation scheme contained in the PMM document identifies outcome and impact indicators, but there is no definition of indicators that provide clarity for operational measurement of program development. This definition is needed to ensure that the data/information is equivalent so that it is valid for comparison between the initial data of the programme and the middle or end data of the programme. The baseline data that is summarized from this study, was developed based on the definition of indicators, including remarks regarding the sources of data collected as important notes for future measurements (see annex on the baseline worksheet).
5. The gaps were also contributed by the development of the SGP indicators at outcome and impact level identified in the PMM document in 2019 later than CMPs that were designed in 2018. Therefore, the alignment of the indicators from output, outcome, and impact is relatively limited. The development of outcome and impact indicators specific to the Indonesian context is necessary to ensure the alignment with the output indicators mentioned in CMPs is strong.

## **6.2. Recommendations**

Some recommendations derived from the consultancy exercise include:

1. A thorough review is needed to identify list of output level indicators designed in CMP documents that contributes to the measurement of set of outcome and impact level of indicators set up in PMM document.
2. In term of Monitoring and Evaluation, for higher quality results regarding the set of indicators and their definitions, a special assessment is needed to produce a realistic set of indicators and targets according to data availability, especially considering that the programme has been implemented until the middle of the period.
3. In the absence of baseline data in the CMPs and the absence of a comprehensive baseline assessment data at the start of the programme, this study was only able to combine baseline data from various sources. Some data/information related to some indicators are contained in secondary data, but data for some other indicators have never been collected. For baseline data that was not found in secondary and primary data from this study (due to study limitations), some indicators can be filled-in from programme activity data. The initial report on programme activities can be used as a baseline for the related

indicators. The data can be collected by ACB together with Penabulu Foundation as the Service Provider of SGP Indonesia at the later stage where all reports from SGP local implementing partners submitted.

4. ACB needs to conduct a review to identify program activities that will be carried out through SGP, whether it still refers to CMPs or needs to be updated in relation to the recommendations of these two mission documents. This will greatly affect the set of relevant indicators and further collection of baseline data in accordance with the activities carried out in the programme. In the context of this study, the set of indicators analyzed only refers to the CMPs and PMM documents.
5. The consultant team was able to collect some data and information with the indicators based on the PMM Indonesia as well as to fill the gaps on the data that is required in this assessment, however, in some cases based on primary data and secondary data collection, the team could not find the data until the end of the fieldwork. For this reason, the team recommends that the non-existing data would reflect that the certain indicators are not relevant for the case of Indonesia. In addition to that, the availability and the uniformity of the data also varied, that made some of the indicators would better be eliminated from Indonesia context.
6. For the specific recommended indicators for Indonesian context, the team proposes some of possible revised indicators that are derived from the Chapter II and III, both in Impact and Outcome Levels. To select the recommended indicators for Indonesia, the team suggests using certain justifications that are based on this assessment results. The justifications include:
  - a. Data availability from credible sources. In cases where data on indicators were difficult or nonexistent, the recommendation is not to use such an indicator. Otherwise, indicators for which data were established to be available were highly recommended for use in future monitoring and evaluation activities.
  - b. The secondary data is from official published data from the Indonesia authorities, especially in the local level (provincial, regency, district, national park, and other governmental offices)
  - c. Data on some indicators while available were at very micro level and based on point estimates rather than representative samples. Thus, while such indicators were available, but because the consultancy only had limited time, it would mean that it was not possible to establish the authenticity and reliability of the data for such indicators.
  - d. Indicators should be comparable between GLNP and WKNP.
  - e. Data on some indicators are available in one of the national parks but unavailable in the other. The conclusion on such indicators is that they can be used because they can help to bring out the differences in social, cultural, economic and physical environment, biodiversity conservation, and history in the two national parks.

7. Based on the exercises in Chapter II and III, the overall recommendations for the indicators to be applied in SGP Indonesia include:

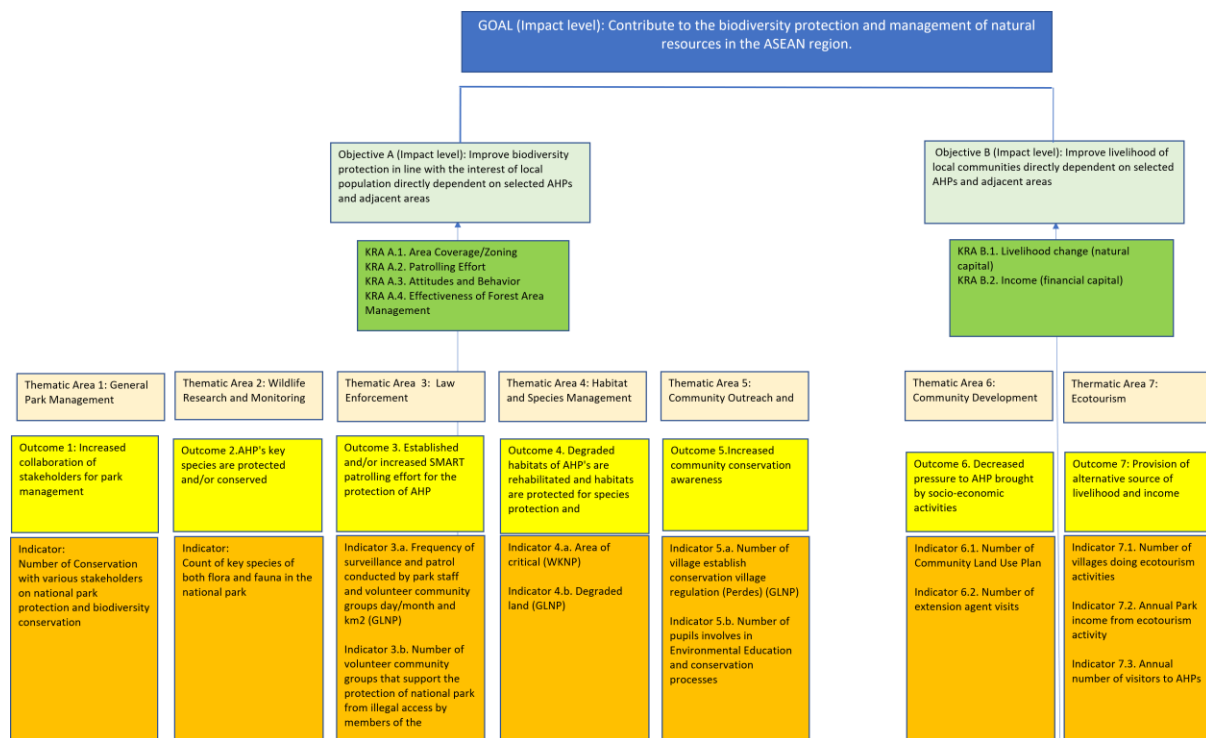
Impact level:

Objective A	Objective B.
<ol style="list-style-type: none"> <li>1. Area coverage (in km<sup>2</sup>) under appropriate zoning</li> <li>2. Number or frequency of threats to biodiversity conservation identified by AHP resort.</li> <li>3. Village community understanding of NP functions and regulations.</li> <li>4. Village community activities within the NP area.</li> <li>5. Percentage of Effectiveness of Conservation Area Management</li> </ol>	<ol style="list-style-type: none"> <li>1. Type of livelihood activities</li> <li>2. Adjusted per capita expenditure.</li> </ol>

Outcome level:

Objective A	Objective B
<p>Thematic 1, General park management: Number of agreements with various stakeholders on national park protection and biodiversity conservation</p> <p>Thematic 2, Wildlife Research and Monitoring: Count of key species of both flora and fauna in the national park</p> <p>Thematic 3, Law Enforcement:</p> <ol style="list-style-type: none"> <li>i. Frequency of surveillance and patrol conducted by park staff and volunteer community groups day/month and km<sup>2</sup>.</li> <li>ii. Number of volunteer community groups that support the protection of national park from illegal access by members of the community.</li> </ol> <p>Thematic 4, Habitat and Species Management include: Area of critical or degraded land in the park</p> <p>Thematic 5, Community Outreach and Conservation Awareness:</p> <ol style="list-style-type: none"> <li>i. Number of villages establish conservation village regulation (Perdes).</li> <li>ii. Number of pupils involves in Environmental Education and conservation processes.</li> </ol>	<p>Thematic 6 of Community Development (Land Use and Livelihood):</p> <ol style="list-style-type: none"> <li>i. Number of Community Land Use Plan</li> <li>ii. Number of extension agent visits</li> </ol> <p>Thematic 7 on the tourism related sector, the team recommends that three (3) indicators can be used for the set of indicators since the baseline of the 3 indicators are available:</p> <ol style="list-style-type: none"> <li>i. Number of villages doing ecotourism activities.</li> <li>ii. Annual Park income from ecotourism activity</li> <li>iii. Annual number of visitors to AHPs</li> </ol>

8. Based on the above exercises, the adjusted logframe for the PMM Indonesia (country level) will be:



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## **Annex 1. Assessment Findings Report based on Macro Level**

### **1. Introduction**

Before going further to the findings at the macro level, it is important to reflect back to the conceptual framework being used in this study. As mentioned in Chapter I, the conceptual framework is limited to guide this study on the operationalisation level, which means guiding the team to collect the data and information during the assessment period.

This study uses collaborative forest management (CFM)<sup>8</sup> as the overarching framework that provides the institutional setting for key stakeholders in AHP biodiversity conservation and protection under which policies and practices are formulated, implemented, and evaluated, including improving livelihoods of communities living inside AHPs and in neighboring villages. The principal goal of interventions is to encourage and induce behavioral change among beneficiaries toward practices that in line with and support environmental conservation, adoption of agricultural practices that increase farm productivity such as terracing, using information from agricultural extension officials in cultivation and harvesting decisions, enhancing alternative non-forest sources of livelihoods that are aimed at reducing community dependency on AHP resource, and including ecotourism in AHP neighboring villages and AHP.

Stakeholders have different interests that influence their respective perspectives about their existence, management, use, and conservation. State agencies that are entrusted with protecting and conserving forests are keen to do their work by the rules, the formulation and implementation of which often do not all take into consideration of the interest of other key stakeholders. Such policies create a situation where some state agencies in pursuit of local and national government goals allocate vast tranches of forests for mining, logging, and conversion into farmland, policy, and practice that deprives forest communities living inside and areas that surround forests, without livelihoods. Such a situation shows that conflicts among various stakeholders that have varied vested interests in forests have been unavoidable. One of the approaches used in effective interventions has been the adoption of a combination of collaborative management and sustainable livelihood approaches (SLA). The former approach creates the 'institutional' collaborative setting that accommodates interests and concerns of different stakeholders with different interests within the natural resource space context, leading to a participatory and inclusive policy process that lays the foundation for improvements that are based on the latter approach (SLA).

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<sup>8</sup> Collaborative forest management aims at strengthening sustainable conservation of biodiversity in forest estates while at the same time improving livelihoods of communities living in areas that surround forests by involving all key stakeholders in decisions that relate to planning, protecting, conservation and management of forests, and accessing and using forest products and services (Sindhu et al. 2017).



Furthermore, to address the objectives of this study, SLA will be used in collecting data on socio-economic and livelihoods. As illustrated below, the Sustainable Livelihood Framework' (SLF) is one of the most widely used livelihood frameworks in development practice (DFID, 2008). The framework depicts stakeholders as operating in a context of vulnerability, within which they have access to certain assets. Assets gain weight and value through the prevailing social, institutional, and organizational environment (policies, institutions, and processes). This context decisively shapes the livelihood strategies that are open to people in pursuit of their self-defined beneficial livelihood outcomes." (Kollmair et al., 2002). It enhances understanding of the factors that influence the ability of people to achieve SLA principles on effective interventions served as guidance in the design of techniques.

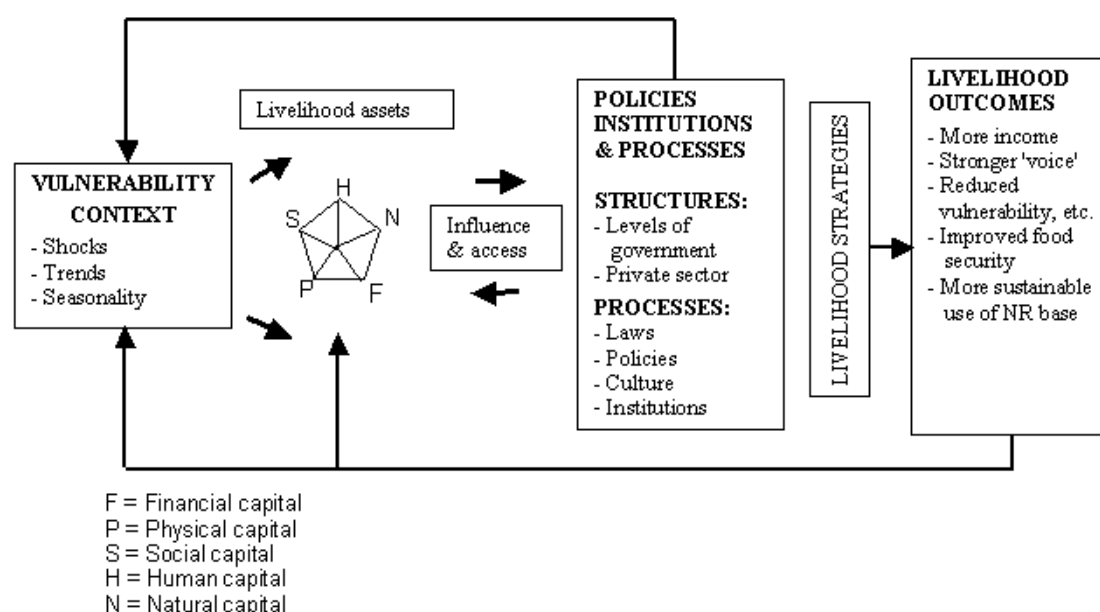


Figure 1. The Sustainable Livelihoods Framework. Data sourced: DFID (2000)

SGP projects are directly aimed at empowering sustainability of livelihood of AHP neighboring villages through strengthening existing livelihood sources, enhancing and diversifying alternative non-forest dependent ones, and promoting environmental conservation behavior. These to pursue the overarching goal is to enhance and support the sustainability of AHP resource that is in addition based on national (Ministry of Environment and Forestry), provincial and district government strategic plans, as informed by AHP strategic development and action plan. Therefore, the national park's natural resource, institutional capacity, and management that is vital for the success of SGP implementation are expected to play a vital role in baseline data gaps analysis and study. Later on, these aspects play a vital role in the selection of indicators. In Chapter II, the analysis will be made based on the CMP gaps, the existing indicators that are derived from the Indonesia logframe provided in the PMM Indonesia.

## **2. Findings Report based on Macro Perspective**

### **GUNUNG LEUSER**

GLNP is a nature conservation reserve area, is one of the national parks in Indonesia, which is a native ecosystem, that is designated to provide and support life support system of the unique high biodiversity and habits for flagships species. Highlights of GLNP functions include, (1) strengthening the stability of the legality of the area; (2) implementing resort-based area and biodiversity management, rehabilitation and restoration; (3) sustainable use of the area; and (4) foster the realization of public awareness and participation in supporting national park functions in general and understanding the importance and value of environmental conservation in achieving sustainable development. GLNP management is based on the zoning system that enhances the provision of functions that include as a natural research laboratory, science and education; supporting preservation of culture, tourism and recreation activities. On an indicative basis, GLNP area is divided into 7 (seven) zones, namely, the core zone (857,175.64 Ha); the jungle zone (66,921.08 Ha); the utilization (12,431.78 Ha); the rehabilitation zone (143,734.87 Ha); the traditional zone (10,495.03 Ha); the religious, cultural and historical zone (73.27 Ha), and the special zone (1,236.28 Ha). The utilization of an area that covers 2,534.46 Ha (gray zone) still is in dispute hence requires central government policy intervention. Zoning-based management that is characterized by the division of GLNP area into zones in accordance with utilization, increases effectiveness through better planning, control, monitoring and supervision (GLNP RPTN, 2010-2019).

Besides serving as nature reserve for flora and fauna biodiversity, life support system, and nature laboratory, GLNP also has huge ecotourism potential in various areas and locations that include Kruengkila, Kedah, Marpunge, Lawe Gurah, Tangkahan, Rantau Sialang, Danau Laut Bangko, Bukitlawang and Marike. The mission of GLNP include enhance human resource capacity and competence to support better management effectiveness; strengthen the legality of agreed and recognized national park boundaries across all parties; accelerate national park resort-based reorganization and management in order to support biodiversity and ecosystem conservation; ensure effective and sustainable use of the national park in accordance with its potential; and enhance community awareness and active participation in assisting national park management in a just and responsible manner.

GLNP is both a biosphere reserve and world heritage site. As a biosphere Reserve, GLNP contributes to the conservation of landscape, ecosystems, species, and germplasm; makes possible and supports ecologically sustainable economic development and culture; and supports research, monitoring, education, and training that is related to conservation and sustainable development issues at the local, regional, national, and global level. Moreover, as World heritage reserve, GLNP contributes to the preservation of Nature and Cultural Heritage, preserve irreplaceable

heritage that has high universal value, and protection of nontransferable heritages, and a manifestation of awareness and international collective cooperation about nature and cultural heritage conservation. As world nature heritage site, GLNP, has the same status as Ujung Kulon national park, and Komodo dragons national park. The three nature reserves, namely, Gunung national park, Kerinci Seblat national park and Bukit Barisan national park were designated tropical rainforest heritage sites of Sumatra in 2004.

The management of GLNP is based on Minister of Forestry regulation No. P.03/Menhut-II/2007 on organization and conduct of operations of GLNP. The national park is a technical implementation unit under the directorate general of PHKA which is headed by the head of the National Park (echelon IIb rank), and assisted by five (5) and eleven (11) echelon IIb and echelon IV ranking officials. Organizational structure of the National Park is broadly divided into two sections, technical conservation section and general administrative affairs section. Technical conservation section is subdivided into BPTN Wil. I Tapaktuan, BPTN Wil. II Kutacane, BPTN Kutacane Wil. III Stabat.

## History and Evolution of GLNP Status

Table 1. History of GLNP since 1927

1927	In 1927, local community leaders sent a request to Aceh Government of the Dutch East Indian Company to protect the Forest Valley area from logging.
August 1928	In 1928, Dr. Van Heurn submitted a proposal to the Dutch Government to protect the Singkil area (upstream of Simpang Kiri River) southern section, along Bukit Barisan, toward Tripa and Swamp River valleys Meulaboh Beach, in the North. The proposal was approved.
February 06, 1934	Under the Tapaktuann a declaration that was signed Governor of the Dutch East Indies, on February 06, 1934, local community representatives expressed their determination to conserve the Leuser area forever was reflected in the establishment of criminal sanctions for violators of the protection of Leuser ecosystem area. Sanctions included imprisonment and fines).
July 03, 1934	On July 03, 1934, under the Zelfbestuurs Belsuit (ZB)No. 317/35 regulation, the Mountain Nature Reserve covering 142,800 ha of Leuser ecosystem was established
August 08, 1935	Under regulation ZB No.138, laid the foundation for the formation of Lagkat Secondary forest group. demarcation of the boundary was made on August 12, 1936.

October 2, 1936	Based on regulation ZB No. 122/AGR, laid the foundation for the establishment Wildlife Reserve in Kluet area covering 20,000 ha.
October 30, 1938	Under the decision statement issued by the Sultan of Langkat, secondary Forest Group in, South Langkat, and West Langkat as Langkat secondary Wildlife Asylum with the name Wilhelmina Katen, was made. The area covered an area of 213,985 ha.
December 10, 1976	Under the minister of agriculture statement, SK Menteri Pertanian No. 69/Kpts/Um/12/1976, head of the reserve (SM Kappi) covering in 150,000 ha was appointed
March 06, 1980	Under the minister of agriculture decision statement: SK Menteri Pertanian No. 811/Kpts/Um/ II/1980 of Mount Leuser area covering 792,675 ha was declared a national park.
March 07, 1980	Under the decision statetement of theDirectorate general of the Minity of Forestry, SK Dirjen Kehutanan No.719/Dj/VII/1/1980, the Sub Office for Protection and Nature Conservation (PPA) Mount Leuser received the authority to manage GLNP.
1981	Based on a proposal by submitted by the Indonesian government, UNESCO designated GLNP as a Biosphere Reserve.
March 02, 1982	Under the Minister of Agriculture decision statement: SK Menteri Pertanian No. 166/Kpts/Um/3/ 1982, part of BC Kappi (7,200 ha), and Protection Forest Serbolangit (2,000 ha) were designated as LaweGurah Forest Tourism area.
1982	<p>GLNP in North Sumatra covering 213,985 ha, comprising BCSouth Langkat, BC West Langkat,SM &amp; TW Secondary (SK Menteri Pertanian No. 923/Kpts/UM/12/ 1982)</p> <p>GLNP in Aceh covering an area of 586,500 ha, a combination of SM Kluet, SM Gunung Leuser, SM Kappi, and TW Lawe Gurah (SK Menteri Pertanian No. 924/Kpts/UM/12/ 1982).</p>
December 11,1984	The establishment of a GLNP Technical Implementing Unit GLNP management under the Directorate General of PHPA. (Decree of the Director General of PHPA No. 46 / Kpts / VI-Sek / 84) Designation of GLNP area coverage consisted of SM Gunung Leuser, BC West Langkat, BC South Langkat, SM Sekundur, SM Kappi, SM Kluet, TW Lawe Gurah, TW Sekundur, Serbolangit and Forest Protection Forest Sembabala Limited Production. (Designated as ASEAN Park Heritage in 1984).

1997	Expansion of the area designated as GLNP to cover s 1,094,692 Ha (SK Menteri Kehutanan No. 276/Kpts-VI/1997).
June 10, 2002	The Organization and Administration of National park was changed in accordance with Ministry of Forestry regulation Permenhut No. 03/2007 (SK Menteri Kehutanan No. 6186/Kpts-II/2002).
July 2004	Designation of GLNP, KSNP, and BBSNP as the Tropical Rainforest Heritage of Sumatra, the decision of the World Heritage committee.
February 01, 2007	Procedures for the National Park Technical Implementation Organization and Work Unit (PerMenHut No. P.03/Menhut-II/2007)

Source: GLNP RPTN, 2010-2019<sup>9</sup>

### **Conservation area management**

Protecting and conserving biodiversity and ecosystem is one of the principal functions of GLNP (GLNP-RPTN,2010-2019). The objectives of conservation management include, i) managing and protecting natural resources conservation in order to support sustainable improvement in people's welfare; ii) enhancing the utilization and potential of the environment through conservation, rehabilitation, efficiency and adopt environmentally friendly technology; iii) supporting the implementation of the devolution of central government authority to local governments with respect to environmental conservation and natural resources protection to ensure quality and sustainable ecosystems and biodiversity. Strategies adopted to support environmental conservation include 1) increase the percentage of protected area to 52% of the total area in Aceh Province ; 2) continue supporting efforts to identify the status of national protected areas, provincial protected areas and district/city protected areas to foster clarity in management across different tiers of government; 3) create synergy in the management of space by fostering coordination among institutions, district and city governments within the protected area; and 4) prevent efforts to convert the functions of protected areas into cultivation area by protecting the functions of natural forests and peat as nature reserve, cultural heritage, nature tourism ; 5) support the establishment of a buffer zone that separates national park area and areas that fall under the management of state-owned estates companies or Perusahaan Terbuka Perkebunan Nusantara (PTPN) and the public, which should support field supervision by authorized officers and members of society; 6) enhance the effectiveness of management, conservation and rehabilitation of natural resources and the environment, especially in designated protected forest areas and temporary

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<sup>9</sup> *RENCANA PENGELOLAAN JANGKA PANJANG TAMAN NASIONAL GUNUNG LEUSER PERIODE 2010 – 2019*

production forests; 7) Review of regional development policies and the status of temporary production forests in a protected areas which are vulnerable to misuse; 8) support and foster inter-governmental working partners, YLI with the natives of Leuser Ecosystem Protected Areas to mitigate potential disruption to their existence; 9) prevention and control damaged and polluted Leuser ecosystem; 10) Institutional restructuring and law enforcement in natural resource management and conservation in the nature reserve; 11) identifying a new breakthrough in offering compensation to environmental conservation efforts in Aceh's protected forest areas at the macro level (National, Regional and International).

### **Managing area designated as cultivation/farming area.**

The effectiveness and sustainability of GLNP development strategies in part depend on its ability to manage areas that are designated as space for local communities to engage in activities that earn a living (GLNP-RPTN,2010-2019). This area, in other words, is where GLNP can demonstrate its ability and capacity to manage and contribute to social economic activities of local communities, by supporting growth, equity, and development through forging collaboration with local governments, communities, NGOs, and academia. Objectives of managing the 'cultivation' area include improving and enhancing natural resources and promote conservation of natural resources by supporting efficiency and sustainable use; enhance the utilization and potential of natural resources by making promoting efficiency and application of environmentally friendly technology; prevent irreversible damage to renewable natural resources by adopting environmental conservation indicators that support resource renewability capabilities; gradually delegate central government authority in managing natural resources to local governments to enhance the effectiveness and quality of environmental conservation management; support efforts to utilize natural resources for purposes of enhancing people welfare whilst taking into consideration environmental sustainability, sustainable development, economic interests and local community culture, spatial planning and prevailing laws.

Some of the strategies adopted to support cultivation area management include fostering equitable exploration and exploitation of natural resources and utilization of cultivated land; delineate the main role and function of district and city governments in achieving balanced and equitable regional development; design and implement incentive policies to encourage growth and development in areas designated as cultivation areas; evaluates and review functions of cultivation area for settlement, agriculture, plantation, fishery, production forest, industry and tourism, in accordance with the potential and capacity the land and principles of sustainable development.

### **Strengthening national park management**

Strengthening national park management is achieved through implementing long term plan staggered in annual plans. One of the key components of the process is planning and securing funding for GLNP programs. Funding sources for the national park include the central government budget; Debt for Nature Swap (DNS) mechanism by

the German government; Optimizing access to World Heritage Convention (WHC) and Biosphere Reserve funding; Government to Government cooperation program, such as support from the Government Spain through UNESCO Jakarta since 2006, with objectives to strengthen institutional capacity and human resources, in overcoming various problems area management; and Funding from GLNP and Local government partners. Thus, it is evident that while GLNP has various potential funding sources, the most predictable is the national budget (GLNP-RPTN,2010-2019).

Besides, strengthening national park management also requires the availability of human resources with relevant education and skills. Based on GLNP sources, more than 55% of manpower in GLNP are above 41 years old; a gap between available personnel and demand for manpower with specialization in sociology, anthropology, and economics; and dysfunctional resort management system due to shortage of resort managers and field workers, which factors have hampered effective national park potential exploration, prioritization of development programs, planning, implementing, and monitoring and evaluation of programs and activities with active collaboration with adjacent villages based on respective biophysical, social, economic, and cultural conditions, and other state and non-state actors.

### **Challenges facing GLNP.**

Based on GLNP RPTN 2010-2019), the following are the major challenges:

- Most of the buildings (85%) of 95 premises in GLNP are either damaged and or severely damaged.
- Lack of clear-cut clarification and recognition of the boundaries of the National Park. This is compounded by the fact that the zoning system, which is expected to enhance effectiveness in national park planning, monitoring, supervision, and control, has yet to be approved by authorities, which has created uncertainties on the ground. One of the consequences of the lack of clear boundaries of the national park is the difficulty GLNP faces in resolving disputes with local communities over land.
- Suboptimal Management of the national park area. National park natural resources have experienced degradation as reflected in the decline in forest cover that has occurred since 1989. Deforestation of the tropical rainforests in GLNP that affects 625 ha/year. Besitang area is specifically prone to deforestation. Encroachment of the local communities on GLNP through cut and burning practices, have contributed the reduction of vegetation cover, aggravated forest fires, illegal logging, and disasters such as floods and landslides.
- National Park area is currently using for purposes other those it is designated for. Functions include education, research, plasma supply to support cultivation, enrichment and breeding of species (for research purposes, habitat and population development, and rehabilitation, environmental services and nature tourism). Use of national park for purposes other than those it is

designated for include settlement, cultivation, infrastructure development, utilization of forest products.

- Inconsistency in the regulations on the existence GLNP and use of land and nature resources in GLNP between those issued by the central government and those issued by local governments. Some local governments recognize settlements that are inside the national park by providing basic services to residents, which contradicts central government policy.
- The function of GLNP of contributing to the economy of the local communities is not well developed and integrated with activities of the adjacent villages, which undermines public perception about the importance of the national park in their societal wellbeing.
- Low public awareness of the importance and contribution of GLNP to ecosystems and societal wellbeing. This is part attributable to the limited contribution of the GLNP to key problems the local population face including poverty reduction, land shortage, low education access and attainment, limited access to credit, short term horizon of people's outlook to investment and life. Such obstacles, among others have prevented the leveraging of key societal assets among local communities including various forms of local wisdom, social capital, and using negotiations and consensus in resolving disputes to enhance social and economic development.
- Illegal hunting of non-forest products such as Rattan, swallow nests, resin cats, and jurung fish in national park area.
- Limited applied research that informs GLNP management
- Development of access roads for remote and isolated areas poses the serious threat to illegal access and encroachment of national park areas.
- Management and governance of enclaves (villages that were inside the national park prior to being designated a national park). Enclave areas include Gumpang and Marpunge in management section or Seksi Pengelolaan Taman Nasional (SPTN) area III Blangkejeren; Sapopadang, Sembelin, Silayang-layang and Liang Lebah, in SPTN area V Bukitlawang
- Climate change. Activities to mitigate the impact of activities in GLNP that contribute to climate change include protecting and preventing encroachment on GLNP forests and scrub vegetation by limiting settlements inside the national park, curbing illegal logging, preventing and controlling forest fires, forest restoration and rehabilitation.
- Weak coordination with key stakeholders
- Insufficient and weak management of data and information on the potential for biodiversity and ecosystems
- Suboptimal management of non-timber forest products and environmental support services utilization
- Low education and weak economic status of communities adjacent to GLNP
- High dependence of villages living in villages that are adjacent to GLNP on non-timber forest products from the national park



- High frequency of conflicts over land
- Limited coordination across sector which hamper the coordination and synergy of GLNP activities.

### Policies institutions and process

Refer to CMP of Gunung Leuser<sup>10</sup> page 30-34, There are some categories of main stakeholders in GLNP area III including local district government, local community groups, private sectors and NGOs. These stakeholders are important asset for supporting the management of GLNP especially for filling the gaps currently GLNP faces. Below is the table of stakeholders that potential to contribute to the conservation of GLNP refer to sub-programmes designed by CMP:

No	Brief profiles of potential NGO	Sub-programmes
1	Yayasan Orangutan Sumatera Lestari - Orangutan Information Centre (YOSL-OIC) is a Medan based NGO, aims to conserve and protect Sumateran orangutans ( <i>Pongo abelii</i> ) and their forest homes. YOSL-OIC works with local communities living alongside orangutan habitat, in and around the Leuser Ecosystem, the last stronghold of the Sumateran orangutan and among the most important tropical forest remaining in Asia. YOSL-OIC has expanded the work and developing various projects dedicated to the protection forest and wildlife conservation, helping community in providing alternative source of livelihood by introducing sustainable organic farming method	(1) Co-Management and Area Management, (2) Community Outreach and Conservation Awareness, (3) Biodiversity Inventory, Identification and Monitoring (4) Ecosystem Restoration and Rehabilitation, (5) Law Enforcement (6)Community Development, (7) ecotourism

<sup>10</sup> Konsorsium YOSL-OIC-PILI, July 2018, Collaborative Management Plan Gunung Leuser National Park Collaborative Management Plan Lampung Province, 2018-2023

No	Brief profiles of potential NGO	Sub-programes
2	<p>Founded in early 2000, Yayasan Ekosistem Lestari (YEL) is a non-profit organization on conservation, environmental education and community development, especially those living adjacent to conservation areas. In response to the emergence of various environmental issues across Sumatera, YEL seeks to protect what is left of unique Leuser Ecosystem, and UNESCO World Heritage and home to some of the most abundant and diverse plant and animal life known to science. In particular, YEL is a founding father of the Sumateran orangutan Conservation Programme, which aims at increasing the survivability of the Critically Endangered species of the Sumateran orangutan.</p>	<p>(1) Co-Management and Area Management,  (2) Community Outreach and Conservation Awareness,  (3) Biodiversity Inventory, Identification and Monitoring  (5) Law Enforcement  (6) Community Development,  (7) Ecotourism</p>
3	<p>WCS-Indonesia Program has worked in Indonesia since initial surveys in the 1960s, and opened a formal country program in 1995 under a MoU with the Ministry of Forestry (now Ministry of Environment and Forestry). In recent years WCS has become one of the leading actors in both tiger conservation and the fight against wildlife crime. Successful approaches developed by WCS including survey and monitoring methods, conflict resolution and anti-poaching work.</p>	<p>(1) Co-Management and Area Management,  (2) Community Outreach and Conservation Awareness,  (3) Biodiversity Inventory, Identification and Monitoring  (5) Law Enforcement  (6) Community Development</p>
4	<p>Scorpion Foundation is a non-governmental organization established on 12<sup>th</sup> of May 2015, it has become the leading Indonesian NGO group tackling the rampant illegal wildlife trade currently plaguing our country. Scorpion conducts investigations into the wildlife trade on a weekly, sometimes daily basis, covering all over Sumatera, Java, and Bali.</p>	<p>(1) Co-Management and Area Management,  (2) Community Outreach and Conservation Awareness,  (5) Law Enforcement  (6) Community Development,</p>
5	<p>The Veterinary Society for Sumateran Wildlife Conservation is a registered non-profit organization founded in 2003 by a group of Sumateran veterinarians with a special interest in wildlife medicine and conservation. The goal of VESSWIC is to contribute to the conservation of Sumateran wildlife by providing various kinds of veterinary expertise and services. This is achieved by providing programs and activities managed directly by VESSWIC, and by supporting programs and activities conducted by other organisations and institutions in Sumatera.</p>	<p>(1) Co-Management and Area Management,  (2) Community Outreach and Conservation Awareness,  (3) Biodiversity Inventory, Identification and Monitoring  (5) Law Enforcement</p>

No	Brief profiles of potential stakeholders	Sub-programmes
6	YPOI (Orangutan Caring Foundation of Indonesia) is an active foundation with an office in Medan, North Sumatera. YPOI obtained its foundation status in 2016 following its start as Club Peduli Orangutan of Indonesia (CPOI) for 11 years. YPOI (and CPOI-Sumut previously) has implemented numerous outreach and education programs since 2006. In recent years YPOI and CPOI-Sumut have delivered innovative education programs in local Medan schools, held Orangutan Youth Camps, coordinated Orangutan Caring Week activities, and have created and held after school education programs in their offices for hundreds of local children.	(1) Co-Management and Area Management, (2) Community Outreach and Conservation Awareness, (4) Ecosystem Restoration and Rehabilitation, (6) Community Development,
7	YHUA (Yayasan Hutan untuk Anak) is a local organization based in Medan with focus in conservation of Leuser ecosystem for future generation.	1) Co-Management and Area Management, (2) Community Outreach and Conservation Awareness, (3) Biodiversity Inventory, Identification and Monitoring (5) Law Enforcement
8	Langkat education office is a district level government ministry which organizes early childhood education, elementary education, secondary education and community education affairs and the management of culture within Langkat region.	(1) Co-Management and Area Management, (2) Community Outreach and Conservation Awareness, (6) Community Development,
9	Langkat tourism and cultural office is a district level government ministry which organizes tourism and cultural affairs within Langkat region.	(1) Co-Management and Area Management, (2) Community Outreach and Conservation Awareness, (6) Community Development, (7) ecotourism
10	HPI – Himpunan Pramuwisata Indonesia or Indonesian Tourist Guide Association (ITGA) is a non profit, non political association which groups together, around Indonesia Republics, a Licensed and Individual Tourist Guides, Honorary Members who have direct attention with Tourist Guide Professionalism. The HPI's main purpose is to group, promote and ensure that tourist guides are recognized as the ambassadors of their country. Besides HPI purposes to be active in research and tourism development, and as the vehicle to voice out their members' guide fees and social welfares. HPI offers services to their members but also communicates to those in search of the services of professional area specific tourist guides and where to hire them, as well as actively to promote our members' professionalism to industry partners worldwide	(1) Co-Management and Area Management, (6) Community Development, (7) ecotourism

No	Brief profiles of potential stakeholders	Sub-programmes
11	Forestry Faculty – University of Norht Sumatera is one of leading faculty aims to become a superior higher education institution in the development of science, technology and arts in the forestry sector that supports sustainable forest management and utilization. They have extensively working with NGOs in conservation and wildlife protection, in the field of research and policy analysis.	(3) Biodiversity Inventory, Identification and Monitoring (4)Ecosystem Restoration and Rehabilitation,
12	Biology department – Medan State Univerisyt is one of leading department which focus on biodiversity research and inventory which supports restoration and research management and practices. They have extensively working with NGOs in biodiversity reseach, restoration and education.	(3) Biodiversity Inventory, Identification and Monitoring (4)Ecosystem Restoration and Rehabilitation,
13	Balai Gakkum Sumatera is regional technical implementation unit in the field of security and enforcement of environmental and forestry law which is under and is responsible to the Director General of Environmental and Forestry Law Enforcement (Ditjen PHLHK)	(1) Co-Management and Area Management, (5) Law Enforcement
14	Poldasu is a provincial level of Indonesian Police Department which serves to maintain security and order, uphold the law, provide protection, care and service to the community	(5) Law Enforcement
15	The Faculty of Veterinary Medicine Unsyiah Kuala Banda Aceh was established based on the Minister of Education and Culture Decree No. 79966 / UU dated 17 October 1960 with the name of the Faculty of Veterinary Medicine and Animal Husbandry (FKHP). The Unsyiah Faculty of Veterinary Medicine is the 3rd FKH of the seven FKH in Indonesia.	(3) Biodiversity Inventory, Identification and Monitoring (2)Community Outreach and Conservation Awareness,
16	Medan Bisnis is a local daily newspaper which focus on business and industrial activities at North Sumatera areas and nationwide too.	2) Community Outreach and Conservation Awareness,
17	Antara is national wire and has branches in each provinces. Antara covers wide range of themes in their coverage, including environment and conservation.	2) Community Outreach and Conservation Awareness,
18	Mongabay.co.id is a project from Mongabay.com, a popular environmental science website and conservation news that began in 1999 by Rhett A. Butler. Mongabay.co.id was launched and operates since April 2012 to increase interest in nature and public awareness of environmental problems in Indonesia. Mongabay.co.id has a special focus on forests, but also provides news, analysis, and other information related to the environment.	(2) Community Outreach and Conservation Awareness,
19	Analisa daily news is one of leading mainstream media in Medan.	(2) Community Outreach and Conservation Awareness,
20	KISS FM Radio is one of leading radio in Medan with target audiences are from young professional in Medan.	(2) Community Outreach and Conservation Awareness,



## WAY KAMBAS

Way Kambas National Park (WKNP), is as a national conservation area, which is located in East Lampung district, Lampung province, Sumatera Island. WKNP has its origins in the decision by Mr. Rock A. Maker (Resident of Lampung to designate WKNP forests as protected forests in 1937). The decision was formalized by the Dutch East Indies Government Decree No. 14 Stdbld 1937 No. 38 dated 26 January 1937. WKNP covers an area of 125,621.3 Ha. East Lampung district has an area of 5 325.03 square Kilometers, of which Sukadana sub district covers 756.75 square Kilometers (14.2%). WKNP plays a central role in supporting forests in regulating water management, maintaining surface runoff, microclimate, protecting germplasm, habitat for flora and fauna, and protecting against natural disasters. As mandated in Government Regulation No. 38 of 2007 concerning the decentralization of Government Affairs between the Government, Provincial Governments and District Governments, conservation matters constitute the responsibility of the Central Government. Administratively, WKNP, falls under domain of the Central Government, that is the Ministry of Environment and Forestry. Nonetheless, there is synergy between conservation and regional development activities at the district and province levels. The WKNP area is part of the forest ecosystem in Lampung which requires professional management in integrated manner in order to provide maximum benefit to the environment and the lives of people in Lampung province. The benefits of WKNP include preservation of life support systems, especially its hydrological functions (protection of watershed, water production, and preventing land degradation), source of food and oxygen supply, climate control, environmental support services, source of germplasm and a forum for community empowerment activities in and around forest areas.

**Table 2. History of the evolution of Way Kambas National Park (WKNP)**

1937	Mr. Rock A.Maker (Resident of Lampung), raised the status of Way Kambas protected forests to become a National Park (wildlife reserve). The designation was confirmed in the Dutch East Indies Government Decree No. 14 Stdbld 1937 No. 38 dated 26 January 1937
1974	130,000 Ha of Way Kambas forest was designated a protected area
1978	The status of Way Kambas National Park was altered to become Nature Conservation Area (KPA) under the Minister of Agriculture Decree No. 429 / KPTS-71/1978 dated July 10, 1978. The management of the national park was entrusted to the Sub-regional Nature Conservation Area (SBKPA).
1985	Way Kambas national Park became Natural Resource Conservation Area (KSDA) managed by Sub-Bureau for Natural Resources Conservation (BKSDA). Under Decree of the Minister of Forestry Number 177 / KPTS-II / 1985 dated October 12 1985.
1989	During the national Conservation Week that was held in Kaliurang, based on the recommendation of the local government, Way Kambas Natural Resources Conservation Area which covered 128,450 Ha was designated a National Park Areas in Indonesia. The designation was

	confirmed in the Decree of Minister of Forestry No 444 / Menhut-II / 1989 dated April 1, 1989.
1991	Based on a Ministerial Decree Forestry Number 144 / KPTS / II / 1991 dated March 13, 1991, formally established Way Kambas National Park (WKNP) under the management of the Sub-Center for Natural Resources Conservation which was directly accountable to the Nature II Resource Conservation Agency Tanjung Karang.
1997	The status of Way Kambas Natural Resources Sub Conservation Agency was raised to become WKNP management under Decree of the Minister of Forestry No.185 / KPTS-II / 1997 dated March 31, 1997. WKNP covered an area of 125,621.3 Ha
1999	The status of WKNP was strengthened by Decree No. 670 / Kpts-II / 1999 concerning the designation of WKNP as national park on August 26, 1999 covering an area of 125,621.30 Ha.

Source: RPTNWK, 2017-2026

### **Long term development strategy and focus**

Based on WKNP long term action plan WKNP-RPJP, 2017-2026<sup>11</sup>), the focus of the national park is on the following areas:

- enhance the level of protection to flora, fauna and ecosystem in WKNP; strengthen conservation of flora and fauna diversity and ecosystem in-situ to prevent extinction of species, maintain genetic purity and diversity of species and maintain balance and ecosystem stability.
- explore and utilize in a controlled manner the potential of living natural resources, flora and fauna and their ecosystems in WKNP area; enhance the economic functions of WKNP area to support interests of the national park and those of the local communities living in adjacent villages.
- integrate WKNP area management with regional development activities at the village, sub-district, district, and province level as well as in synergy with various domestic and foreign parties.
- enhance the quality and quantity of human resources for area management at the resort level to support the implementation of resort-based management as well as the quality and quantity of human resources to reduce disparity in the distribution of human resources and shortages in technical capabilities.
- strengthen the mandate WKNP must protect animal habitat to go beyond focus on protecting and managing the Elephant Conservation Center or Pusat Konservasi Gajah (PKG), while paying little attention to the protection and conservation of the natural habitat of the Sumatran Tiger the population of which has shown a decline in WKNP; and
- Increase the scope of the Sumatran Rhino (SRS) breeding center, which is the first in Indonesia as a center for research and development on Rhino breeding; and the need to create an environment that appreciates and incorporates

<sup>11</sup> **RENCANA PENGELOLAAN JANGKA PANJANGTAMAN NASIONAL WAY KAMBAS PROVINSI LAMPUNG PERIODE 2017 - 2026**

interests of partners by involvement them in planning WKNP programmes, which is vital for the sustainability of their activities as well as National Park functions.

### **Empowerment of communities in villages around WKNP**

The existence of a conservation area such as WKNP cannot be separated from the existence of the people who live around it. The interaction between the community and forest areas is almost impossible to eliminate entirely. WKNP management supports community development efforts that are aimed at empowering villages that are adjacent to the park to reduce their dependency on the National Park resource. Some of the community empowerment activities involve developing capacity to control forest fires in WKNP by increasing public awareness in preventing forest fires and providing protection and security by through the establishment of fire awareness communities (*Masyarakat Peduli Api/MPA*). In 2007, MPA units were formed in villages around the Way Kambas National Park area. In addition, in 2007, the mode masyarakat konservasi desa (MKD) /Village Community Conservation Model was formed in Brajayekti Village, which is charged with activities that include joint handling of elephant disturbances and fostering a buffer village model. Besides, in 2004, WKNP and JICA (Japan International Cooperation Agency) collaborated in organizing a forest fire management training exercise in Brajayekti Village.

The tourism sector has registered rapid growth over the last decade, which has led an increase in tourism groups. To support tourism activities, YAPEKA, a local NGO, introduced a homestay concept which households can adopt to provide accommodation for tourists in their homes. Initially, this proposal encountered many difficulties because many households considered their houses not ready to adopt the concept, especially with respect to sanitation, and house environment that combined people residence and cattle sheds. However, with passage of time, people have adopted the concept in line with improvement health and hygiene achieved through enhanced public awareness about better home environment and sanitation. In addition, several coaching activities that involved the application of training results on the ground have been made.

Some of the problems that influence social and economic welfare include the difficulty of production, promotion and marketing of produce. Difficulties faced at the production stage, include obtaining raw materials, and labor and wage systems. Without production, there are no goods to promote, market let alone sell.

Nonetheless, negative activities that include entering WKNP illegally to timber, fishing, convert conservation land into farm land continue to plague the relationship between WKNP and village communities adjacent to the park. To that end, TNWK management has taken various measures to minimize security disturbances, especially those ascribed to the above negative community behavior. One of the efforts made has been to form village surveillance on activities that are directly adjacent to WKNP. Thus,

considering the fact there are still many problems that hamper community development and empowerment, there is need for enhanced efforts at intensifying and widening the scope of collaborative efforts between WKNP managers, the government, and other third parties. This is necessary in order to help empower village communities adjacent to WKNP in areas that include management, technology, financing, promotion and marketing of the produce and products.

- *The Adoption of resort-based management.* Resort based area management or Resort Based Management (RBM) is the management of national parks with resorts as the smallest management unit. All information relates to the unique characteristics, potential and problems of certain area are handled by the resort that is charged with managing and controlling the area. Information on the potential of the areas that fall under all the resorts in the national park serves as the main basis for planning national park management. To that end, good governance and management of resorts is imperative for effective and efficient management of WKNP. Nonetheless, the reality on the ground shows that resort management has not underperforming, a fact that is evidenced by the limited information on the potential and problems that are specific to each resort. One of the attributing factors is limited financial support and management infrastructure. This is largely due to the fact that division of resorts is still basically an administrative expediency, which limits the ability and capacity of each resort to identify problems and formulate plans to deal with such problems in order to exploit the potential of the area. Other problems relate to disproportionate quality, quantity, and distribution of human resources among resorts, which undermines the capacity to manage resorts both effectively and professionally.
- *Critical land management.* Based on the vegetation cover status, WKNP area has high coverage of *alang-alang* and shrub vegetation, contributing to approximately 40,000 ha (35%) of the total area. The vegetation spreads out right from the core of the national park, through the jungle, to zones that are designated for utilization. The emergence of critical land in WKNP is ascribed to the high intensity of logging activities that occurred during 1968–1974 period. Regeneration of forest vegetation was hampered by man-made and natural factors including recurrent forest fires, illegal logging, and forest encroachment activities.
- *Forest fires.* Forest fires in the WKNP area are a recurrent problem. Forest fires in WKNP pose a serious threat to the park that is attributable to changes in climatic conditions, land, vegetation, and damage and destruction of ecosystems and attendant biodiversity. Human activities through encroachment and hunting activities are the main factor responsible for forest fires. Locations that are prone to forest fires include Resort-area Management of National Park or Resort Pengelolaan Taman Nasional (RPTN) Rawa Bunder and RPTN Susukan Baru (SPTN I Way Kanan), RPTN Toto Projo and RPTN Rantau Jaya Makmur (SPTN II Bungur) and RPTN Margahayu and RPTN



Kuala Penet (SPTN III Kuala Penet). The remote location of forest fire prone areas makes firefighting efforts difficult. Consequently, areas that are prone to forest fires, which cover an area in of 40,000 ha that was once dominated by woody plants has been converted into easy to burn thickets and shrubs. To reduce the damage, there is need for restoration of the ecosystems which is only possible through specific habitat development efforts. In addition, to anticipate the incidence of forest fires, there is need to create firebreaks, especially in areas that are highly vulnerable to recurrent forest fires.

- *Illegal hunting.* WKNP has a large population of a diversity of animal species. The list includes wild boar, sambar, deer, and napu, which are often the main target of animal poachers. Besides, animals on the endangered species list, such as the Sumatran rhino, Sumatran tiger and Sumatran elephant are also regular targets of poachers. Other illegal activities include poaching national park birds and illegal fishing of freshwater fish in the national park.
- *Conflicts between communities and animals.* Habitat damage and low quality of ecosystems are considered to be important factors that force some national park wild animals to go out of the park and enter into village community land and households. Such incursions of animals into village communities have led to frequent conflicts. The damage that elephants cause to cultivated land, especially in villages that are directly adjacent to forest areas, has been the main source of conflicts between national park wildlife and AHP adjacent village communities. The disturbance caused by elephants, which come in groups of between 5 and 50 animals, occurs on more than 150 days in a year. Elephants are attracted by the scent of flowers of blooming crops, which village communities around WKNP grow during the rainy season. Elephants search for alternative food to supplement dwindling forage in their natural habitat. This is despite the fact that during the rainy season, elephants have access to abundant food stocks from inside the WKNP area. One of the solutions to prevent the recurrence of elephants' incursions into community land and households is to intensify the construction of canals that restrain the movement of elephants from the national park area to community land.
- *Timber theft.* The high demand for wood by the community for various purposes such as building materials is one the main reasons for the high frequency of timber theft. Timber types that are often stolen include *puspa*, *meranti*, *merawan*, *gelam*, *laban*, and *sempu* which serve as building materials; and nibung timber that are on high demand among fisherfolks. In addition, there is also petty timber theft, which involves stealing of wood to serves as fire wood by households in villages that are adjacent to the national park. Locations that experience frequent timber theft include RPTN branch, RPTN Umbul Salam (SPTN II Bungur), RPTN Kuala Penet (SPTN III Kuala Penet).
- *Wild pasture.* WKNP has a lot of pasture, both growing in swamps and 'dry' land. Buffaloes are grazed on grass that grows in swamps. However, considering the large number of buffaloes that village members have estimated

in the order of 3,500 heads, grazing on swamps is far from enough. Consequently, illegal grazing practice often occurs in several locations including RPTN Bungur and RPTN Kuala Penet. Moreover, the increase in herds of buffaloes that is grazing in swamps has increased competition with elephants and deer that naturally graze there. Another problem is that grazing of domesticated animals on conservation grass poses the danger of causing transmission of disease from wildlife to buffaloes and vice versa. Some of the efforts were made to deal with the problem, include conducting dialogue that involve buffalo owners, village officials, sub-districts and related agencies, as well as intensifying activities of resort monitoring and patrol officers. While the number of buffaloes that graze in nation park forests has decreased, it is still large. Based on the recent count, there are still 280 buffaloes grazing in WKNP forest area.

The focus of activities of WKNP in the long term include : i) fostering the realization of management, development and utilization of Way Kambas National Park in a streamline, integrated, and sustainable manner in line with the principles of Natural Resources Conservation at both the sectoral and regional development level; ii) Maintaining and strengthening the function of the Way National Park area Kambas national park in line with its mandate as a designated area that has various unique ecosystems and cultural uniqueness and diversity of the local communities living in adjacent villages surroundings that are unique and in tune with efforts to conserve the area, provide nature conservation functions, and support the achievement of community welfare; and iii) fostering and facilitating the realization of cross-sector cooperation which is oriented toward the development and utilization of the restricted zone in the WKNP area specifically to support general or specific recreation, whilst protecting and preserving the nature reserve and nature conservation areas, in ways that are line with natural resources development programme.

Thus, the focus of WKNP long term development include:

- strengthening the core functions of conserving nature reserve, biodiversity and habitat for the unique flora and fauna;
- strengthening conservation management based on more effective, participatory and collaborative resort-based management with other state and not state stakeholders;
- Supporting the preservation of the diverse and unique cultural values and traditions; contribute to improving socioeconomic wellbeing of people living in villages adjacent to the national park;
- Create synergy with local governments and other sectors in designing, planning, and implementing programs to support integration of National Park development activities with those of local governments; and
- Enhancing people's awareness and interest in environmental conservation to support the existence of the national park and its functions as well as in

preserving the environmental support services and ecosystems that are crucial for sustainable livelihoods.

Nonetheless, WKNP faces several challenges, that include:

*Challenges*

- Inadequate implementation of the protection of WKNP flora, fauna and their ecosystems;
- Suboptimal implementation of in-situ preservation of flora and fauna diversity and their ecosystems in the WKNP area to prevent the extinction of species, maintain genetic purity and species diversity as well as maintain the balance and stability of the ecosystem;
- Insufficient efforts to explore and identify the potential of natural resources and their ecosystems in the WKNP area that are necessary for improving control and preservation of ecosystem use, flora and fauna;
- the contribution of WKNP to the empowerment and improvement of social and economic welfare of buffer village communities has been limited. This is attributable in part to lack of sufficient autonomy of WKNP management in formulating and implementing its policies and programs;
- Limited coordination and integration of WKNP programs with regional development activities at the village, sub-district, district and provincial levels as well as interests of various domestic and foreign parties;
- Limited human resource capacity to implement resort-based management (RBM). Based on WKNP long term development plan (2005-2019), the national park faces a disparity in both quality and quantity of human resources at the resort level.
- There is need to strengthen efforts and resources of WKNP management to protect the habitat of all protected animals. Most of the attention of current WKNP management focuses on the Elephant Conservation Center (PKG), while the management of the natural habitat for Sumatran tigers has received less attention and resources.
- WKNP has the opportunity to become a reference center on rhino breeding research. One of the plans of WKNP is to build an elephant treatment facility/hospital. However, WKNP faces human resources capacity and limited funding to support the programme. There is thus needed to widen the source of funding for Rhino research from various stakeholders both in Indonesia and abroad;
- The need to incorporate the work and inputs of partners /non state stakeholders in collaborations and future programs to ensure that the contribution of partners' activities to WKNP are recognized and appreciated as valuable to the mutual interdependence of the sustainability of the national park as nature conservation area and improvement in the social and economic welfare of people living in adjacent villages.

- Resolving the protracted problem of continuous encroachment of the local communities on the southern boundaries of national park. This is part because the local population claim customary rights over some of the area that was designated a national park, the high population density in villages surrounding the park, and land scarcity buffer village communities face.

### Policies institutions and process

Refer to CMP of Way Kambas<sup>12</sup> page 34-48, the collaborative institutional planning and development expects to integrate all stakeholder's plans that lead to the development of a conservation village model identified at Braja Harjosari village and Rantau Jaya Udik II village. The aforementioned existing partnerships and cooperation is expected to become an initial social capital toward the model establishment. Institutions identified at Braja Harjosari village are:

Institution Name	Activity	Partnership Pattern	Activity Period
Tourism Agency	Training for Tourism Aware Group ( <i>Pokdarwis</i> ) Building tourism infrastructures (Gazebo, praying area, toilet, and amphitheater) Future planning are electricity installation on tourist location; building the speed boat dock.	Village granted a 3 ha land area to the District's Tourism Agency enacted by a Decree of the Agency.	2017-now
DISPORA	Socialization Training on sewing	Braja Sub-district with DISPORA	March 2018-now
UNILA BIOLOGI	Assistance of the Tourism Awareness Group ( <i>Pokdarwis</i> ) Orchid nursery with the	UNILA with the group	2015-now

<sup>12</sup> Konsorsium YOSL-OIC-PILI, July 2018, Collaborative Management Plan Way Kambas National Park Collaborative Management Plan Lampung Province, 2018-2023

Institution Name	Activity	Partnership Pattern	Activity Period
	Website development		
POLINELA	Making tiwul, local culinary; Packaging Laboratory analysis for food composition	POLINELA with group	2016-now
ALERT	Support for tourism Restoration outside the area (watershed) Mitigation tool	Group Assistancy	2015-2017
WCS	Conflict resolution Activity Facilitation Building guard station Mitigation tool	Group Assistancy	1991-now
Forestry Agency	Granting fruit and timber seedlings (jackfruit and nutmeg)	Agency with village	The end of 2016
KAGAMA (UGM Alumni Family)	Making silage feed branding technology for goat	KAGAMA with community	2014
IPB	Planting water saturated soybean	IPB with community	2017
TAGANA	Lending of speed boat	TAGANA with community	2017
BAPEDAS WAYSEPUTIH	Plan to conduct community trainings	BPDAS with community	2017
IMI (Ikatan Motor Indonesia)	Event participation	IMI with Sepontan	2014-now
WKNP	Conservation Officer training Conservation Camping Updating fish cages donation Updating round pool (bioflok) Environmental and Conservation Socialization Participation in National Conservation Day (HKN)	National Park with community	1978-now
DPD RI	Kudalumping festival initiator Agricultural motivator 30 units of toilets	Senators (DPD RI) with community Senators (DPD RI) with agriculture group	2016
KHS	Community involvement in the team member Community as the supplier for elephant food	KHS with community	2018

Institutions identified at Rantau Jaya Udik II village are:

Institution Name	Activity	Partnership Pattern	Activity Period
ALERT	1 Area restoration 50 Ha. 2 Goat donation (6 goats).	1 ALERT with KOMPAG. 2 Tnot partnering with Village Government (Community only as workers).	1 Livestock donation starting from February 2018

Institution Name	Activity	Partnership Pattern	Activity Period
		3 KOMPAG support on the treatment.	2 Partnership with KOMPAG starting September 2015-now. 3 Obstacles during this time were forest fires on the restoration area which resulted in 50% of plants dying. There are no collaboration with Village Government.
WCS (WRU)	1 PAM Swakarsa	WRU with Village Government	
WKNP	4 Elephant MMP 5 MMP Patrol 6 Boreholes donation 7 Bee farming donation	8 WKNP with Village Government 9 WKNP with individual 10 WKNP with Village Government 11 WKNP with Village Government	2009-now 2009-now 2017 2017
Animal Husbandry Agency	Livestock donation	Agency with Village	2017
Department of Agriculture	Fruit Plant donation	Agency with Village	2016
PT NTF (Nusantara Tropical Farm)/ PT GGP PG4	Boreholes donation	PT NTF with Village Government	2017

There are other potential groups to be encouraged to participate in the collaborative management with the WKNP. The existing community groups and village institutions at Braja Harjosari village as follows:

No	Institution Name	Year of Establishment	Existing Activity	Organizational Obstacles	Future Expectations
1	Village Government	1958	<ul style="list-style-type: none"> <li>Establishment of KTH;</li> <li>Establishment of Waykambas Tourism Forum;</li> <li>Raising conservation officer;</li> <li>Trainings;</li> <li>Tourist Guides;</li> <li>Conservation Youth</li> <li>Minister of Forestry's Target Village (2015-2021)</li> <li>Community empowerment for the fisheries sector (there are 12 round pools and 6 more ponds will be added this year)</li> </ul>	<ul style="list-style-type: none"> <li>Work/Programme plan is not yet existed</li> <li>Lack of knowledge</li> <li>Lack of communication skill especially in foreign languages</li> <li>Lack of knowledge on the good fisheries management</li> </ul>	The establishment of MOU with WKNP
2	Tourism Awareness Group (POKDARWIS)	2015	<ul style="list-style-type: none"> <li>Conducting trainings:</li> <li>Training on homestay management</li> <li>Training on the home industry product processing (food)</li> <li>Training on website management</li> <li>Training on Foreign Language and Hospitality (With DISPORA)</li> <li>Training on Environmental Management (yard management and sanitation)</li> <li>Training on home industry marketing (With PT Aska Jaya)</li> <li>Training on Village Tourism Management</li> <li>Training on Homestay</li> <li>Souvenir Management (Knitted bag, keychain, and stick plate)</li> </ul>	<ul style="list-style-type: none"> <li>Weak in institutions</li> <li>There is no decree from relevant agency for the Tourism Awareness Group</li> <li>Lack of group administration and budget management</li> <li>Lack of marketing</li> </ul>	<ul style="list-style-type: none"> <li>Development of tourism</li> <li>Trainings from WKNP regarding the information of biodiversity of WKNP</li> <li>Partnership with WKNP</li> </ul>

No	Institution Name	Year of Establishment	Existing Activity	Organizational Obstacles	Future Expectations
3	Youth Organization (Karang Taruna)	February 2018	<p>So far there are no activities because they are still waiting for work plans from each division in the Youth Organization (Karang Taruna). The divisions are as follows:</p> <ul style="list-style-type: none"> <li>Human Resource and Organization Division</li> <li>Welfare, Cooperative Economic Development and Small &amp; Medium Enterprises Division</li> <li>Health, Sport, Art and Culture Division</li> <li>Spirituality and Mental Development Division</li> <li>Public relation, Publication and Communication Division</li> <li>Environment and Tourism Division</li> <li>Woman Empowerment and Child Protection Division</li> <li>Legal, Advocacy and Human Rights Division</li> <li>Developing Partnership and Partnership Division</li> </ul>	Work plan from each division has not existed	<p>Establishing environmental cooperation and tourism with outsiders by involving following divisions:</p> <ul style="list-style-type: none"> <li>Environment</li> <li>Orchid conservation by cultivating local orchid cultivation with tissue culture then results from it being returned to the WKNP area</li> <li>White-winged duck (<i>Cairina scutulata</i>) captivity</li> <li>Tourism: Management and promotion of tourism partnering with Tourism Awareness Group (POKDARWIS)</li> </ul>

No	Institution Name	Year of Establishment	Existing Activity	Organizational Obstacles	Future Expectations
4	Purba Kusuma (Art and Culture)	1963	<ul style="list-style-type: none"> <li>Preserving Balinese art and culture (Balinese and Lampung dance)</li> <li>Gamelan Performance</li> <li>Ogoh-Ogoh Festival</li> <li>Waykambas Festival (Cultural Parade)</li> <li>There are 2 dance studio and 1 staging place. The member of this group are 95 people.</li> <li>There are music activities (angklung) with 25 members.</li> <li>Staging activities in various strategic places once each month</li> </ul>	<ul style="list-style-type: none"> <li>There are no coach for the Lampung dance development</li> <li>Lack of supporting equipment</li> <li>Costume for performances has not exist yet</li> <li>Art stage is inadequate</li> <li>Lack of promotion</li> <li>Incomplete musical instruments</li> <li>There are no coach</li> <li>There are no qualified vocalist and back dancers</li> </ul>	<ul style="list-style-type: none"> <li>Partnering with WKNP in promoting tourism activities</li> <li>Build partnership with Local Government</li> <li>Existence of Lampung Dance coach</li> <li>Existence of a better equipment, costume and dance studio</li> <li>Establishment of new division focusing on performance activity</li> <li>Existence of sustainable performance activities</li> <li>Can support the village tourism development</li> <li>Adding new personnel from other hamlets</li> </ul>
5	Forgoten Family	2017			
6	KTH Wanakaryatirta	2017	<ul style="list-style-type: none"> <li>Fish Cultivation using pools</li> </ul>	<ul style="list-style-type: none"> <li>Not yet able to do marketing on the cultivation result</li> <li>Not yet able to handle pests and diseases</li> <li>Not yet able to produce own fish feed</li> <li>There is no equipment for making fish feed</li> </ul>	<ul style="list-style-type: none"> <li>Existence of training for smoked fish management</li> <li>Existence of promotion support from the Local Government</li> <li>Improve road access from Village to ERU</li> </ul>
7	KTH Bina Warga	2017	<ul style="list-style-type: none"> <li>Fish cultivation using fish cages</li> </ul>	<ul style="list-style-type: none"> <li>Not yet able to do marketing on the cultivation result</li> <li>Not yet able to handle pests and diseases</li> <li>Not yet able to produce own fish feed</li> <li>There is no equipment for making fish feed</li> </ul>	<ul style="list-style-type: none"> <li>Existence of training for smoked fish management</li> <li>Existence of promotion support from the Local Government</li> <li>Improve road access from Village to ERU</li> </ul>

8	Braja Farmer Group		<ul style="list-style-type: none"> <li>Organic Agriculture:</li> <li>Melon</li> <li>Chilli</li> <li>Tomato</li> <li>Rice (1 ha paddyfield = 5-6 ton, 1 ha swamp= 6-7 ton)</li> <li>Horticulture</li> <li>Farming majority:</li> <li>Rice, cassava, corn</li> <li>Farm field management is used for: paddyfield: 400 Ha and swamp: 80 Ha</li> </ul>	<ul style="list-style-type: none"> <li>Lack of agricultural equipment</li> <li>Agricultural agents are not maximum</li> <li>Lack of marketing</li> <li>Not yet able to handle pests and rat</li> </ul>	<ul style="list-style-type: none"> <li>Able to develop organic agriculture</li> <li>Existence of organic training</li> <li>Existence of organic agriculture motivator</li> <li>Existence of agriculture activity assistance</li> <li>Farmers of paddyfields are more productive of rice farming</li> <li>PU facilities for sodetan</li> </ul>
9	Community Partners of Forest Police (MPP) for Elephant	2011	<ul style="list-style-type: none"> <li>Convoying wild elephant</li> <li>Facilitation between community and WKNP</li> <li>Help forest police on forest monitoring</li> </ul>	<ul style="list-style-type: none"> <li>Lack of mitigation tools</li> <li>Lack of insentives</li> <li>Not supportive weather</li> </ul>	<ul style="list-style-type: none"> <li>Addition of insentive and destination equipment</li> </ul>
10	BUMDES Mapan Sejahtera	2016	<ul style="list-style-type: none"> <li>Cow development livestock business unit</li> </ul>	<ul style="list-style-type: none"> <li>Funding</li> <li>Institution</li> </ul>	<ul style="list-style-type: none"> <li>Strengthening the institution</li> <li>Addition of funding</li> <li>Addition of business unit</li> <li>Economic business management trainings</li> <li>Strengthening from outsiders</li> <li>Fishery Unit Business Management on a 5 ha area</li> </ul>
11	Sirkuit Sepontan	2014	<ul style="list-style-type: none"> <li>Moto Cross Event</li> </ul>	<ul style="list-style-type: none"> <li>Weather</li> </ul>	<ul style="list-style-type: none"> <li>Can be a national sirkuit</li> <li>Road access improvement</li> <li>Road lighting</li> <li>Existence of networking to the Local Government</li> </ul>



No	Institution Name	Year of Establishment	Existing Activity	Organizational Obstacles	Future Expectations
12	Women Group from Dusun Satu		<ul style="list-style-type: none"> <li>• Producing marning</li> <li>• Producing tiwul</li> <li>• Producing Banana Cracker (sale pisang)</li> <li>• Producing fish crackers</li> </ul>	<ul style="list-style-type: none"> <li>• Lack of funding and equipments</li> </ul>	<ul style="list-style-type: none"> <li>• Development of Home Industry</li> </ul>

The existing community groups and village institutions at Rantau Jaya Udik II village as follows:

No	Institution Name	Year of Establishment	Existing Activity	Obstacles	Aspiration
1	Village Government	<ul style="list-style-type: none"> <li>• 1995-1996 (Definitive Village)</li> <li>• 2002 (Election of Village Head)</li> </ul>	<ul style="list-style-type: none"> <li>• Empowerment</li> <li>• Coaching</li> <li>• Governance</li> <li>• Development of village infrastructure</li> </ul>	MOU with WKNP has not existed	<ul style="list-style-type: none"> <li>• Sustainable Forest, Prosperous Community</li> <li>• Socializing The Decree of the Governor of Lampung No.G/459/V.23/2017 regarding the establishment of human wildlife conflict prevention coordination team of Lampung Province</li> </ul>
2	BUMDES	August 2017	Tarub rental business unit	Lack of rental equipment	Adding more BUMDES business units
3	KTH Wanasari	April 2016	Bee farming development	<ul style="list-style-type: none"> <li>• Weather</li> <li>• Predator attack</li> <li>• Availability of food</li> </ul>	<ul style="list-style-type: none"> <li>• Provision of Calliandra sp. seedling</li> <li>• Adding production</li> <li>• Existence of training on bee pests prevention technique</li> <li>• Existence of weather prevention training for the bee farming</li> <li>• Bee farming training</li> <li>• Existence of support for the bee farming</li> </ul>
4	KTH Mekarsari	April 2016	Bee farming development	<ul style="list-style-type: none"> <li>• Weather</li> <li>• Predator attack</li> <li>• Availability of food</li> </ul>	<ul style="list-style-type: none"> <li>• Provision of Calliandra sp seedling</li> <li>• Adding production</li> <li>• Existence of training on bee pests prevention technique</li> <li>• Existence of weather prevention training for the bee farming</li> <li>• Bee farming training</li> <li>• Existence of support for the bee farming</li> </ul>
5	Community Partners of Forest Police (MPP) for Elephant	2009 (14 members)	<ul style="list-style-type: none"> <li>• Patrol</li> <li>• Guarding conflict-prone locations</li> </ul>	<ul style="list-style-type: none"> <li>• Lack of mitigation tools</li> </ul>	<ul style="list-style-type: none"> <li>• Personnel addition</li> <li>• Talud improvement at 10 elephant prone location</li> <li>• Addition of mitigation tools</li> <li>• Improvement of elephant canal</li> <li>• Making elephant's travel cycle</li> </ul>
6	KOMPAG (Gambas Student Community)	November 2017	<ul style="list-style-type: none"> <li>• WKNP restoration</li> <li>• Member of 60 people, most are students</li> <li>• Taking care of ALERT's restoration activity Merawat in an 1 Ha area. Plant species: puspa, salam, ketapang.</li> </ul>	<ul style="list-style-type: none"> <li>• Lack of funding</li> <li>• Lack of equipment for lawn mower</li> <li>• Lack of fire prevention equipment</li> <li>• There are no mitigation tool</li> </ul>	<ul style="list-style-type: none"> <li>• Existence of institutional/managerial training</li> <li>• Tourism activity can give impact to the community's economy</li> <li>• Programme development</li> <li>• Funding</li> </ul>

No	Institution Name	Year of Establishment	Existing Activity	Obstacles	Aspiration
			<ul style="list-style-type: none"> <li>• Establishment of KTH Pengurip</li> <li>• Development of village tourism</li> </ul>	<ul style="list-style-type: none"> <li>• Lack of support from the parents group member</li> <li>• Lack of knowledge from each members</li> </ul>	<ul style="list-style-type: none"> <li>• Legality of Cooperation Agreement between Village Government and WKNP regarding the restoration</li> </ul>
7	Farmer Group		Activities; <ul style="list-style-type: none"> <li>• Agriculture</li> <li>• Livestock (cow/goat)</li> <li>• Fishery</li> </ul> There are 33 groups each with 25 members	<ul style="list-style-type: none"> <li>• Community has not know about the technology to use livestock dung.</li> <li>• Lack of feed availability</li> </ul>	<ul style="list-style-type: none"> <li>• Existence of appropriate technology on the livestock sector, i.e. utilization of cow dung waste (BIOGAS)</li> <li>• Provision of livestock feed making equipment</li> <li>• Existence of support from the Government</li> </ul>
8	Art Group		Silat and Jaranan activity	Lack of equipment to support the	Programme integration
9	Women Empowerment Group		Production of home industry products (Snack and cake)	Still using simple equipment and packaging	Training of product processing and marketing



## **General portrait of socio and economic conditions of buffer villages**

This sub section presents a general description of socio and economic conditions of buffer villages. Issues covered include livelihood, health services, education services, accessibility (transport and communications), and ecotourism development. The information and data used were obtained from published reports, Central Bureau of Statistic or Badan Pusat Statistik (BPS) indicators, GLNP and WKNP long term development plans, and Collaborative management plan (CMP) reports.

### ***Livelihood sources and implications for National Park functions***

Agriculture is the main source of livelihood for most of the households in AHP neighboring villages. The main activities include cultivating land to grow food crops, commercial crops such as maize, corn, cassava oil palm and rubber, various vegetables, and fruits. In addition, rearing livestock that include mainly cattle, sheep and goats, country chicken and ducks, and fishing. However, some villages that are located on the boundaries of the national park supplement their livelihoods by hunting and gathering products and wild game, fishing and sometimes cutting timber (illegally) from WKNP and GLNPs. Agricultural land comprises irrigated and (wetland) and non-irrigated land (rainfed land). Wetland is used to grow crops such as paddy that require irrigation, while 'dry land' is used for growing other crops include estates crops such as oil palm and rubber, coffee, vegetables, and fruits. Some AHP village members have relatively large number of livestock, given the limited grazing land available. The solution to the problem, however, is to graze livestock in estates/plantations. As regards income per month, it varies widely depending on sector of employment, land ownership status, whether growing estates crops or just shifting cultivation, livestock ownership, gender, and variety of alternative income generating activities a household has. In general, however, based on available data, Rp 500,000 and Rp 1,000,000 per month for households that earn a living by engaging in shifting cultivation and providers of menial labor; Rp.1,000,000 to Rp 2,000,000 per month for households for households that depend on wage income earned by providing labor services to those that have land, and work on plantations, and above Rp 3.000,000 for those households that own and manage land and grow estate crops such as rubber and oil palm (BPS, 2020; PETAI, 2020).

Some of the problems that relate to sources of livelihood for AHP neighboring villages in both GLNP and WKNP include the small size of land plots (0.1-0.3 Ha), which is most households use as to grow food crops as their main source of livelihood. The problem is compounded by the based-on data obtained from most AHP neighboring villages, there is a tendency for the village population to increase in part through in-migration, and the growth in number of existing household members. Rising village population is likely to increase demand for land, where shortage is already high. Land shortage and rising landlessness, and is reflected in high percentage of village population that does not own land and members of households that earn a livelihood by providing labor to various sectors including agriculture, livestock, and estates; high land ownership inequality (Bukit Mas village being a good example). Limited access

to land for many households that earn a living through engaging in land dependent activities (shifting cultivation, livestock rearing, fishing, and gathering and hunting commodities from the wild, among others), translates into high income disparity among households, that in turn exacerbates limited access to sources of skills and capability enhancement such as high education, quality health services beyond those that are basic (offered in public health centers, community treatment halls, integrated service units and village midwives), and employment in the formal sector jobs.

Another compounding factor is that while most AHP neighboring villages have an average of three (3) members per household, some have a higher number that ranges from four (4) members and seven (7) per household (Braja Harjosari village is one example). A large number of members per household, while may not seem to be a problem in the short run as some households consider having many members as an important source of free farm labor; it has the potential to become an obstacle in improving social and economic welfare of the communities as pressure on land increases that will exacerbate land shortage. High land shortage unless mitigated is likely to have adverse impact on efforts to reduce the dependency of AHP village population on AHP resource through the development of non-forest income generating activities.

### ***Health services***

Health status, which is one of the components of human capital (in addition to knowledge capacity and income), has positive influence on human capital accumulation, which in turn positively impacts on economic growth (Musgrove,1993). However, economic growth and development increases demand for health services. Morbidity undermines quality of labor supply, leading to low productivity and inefficiency, which translate into poor economic outcomes. Thus, improvements in health status has positive influence on economic outcomes ascribed to an increase in social and private return on human capital. Increase in return on human capital is as a consequence of lower inefficiency due to sickness, as well as an increase in intensity of work per given quantity of labor supply<sup>13</sup>. Moreover, for developing and middle income countries that still have a large percentage of their population living below the poverty line, investing in policies that increase access and availability of health services is crucial to lifting millions out of not only income poverty but also poor nutrition that is associated with stunting, wasting, and poor human capital (OECD,2003).

Health services are crucial for not only helping the community to deal with sicknesses of household members, but are also an important source of education on child and maternity health, nutrition, and sanitation which are prerequisites of a quality human resource and wellbeing. In almost all the villages covered in the study village members

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<sup>13</sup> Notes on Health and Development, Econ  
570[https://www.dphu.org/uploads/attachements/books/books\\_1470\\_0.pdf](https://www.dphu.org/uploads/attachements/books/books_1470_0.pdf)

obtain basic health services by paying visits to the nearest community treatment unit (*Balai Pengobatan*), community health service posts, public health centers, and general hospitals, in cases that require the handing of general and specialist physicians. Midwives also play an important role in providing basic treatment to children and women. While there are no general and maternity hospitals in most villages, with the exception of villages that are very remote and are yet to be formally established by the government, access to basic health services provided in the nearest community treatment units (*balai pengobatan*), community health service posts, public health centers and midwifery clinics is easy. Nonetheless, differences in accessibility due to disparity of roads that traverse villages, may be an obstacle to having easy access to health services especially for remote villages and in the rainy season when road conditions deteriorate. Some of the problems that relate to health services is the high disparity in the number and variety of institutions and personnel that provide services among villages. Some villages have all the public health institutions and personnel offering health services while others do not have even a single institution. The existence of some cases of malnutrition in some villages, albeit few, is also indicative of the disparity in social economic status across AHP neighboring villages.

### ***Education services***

Availability and access to education services avails opportunity for the population to enhance their capabilities, learn both lifelong skills and specific competences that enable them to achieve their full potential. Education is also associated with enhanced creativity, productivity, and entrepreneurship; considered one of the most effective ways of reducing income inequality through social mobility; a key factor in social, cultural, economic and political development (Chabbot and Ramirez, 2000; Marquez-Ramos and Mourelle, 2019). Besides, access to education enhances a person's readiness, willingness, and ability to learn, search for, assess, and understand information on various aspects of life that are important in making informed decisions. For policy makers, education has an additional role, which is the creation of a well-informed population that can not only comply with existing regulations and policies, but also importantly, contribute to the effectiveness of programs by participating in policy agenda setting, design, formulation, implementation, and evaluation. To that end, in general access and availability of educational services especially pre college education, in a community provides an insight into whether or not a certain community has the capacity to make informed decisions that are based on searching various sources of information, weigh strengths and weakness of each to determine the credibility and veracity of each source, to create and rank alternatives, select the best alternatives, and subsequently establishing commitment to implementing it. Besides, rent seeking, the Dutch disease (characterized by an overvalued exchange rate that discourages growth and development of other sectors save those that explore, extract, process, and export minerals, oil and natural gas resources), neglect of education of

girls in natural resource countries is the other key factor that explains poor development outcomes (Gylfason, 2000).

Nonetheless, the impact education has on development depends in quality of education in an educational system, and level of education. During the 1980s, 1990s and through early 2000s, development agencies emphasized the importance of universal primary education in efforts to support development efforts, which sparked disproportionate investment of public sector resources in pre tertiary education in many developing countries. While high school participation and completion rates shows an increase in the general awareness, understanding and readiness of the population of policy goals and rights, responsibilities and duties of citizens in development, the direct link with economic and social development is limited. On the contrary, tertiary education, which is credited for nurturing leaders in various fields ranging from public policy management, innovation and creativity, to basic and applied research, has shown strong and positive correlation with a country's development, quality of institutional development, and global competitiveness (Hanif and Arshed, 2016).

Thus, there has been a shift in prioritization of education spending from overemphasis on elementary education to a holistic approach that while continues to apportion substantial public spending on pre tertiary education, increasing levels of spending from national and external financing sources is being made on tertiary education in general and in special fields of advanced education that are crucial for enhancing a country's pool of expertise in strategic fields. As regards the association between educational attainment and environmental conservation awareness, access to formal education as such may not be enough if school curricular do not have courses that teach students in all tiers of education the relationships between conservation, biodiversity, and sustainable lifestyles on one hand and sustainable environment on the other.

In other words, if the curricular in formal educational institutions were to have sufficient courses on conservation, education attainment for an individual would be a good indicator of the level of knowledge and awareness of the importance and value of conservation. Nonetheless, formal education attainment through teaching cognitive, social motor, reading and numerical skills indirectly enhances the perception and individual to attach great importance to conserving all components of biodiversity including humans and non-human species. In this study, education is perceived as the means of enhancing the awareness and understanding of village members about the importance of environmental conservation and sustainability to society; 2) possibility of teaching them environmental friendly practices at home and in the way they do their economic activities, for example farming ; and 3) as a way to strengthen their alternative income generating capacity to prevent them from endangering the environment and by extension their livelihoods. The issue is fundamental. While in most villages covered, school age children have access to elementary schools, the

same can't be said about junior, high school, and vocational colleges. The existence of between 2-3 junior schools and 1-2 high schools and 1-2 vocational colleges in each sub district implies that access to post elementary education is not as easy as elementary education. Thus, there is disparity in access to different tiers of education with the largest being at high school and vocational education because of the unavailability of institutions providing educational that level in many villages. The highest educational attainment achieved by most village members ranged between elementary and junior school. There is a tendency for villages that host village offices to also have most institutions that serve other villages in the sub district.

### ***Accessibility***

There is disparity in existing road infrastructure across villages in the same sub-district let alone across all AHP neighboring villages. Some villages have asphalt/concrete surfaced roads, while others have just hardened murram surfaced roads. Nonetheless, while the quality of road and mileage is important, what is more important is accessibility to district and provincial roads that connect villages to sub district, district and provincial government offices. Most of the villages have access to asphalt surfaced roads that link communities to sub district/district and provincial government offices. Access to administrative office is vital for the population to obtain such services as civil records and administration (citizenship, family identity cards, land certificates, subsidized agricultural inputs, and health conditions) that can't be handled by midwives, community health posts, and public health centers. The distance between every village and administrative offices varies, ranging from those that are very near sub district offices and district government offices, to those that are remote, hence very far. To reduce the adverse impact of long distances between villages and local administrative offices, mobile communications are playing an increasingly important role. Most AHP neighboring villages have access to two or more mobile phone service providers with signals that range from strong to very strong. Nonetheless, AHP neighboring villages especially those that share boundaries with GLNP and WKNP face a serious problem that relates to the recurrent seasonal floods that make access to the villages impassable during the rainy season, and weak intermittent signal strength of villages that are far from base stations. However, some villages that are far remote from other those that the long-established ones. That said, in general, interventions in most AHP neighboring is not likely to be hampered by inaccessibility to road and communications services.

### ***Ecotourism development***

Determinants of sustainable ecotourism development include the existence of a holistic vision, strategic design, development and implementation; holistic analysis of the social, economic, ecological and cultural needs of an area; and comprehensive analysis of tourism assets and constraints which the development of tourism in future is likely to face. Besides, other factors that crucial to sustainable ecotourism include involving all key stakeholders in determining the best approaches to use the development of ecotourism in enhancing economic, social, and cultural preservation

and enrichment, participation of the local population in ecotourism program planning and implementation and conducting an analysis of visitor carrying capacity of prospective tourism areas. To that end, to be sustainable ecotourism should take into account perspectives and collaboration of key stakeholders, and components of tourism ecosystem including tourism destinations, habits, and people<sup>14</sup>. To that end, ecotourism has high potential to promote economic growth and development, reduce poverty but at the same time if not well managed may have adverse impact on the environment and culture of destination areas and people (Wahono, Poernomo and Kusumah, 2019). Thus, for ecotourism to generate sustainable benefits to destination areas, its policy design and implementation must adhere to principles of sustainable tourism inter alia, development of holistic planning and strategy; underpin tourism activities by protecting both human heritage and biodiversity; based on long term perspective of sustainable production and delivery of tourism services (Bramwell and Lane, 1993).

In other words, sustainable ecotourism should be based on principles of sustainable development that include, among others:

- striking a balance among generating incomes, employment opportunities and cultural preservation for tourism destinations, while at the same contributing to the conserving local ecosystems by minimizing adverse impact tourism has on the environment and local culture;
- empowering local communities to benefit from ecotourism development by providing necessary training that is tailored to enhancing their understanding and appreciation of environmental conservation and hospitality management in supporting sustainable tourism;
- fostering common understanding of the value of sustainable environment and culture to a thriving tourism sector;
- develop visitor management strategy to reduce the adverse effects of excessive tourism on the environment, infrastructure and societal values and customs; promote organic farming to support tourism activities;
- incorporate environmental conservation into educational curricular to help the young generation internalize the value and importance of environmental conservation and cultural preservation as an integral part of sustainable livelihood; embed the promotion and branding of local wisdom in ecotourism packaging;
- forge collaboration between local tourism actors including local communities, different tiers of local governments, and local and international NGOs in the conduct and evaluation of the performance of tourism activities (UNESCO, 2017).

The development of ecotourism as an important source of income for AHP village communities is considered imperative for the protection and sustainable conservation of AHPs (GLNP and WKNP). Ecotourism provides not only income to supplement

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<sup>14</sup> <https://www.yourarticlelibrary.com/ecotourism/sustainable-tourism/sustainable-tourism-concept-principles-and-strategies-ecotourism/69054>

agriculture, livestock, working on rubber and oil palm estates, and so on, but more importantly with respect to environmental conservation, strengthens the motivation and interest of AHP village communities in using practices that are environmentally sustainable in their day economic activities and most importantly, consider the rich diversity in GLNP and WKNP as invaluable to their livelihoods hence worth protecting. Nonetheless, while ecotourism objects are spread in some villages, not all villages have such objects they can use to attract tourists. Efforts to develop ecotourism is concentrated in just a few locations, which raises concern about the effectiveness of the policy of relying on the development of ecotourism as an inducement to all AHP villages to reduce the pressure they exert on AHP resource. Some of the organizations that have provided support for AHP villages in capacity development and hospitality management include Lampung University (in WKNP), local NGOs, and GLNP. GLNP assist AHP neighboring villages within the framework of community development efforts that are embodied in collaboration and partnership arrangements. Nonetheless, the main focus of ecotourism activities in both WKNP and GLNP are attractions that are offered by the rich biodiversity of the national parks including elephant shows, traversing virgin tropical rain forests, landscape views, angling activities among others.

GLNP and WKNP play a central role ecotourism development for several reasons. First, GLNP and WKNP are the main source of attraction of ecotourism in the respective region because of the biodiversity of flora and fauna that live in the national park area. Secondly, GLNP and WKNP provide employment to AHP village members to support ecotourism in GLNP, hence is a source of supplementary income; thirdly, GLNP and WKNP as part of their development program, support community development activities that provide training of selected AHP villages with high ecotourism potential to improve ecotourism services, facilities, and infrastructure and has established partnerships with AHP villages to support monitoring and protection of GLNP and WKNP resource from unauthorized access and usages.

Problems identified in developing ecotourism include:

- disparity in ecotourism development across AHP neighboring villages;
- limited government support for capacity development of village communities to enhance their readiness to serve as providers of quality ecotourism activities;
- high cost of ecotourism especially in GLNP due to the fact that tourists are required to pay high entrance fees that are part of local government revenue; lack of quality homestays in AHP neighboring villages; and
- poor infrastructure including road network in AHP neighboring villages; lack of financial resources to improve facilities that are needed to enhance the quality services AHP villages offer to attract ecotourists to live and stay for a longer period in their villages.

## Annex 2. Assessment Findings Report based on Micro Perspective

As described in the introduction mentioned in the Annex 1 of this report, the Annex 2 consists of the findings from the fieldwork activities, especially on village-based findings. The report in this Annex is divided into two (2) main findings, namely in GLNP and WKNP using the guided SLA components mentioned. All of the information and data in Annex 2 are derived from the fieldwork exercise, namely interviews, observations, and focus group discussions (FGDs).

### GUNUNG LEUSER

In GLNP, the analysis is based on villages as reflected in the table below.

National park: Gunung Leuser

Regency: Langkat

**Table A2. 1. List of Villages for Data Collection under GLNP**

Resort	Village		
	No	Villages to be included in the data collection	Sub-district
Sekocilepan	1	PIR ADB	Besitang
	2	Mekar Makmur	Sei Lapan
Cinta Raja	3	Namo Sialang	Batang Serangan
Tangkahan			
Bukit Lawang	4	Bukit Lawang	Bahorok
Bekancan	5	Telagah	Sei Bingai

Five (5) GLNP buffer villages were chosen as a sample for the assessment. These villages are in five resorts in GLNP. The selection of villages was based on purposive sampling using the following criteria. The village had to be one of the buffer villages adjacent to AHPs (GLNP and WKNP); the village selected had to be in a resort where SGP programme activities are either underway or planned based on CMP reports. Resort, which is a small unit of territorial division by GLNP management, is located and intersected in the village and sub-district areas according to the state administration. As seen in the following table, there are two resorts located in two different villages. Sekocilepan Resort is in PIR ADB and Mekar Makmur villages; and the Cinta Raja Resort located in the villages of Mekar Makmur and Namo Sialang. Meanwhile, the Bukit Lawang and Bekancan resorts are in only one village each in this sampling village. Each village is part of a different sub-district. This shows that the management of the GLNP area that involves the buffer village community is not only sufficient at the village level but also at the sub-district and even district level, considering the size of the NP area in many villages and sub-districts.



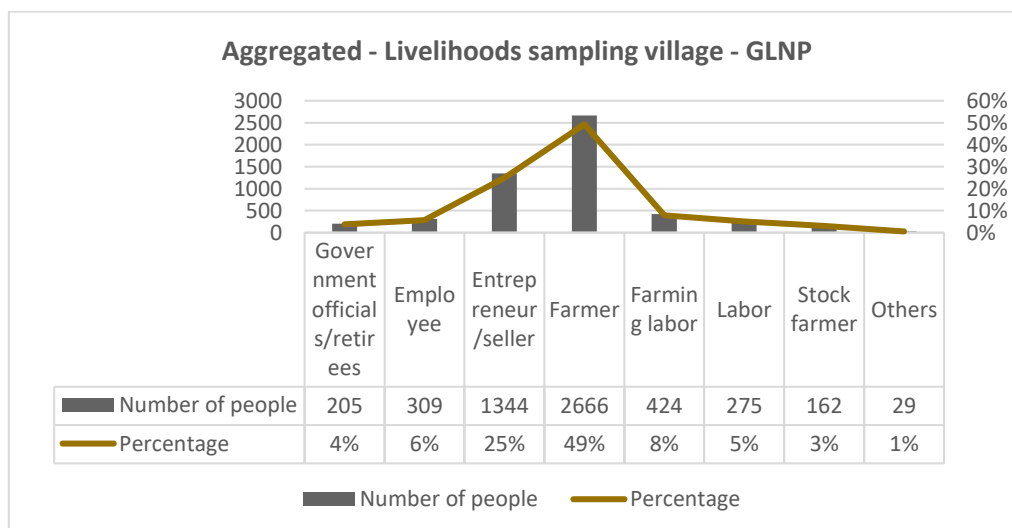
**Table A2. 2. Demographic Condition in the GLNP**

Resort	Village	Population (in 000)	Male	Female	Number of Households	Population density (per km2)	Area in km2	Sub-District
Sekocilepan	1 PIR ADB	3,083	1,527	1,556	755	141,81	21,74	Besitang
	2 Mekar Makmur	3,856	1,991	1,865	925	25	153.4	Sei Lapan
Cinta Raja	3 Namu Sialang	4,793	2,428	2,365	1,165	13	375,02	Batang Serangan
Tangkahan								
Bukit Lawang	4 Bukit Lawang	2,845	1,427	1,418	684	131	21,69	Bahorok
Bekancan	5 Telagah	2,943	1,493	1,450	703	55	53,38	Sei Bingai

From the table A2. 2., Namo Sialang Village and Mekar Makmur Village are the villages with the largest population and the largest area. However, the most densely populated villages were PIR ADB (141 people per km2) and Bukit Lawang villages (131 people per km2). Namu Sialang Village is a buffer village around the Cinta Raja and Tangkahan resorts, while Mekar Makmur Village is a buffer village around the Cinta Raja and Sekocilepan resorts.

The majority livelihoods of community in sampling villages are farmers (49%), sellers (25%) and farming labors (8%). The aggregation data for the livelihoods of the people in this sampling village can be seen in the Figure A2. 1.):

**Figure A2. 1. Aggregated Livelihoods sampling village-GLNP**



The majority of the Mekar Makmur Village community's education level has graduated from elementary school/equivalent, narrowing the choice of community sources of livelihood apart from land-based activities such as agricultural and plantation activities.

Meanwhile, some people who have graduated from high school to university have the opportunity to work outside areas that are not dependent on land. There are several members of the community who are currently working as Indonesian migrant workers or *Tenaga Kerja Indonesia* (TKI) in several destination countries such as Malaysia, Hong Kong, Singapore, Taiwan, Hong Kong and Korea. These TKIs are the ones who contribute to a prosperous three (3) plus family in the village.

Most of the sources of livelihood for the PIR-ADB Village community come from agriculture, self-employment and livestock. The main agricultural commodities of rural communities are oil palm plantations and palawija agriculture. Oil palm plantations owned by the community are community plantations managed by the company. These garden owners can work on their gardens as well as other community gardens and get wages from the company. The company will get back production capital (seeds, fertilizers and maintenance) from the community garden harvest according to the area that the company cooperates with. The general pattern used in this partnership is 80%-20%, of which 80% is the proceeds taken by the company and 20% is the net income received by the community.

The large number of people (both men and women) involved in activities with companies has stimulated various businesses such as car repair shops, motorcycle repair shops, and food stalls. These business actors provide for the needs of the people who work in the company. Therefore, it is not surprising that there are many entrepreneurs in the PIR-ADB Village.

The level of community education is dominated by junior high school graduates or equivalent. The condition of this village's education level is no better than the neighboring village, Mekar Makmur. The level of education of the PIR-ADB Village community can affect the narrow living space other than through agricultural and plantation activities. The difference with Mekar Makmur Village is that some people who have higher education, such as high school or undergraduate level, are still accommodated in plasma nucleus plantations in their village. Accordingly, until now there have been no TKI who work abroad from this village.

The welfare level of the PIR-ADB Village community is dominated by Pra Sejahtera I families amounting to 34% of the total families. This situation shows that most of the community has been able to meet their daily food needs from the partnership pattern. Even so, there are at least 23% of the people who are in pre-prosperous families. These families are dominated by landless families who are partnered with the company. According to the PIR-ADB Village profile data, out of 713 households, 213 households currently do not own land in the village area. To fulfill their basic needs, they work as farm laborers and do freelance daily hunting in the village.

Unlike the conditions in Mekar Makmur Village, the entire PIR-ADB Village community who owns land within the area is willing to follow the conservation partnership pattern

offered by the national park office. According to them, this partnership opportunity has provided legal certainty for land in the area. Even though they realize that the nature of land ownership is only usage rights. According to them, although the status is only usage rights, the cultivators can still take the results from cultivating land in the GLNP area as a support for the family's economy. In total there are 19 KTHK.

Community agriculture is focused on oil palm plantations, rubber plantations, and palawija agriculture. The large number of people cultivating oil palm plantations is influenced by the existence of oil palm plantations around them. Apart from farming, the village community also has a number of cows and goats. The livestock are released by the community in the PTPN II plantation area.

This village has a tourist location that is included in the national strategic tourism area or Kawasan Strategis Pariwisata Nasional (KSPN). The tourist location known as Tangkahan natural tourism is managed by two villages namely Namo Sialang Village and Sei Musang Village. The positive impact of Tangkahan nature tourism has increased people's interest in entrepreneurship in the tourism sector. Some of the entrepreneurial activities carried out by the community in the two villages include opening restaurants, food outlets, souvenir outlets, local guides and homestay rentals. To ensure the comfort of visitors, the Tangkahan ecotourism site is managed by the Tangkahan Tourism Institute or Lembaga Pariwisata Tangkahan (LPT).

COVID-19 pandemic has had a significant impact on the tourism sector. The number of visitors 2020 is lower than in 2019. People who were involved in ecotourism have had to temporarily change jobs to become daily laborers for state owned estates company PTPN II and some migrate outside the region to look for work.

The existing main source of livelihood for the people of Bukit Lawang Village is entrepreneurship related to Bukit Lawang ecotourism activities. Thousands of local and international visitors have had a significant impact on people's economic income. The impact of Bukit Lawang ecotourism can be seen from the number of families in Bukit Lawang Village as many as 92% are included in the category of prosperous families II. Another source of livelihood for the community comes from the people who work for the PTPN II company around the village. The area of PTPN II's plantation around the village is also used by the community to release cattle to the plantation area. This situation also supports the high number of prosperous families II in Bukit Lawang Village.

The position of Bukit Lawang village, which is located between the GLNP protected forest and the company's land use concession or Hak Guna Usaha (HGU) has an impact on the narrow agricultural area owned by the community. However, the presence of Bukit Lawang tourism and PTPN II Plantation has provided job opportunities for the community.

The main source of livelihood for the people of Telagah Village is farming. The types of agricultural commodities produced in this village include rice, corn, tomatoes and oil palm. Telagah Village is one of the sap water producers. The results of this juice extraction are marketed around the village and on the alternative road to Karo Langkat. The potential of this village's sap water is also managed to become a typical drink for the Batak tribe people who are better known as a rice wine or "Tuak", borrowing a local term.

Work in rice fields and dry fields is dominated by women. This culture is one of the cultures attached to the Batak tribe. Therefore, it is not surprising that going around rice fields and farming areas, more women are present than men in these areas.

The opening of the Karo-Langkat alternative route has increased the economic rate of rural communities. Several agricultural products from Telagah Village and from the Karo region can be distributed through this road. This route has also cut travel time from and to Karo District.

As many as 65% of the people of Telagah Village are included in the category of prosperous families II. This shows that most of the village community have been able to fulfill the basic needs and psychological needs of the family such as recreation and regular worship. The impact of improving family conditions has influenced the education trend in the village area. The education level of the majority of the villagers has graduated from elementary school/equivalent. However, the trend in education for Telagah Village youth has started to improve, from high school graduates, they now have college degree holders.

### ***Community economic and ecotourism potential***

Pancasila Hamlet in Mekar Makmur Village is an area included in the orbiting landscape of wild elephants from north to south or vice versa. The movement of wild elephants which routinely pass through the area almost every month can be developed into a place for developing special interest tourism to see wild elephant activity. This development can stimulate the community's economy, such as providing lodging, providing food vendors, and others. People who are accustomed to experiencing losses from the activities of wild elephants can be involved in special tourism activities as well as the provision of wild animal feed in the elephant orbital landscape area.

In PIR-ADB village, the potential for ecotourism development can hardly be found because the village is a nucleus plasma plantation village with an oil palm company. One of the potentials that might be developed in the future with the KTHK group and the PIR-ADB Village community is the formation of a village seed group. This village seed group can provide various forestry plants that can be planted in the KTHK area.

Namo Sialang village has several community organizations formed by various agencies and initiatives from community groups. One of the organizations that

manages the tourism potential in the area is the Tangkahan Tourism Institute or Lembaga Pariwisata Tangkahan (LPT). LPT is a tourism management agency managed by two villages, Namo Sialang Village and Sei Musang Village. Ecotourism management that involves the two villages is carried out because the potential location of this tourism object is in two hamlets in the two villages. Various stakeholders who are currently helping the community's economic development, especially in supporting ecotourism activities, include the GLNP Center, the Tourism Office, several NGOs such as VESSWIC and OIC. Another tour that can be developed together with the LPT is the development of tree houses to see birds in several GLNP buffer locations. The addition of this tourism potential can increase the attractiveness of tourists in the area. The potential that can be developed in the future with the LPT includes a tree care program around the HPT area which is currently being managed by the community. Especially for people living in the PTPN II area, there is the potential for large expanses of grass around the oil palm plantations that can be used as a source of animal feed for both cows and goats.

Bukit Lawang village already has comfortable facilities for tourists. This location provides various options such as the location of lodging, restaurants, selling souvenir trinkets that characterize Bukit Lawang. The potential livelihood options from tourism sector that can be developed in the area is to make handicrafts and souvenir centers typical of Bukit Lawang. This location can be placed on the trekking route to the GLNP area.

In Telagah village, there are people who use juice water as a typical drink for the region. The potential of palm trees which are still abundant in the area is an opportunity for the development of brown sugar. Part of the village landscape which consists of hilly areas, rice fields and as an alternative route to Langkat Karo, the village has the potential for developing a rest area. The construction of this rest area can be done at a location that allows the view. The development of this rest area can also be a potential source of the community's economy

### ***The socio-economic activities of the buffer village communities depending on the GLNP area***

Village communities who have economic dependence on the area are mostly dominated by former Aceh conflict refugees. The GLNP area that they currently manage is their current source of livelihood. The types of agricultural commodities that they grow in the area are dominated by tree crops such as oil palm and rubber. Palm oil and rubber are sold to earn additional income. Until now, most of them have not received certainty of their land due to information regarding the proposed release of the area from GLNP.

There are around 70 households in the PIR-ADB village that have currently accessed land in the GLNP area. The location of the garden from the village is approximately 15-20 minutes by motorbike. The history of land clearing has started in the 90s to 2000

several family heads opened areas within GLNP. This number increased when they received information on the existence of the Aceh conflict refugee oak community in the GLNP area. Conflicts between NP officials are frequent. According to one of the cultivators in the area, they have experienced various intimidations such as the arrest and destruction of the plants they plant since they opened it until the middle of 2018. The process of intimidation for people accessing the GLNP area has stopped after the issuance of Perdirjen KSDAE No P.6/KSDAE/SET/Kum.1/6/2018 regarding Conservation Partnership Technical Guidelines. The existence of this regulation has provided room to legalize management for cultivators who were previously illegal in the area. In order to legalize this land management process, the community must follow several rules such as entering into a cooperation agreement (PKS) with the National Park manager and forming a conservation forest farmer group (KTHK) as a forum for cooperation with area managers. At least 15 KTHK are currently being facilitated by NGO PETAI to obtain PKS. Each KTHK consists of 20-50 families. Currently, KTHK members are not only members from the ADB PIR Village, but KTHK members can come from villages in Besitang District. The existence of opportunities in managing land within the area also adds to families that open up new land in the KTHK area even though their area has been limited by TN officials, which is 2 ha / member. The conservation partnership opportunity has aroused jealousy among the villagers of PIR-ADB who have been compliant. They think that rule breakers will get the opportunity to partner with the GLNP center. This jealousy has manifested itself in several examples, especially the KTHK group in the PIR ADB Village in 2 years where there were additional 20 families. They form their own groups or enter secretly as members of the existing KTHK through a buying and selling process. This example does not rule out an increase in the number of families who have entered or still wish to have gardens within the area.

The existence of LPT as the manager of Tangkahan tourism has increased the dependence of hundreds of families in Namu Sialang Village who are involved in the ecotourism activity. They get economic opportunities from various activities such as local guides, food vendors, security service providers, parking attendants and cleaners in tourist areas.

Not much different from the conditions in Namu Sialang Village, the existence of tourism objects in Bukit Lawang Village has provided opportunities for the community to be involved in ecotourism activities in the area. At least economic opportunities such as being a local guide, snack seller, souvenir seller, parking attendant, cleaning service, opening restaurants and inns absorb a lot of labor in the region.

The rice fields in Telagah Village are sourced from irrigation water in the GLNP area. The sufficient water discharge from the GLNP area makes this area one of the rice barns in Langkat Regency. The existence of the Karo-Langkat alternative road that divides the GLNP area provides an opportunity for the distribution of goods from the two districts more quickly. Various agricultural products from Telagah that were

previously less economically valuable (such as agricultural production, livestock and sap water) after opening the access have improved the economy of community, especially Telagah Village. The opening of this alternative route also stimulates the community to open a rest area with views of the GLNP area and Telagah Village.

***Empowerment programmes in the economic sector carried out by various stakeholders in the buffer villages around the GLNP area***

**1. Programme in Mekar Makmur: agriculture and infrastructure**

Several farmer groups in Mekar Makmur village have received assistance in the form of cattle and agricultural equipment. The beneficiaries of this assistance are only around 12-15 families who come from farmer groups. Unfortunately, this empowerment program is not sustainable because the management of farmer groups cannot manage the assets provided by the government. The village fund program obtained from the central government is still directed at building road infrastructure. Particularly, in the economic sector, villages have formed village-owned enterprises which have so far not shown any results from their activities. Several empowerment programs in Mekar Makmur Village are provided by NGO PETAI. PETAI's main activities are community assistance that has an impact on wild elephants, development of elephant monitoring and facilitation of community KTHK groups that are based in Mekar Makmur. The forms of assistance for KTHK groups include assistance to form groups, various trainings related to agriculture and the provision of seeds for fruit trees and forestry plants.

**2. Programme in PIR-ADB: agriculture and infrastructure**

Like most villages, PIR-ADB Village has received agricultural equipment assistance, plant seed assistance and subsidized fertilizer assistance from the government through several farmer groups in the village. This program is not routinely obtained by farmer groups every year. Unfortunately, the assistance programs received by the community sometimes do not match the needs of the community. The timing of this government aid usually appears at the end of the year. Allocation of village funds from the central government is still focused on developing village infrastructure such as roads, village offices, assistance for religious facilities and construction of sewers. Mandatory village-owned enterprise program. There is a Petai NGO that assists several community members who are members of the KTHK group. The forms of assistance for KTHK groups include assistance to form groups, various trainings related to agriculture and the provision of seeds for fruit trees and forestry plants.

**3. Programme in Namo Sialang: agriculture**

The community empowerment program in Namo Sialang Village which involves agricultural activities is still receiving assistance through farmer groups. The empowerment program is provided in the form of agricultural equipment and training for people who are members of farmer groups. This empowerment program is obtained by local governments not regularly every year. As one of the tourist sites that

is included in the strategic national tourism area, until now there has been no assistance from the Langkat Regency tourism office or the North Sumatra Province tourism office. Specifically for empowerment that supports ecotourism, the LPT group received assistance from WKNP, OIC, and VESSWIC. The form of assistance from WKNP is in the form of training on ecotourism, support for ecotourism support equipment. Support programs in the form of training, comparative studies and supply of ecotourism equipment are also provided by the OIC. Meanwhile, VESSWIC focuses on maintaining the health of elephants in Tangkahan tourism sites.

Bukit Lawang Village received empowerment program assistance from the agriculture and plantation office in the form of agricultural equipment, agricultural training and food plant seeds. This program is given to the community once a year, although not every year this village also gets the program. As a tourist destination village, there are several NGOs operating around Bukit Lawang such as YEL, OIC, and WCS. The NGO's activities are focused on assisting communities in conflict with wildlife.

#### 4. Programme in Telagah Village: agriculture

The empowerment program in Telagah Village was carried out by the Langkat Regency Agriculture Office. The forms of empowerment carried out by the agriculture agency include providing rice seeds, hand tractor assistance through farmer groups and training assistance to farmer groups in the village.

#### ***Vulnerability context: shock, trends, seasonality***

There are various conflicts, causes and resolutions of conflicts resulting from changes in the landscape of the buffer villages around the GLNP area. Conflict between wild elephants and Pancasila Hamlet, Mekar Makmur Village, which is part of Mekar Makmur Village, occurs almost every at least once a month. This area is an area of elephant mobilization from north to south and vice versa. When passing through the village area, the elephants destroyed the community's agricultural crops, both palm oil and secondary crops that they planted. As a form of elephant conflict mitigation, the area has built a tower as a place to monitor elephants. Monitoring is carried out between forest police partners (MMP) and NGOs operating in these locations. In addition, the community also received assistance in the form of elephant repellent firecrackers when the elephants entered their settlement. Until now, the impact of the losses suffered by the people of Pancasila Hamlet has not been made clear. The community hopes that the losses they suffer will get the attention of various parties.

Another conflict that occurred in this area was the ex-Acehnese refugees who were part of the administrative area of Mekar Makmur Village. Some of them are still not clear on the status of their land in the GLNP area. Expulsion from park officials occurs almost every year. This conflict has subsided after the issuance of P6 of 2018 concerning conservation partnerships. The issue of land conflicts in the GLNP area, which are part of the people of Makmur Village, has yet to end. Differences in perceptions and previous experiences of conflict have made not all farming



communities in the GLNP area willing to join KTHK as a medium of cooperation between cultivators and the GLNP office. So far, several community members who have joined KTHK have received facilitation from several NGO assistants such as Petai and WALHI. The forms of facilitation they provide include forestry plant seed assistance and various trainings in agriculture.

In PIR-ADB Village, several natural resource conflicts that have occurred in the area are the eviction of people who opened up areas within the GLNP area. The people who cleared the land were people who did not own land in the village. People who cleared land in the GLNP area have experienced violent evictions. After the publication of P.6 of 2018 regarding the conservation partnership, the conflict between the PIR-ADB Village community and the GLNP hall ended. Currently, the community can manage their land according to the cooperation agreement with the GLNP Center. After the conflict with the GLNP hall ended, there was a conflict between cultivators who were members of KTHK and cultivators who had not joined KTHK. The cause of the conflict is fighting over land claims that have been cooperated with the GLNP office. Some cultivators who have not joined the KTHK claim that the land that has been recognized by the GLNP Center through a conservation partnership scheme is their land. Until now, these land claims have ended automatically when KTHK members unite to run their PKS with Balai GLNP.

The resource conflict in Namo Sialang Village, which occurred in Tangkahan ecotourism area, was sparked off by a proposal for a social forestry scheme for community forestry or Hutan Kemasyarakatan (HKM) in the area. Most of the people who own land in their Limited Production Forest or Hutan Produksi Terbatas (HPT) area are not aware of the proposed social forestry scheme. The proposed HKM scheme was proposed by several people who did not own land in the area. After the land owners were aware of the proposal that had reached the Ministry, they proposed a reconsideration of the proposed HKM in the area. After the existence of a review letter from the community who owned the land in the proposed HKM area, the Ministry of Forestry decided to postpone the issuance of the HKM permit so that conflicts would not occur in the community.

Another conflict that occurred in the area was the conflict in the management of the Tangkahan tourist object. This conflict was triggered by the formation of the Tangkahan Tourism Institute (LPT) which did not involve all LPT members. According to the LPT members, the CV formation was used to get various program assistance from the GLNP Center and other parties. The conflict has heated up in the past year (November 2019 to September 2020) because there has not been an accountability meeting as well as a change of new management. The conflict ended after several old administrators agreed to form a new LPT board which was legalized in October 2020. Apart from the conflicts mentioned above, community conflicts with tiger animals have occurred in this village area. At least 8 cows were attacked by tigers in 2020. So far, no settlement of compensation for the cows eaten by the tigers has not been found.

The main problem of the people of Bukit Lawang Village is the attack of the Orangutan in the community's farming area. Every time the durian fruit season comes, the owners of the durian trees must guard their gardens. The attack of the Orangutan stopped when the durian fruit season had ended. The villagers realize that the Orangutan is one of the tourist attractions in the area. They also hope that there will be a reduction in attacks by the Orangutan in their area. They convey this hope because until now, durian tree owners often do not get the results from their crops. Various efforts have been made to reduce attacks by the Orangutan, such as guarding the gardens, driving away animals with firecrackers and creating tree cover boundaries between community gardens and GLNP forest. It's just that the forest Orangutan's attacks on community gardens have not diminished.

Another challenge faced by the communities, especially in Mekar Makmur, is the threat from the flooding. Every rainy season, access to Mekar Makmur village is cut off due to flooding. The flood closed the roads and several bridges in the village. According to community information, this flood is a seasonal disaster they have felt for the last 3 years. The cause of flooding according to the community is caused by several catchment and water catchment areas around the hills of the village boundary with GLNP that many communities have opened into agricultural areas. The disaster from the flood can last up to several days even though there is no rain. The impact of this cut off community access causes disruption in the distribution process of agricultural products such as oil palm fruit to palm oil plantations.

### ***Ecotourism***

Even though it is located in a very narrow area, Bukit Lawang Village has very interesting ecotourism potential. There is the Baborok river which has a clear, shallow, and swift river which attracts the attention of tourists to play water in the river. The presence of animals from GLNP Orangutan that occasionally appear in the area also adds to the attraction of tourists visiting the area. The combination of river tourism, trekking into the GLNP area, and seeing the presence of Orangutan makes the Bukit Lawang area an attractive tourist destination for local and foreign tourists.

Despite being a tourist destination, so far people admit that they have not been able to develop a creative economy such as handicrafts based on local materials. The existence of this creative economy can increase the economic income of the community and increase the attractiveness of Bukit Lawang ecotourism. In the last five years, population migration into Bukit Lawang Village has been very large due to the potential for ecotourism in the area. Most of the population migration to the region is mostly temporary, especially in the tourism sector.

Most of the community is involved in ecotourism activities in the village, namely (please state the tourism activities). There are at least three ecotourism management groups, including the Indonesian Tour Guides Association, the Indonesian Restaurant and Lodging Entrepreneurs Association, and the Indonesian Travel Organization.

Besides there are organizations in the business sector, in Bukit Lawang Village there are also 12 institutions that support ecotourism activities such as tour guide groups, cleaning groups, conservation groups, and many more that support ecotourism activities in Bukit Lawang. There are at least more than 400 people (300 families) who are actively involved in this ecotourism activity.

The income earned by the ecotourism operators for example as a tour guide between five to 10 million Rupiah per month, as a restaurant provider will get income between 500 thousand Rupiah to one million per day, souvenir sellers of clothing and jewelry get an income of between 750-one million Rupiah per day and the innkeeper usually gets more than 5 rooms per day. The income of these ecotourists can increase on major holidays and national holidays or from June to September each year.

Currently, there is a Camp Sumatra (an NGO) that provides compensation to communities affected by forest Orangutan conflict. The amount of compensation provided by Camp Sumatra provides compensation of 10,000 Rupiah/fruit. Compensation will be given if the owner of the garden has a photo of the Orangutan on the tree they own. In addition to providing compensation processes, land owners are also given fireworks to create sounds that can drive Orangutans from their location. However, the community also realized that the compensation process would not be sustainable. For that they really hope that there will be the right policy to anticipate this animal conflict.

The animal conflict that occurred in Bukit Lawang Village did not only involve the surrounding community. Several government agencies, such as NP managers, Natural Resources Conservation Center or Balai Konservasi Sumber Daya Alam (BKSDA) and Forest Management Groups or Kelompok Pengelola Hutan (KPH), often miss communication at the field level. The three stakeholders shifted their responsibilities regarding the handling of animal conflicts around Bukit Lawang Village. For example, if an Orangutan or a Tiger has entered a residential area (whether in an area that has become a garden or housing for residents) and it has had an economic impact, the community tries to convey the complaint to the NP officer. Park officials tell the community that the person responsible for the animal conflict is the BKSDA. At the level of minimal information held by the community regarding the roles of GLNP Officers, BKSDA Officers, and KPHs as technical implementing units forestry in the province, causing people to sometimes be reluctant to report the problems they experience.

The role of the government in supporting community economic activities is still minimal. So far there has been no guidance from the Industry and Trade Cooperative Office to support the economy of the people in Bukit Lawang Village. They really hope that there will be coaching and training on the development of the creative economy that can create visitor attraction in their current region. They really hope that the role of the government is not only taking the excerpt from the ecotourism ticket they are

currently developing, but they hope that there are special programmes that can increase the attractiveness of ecotourism which will automatically improve the economy in the village.

## WAY KAMBAS

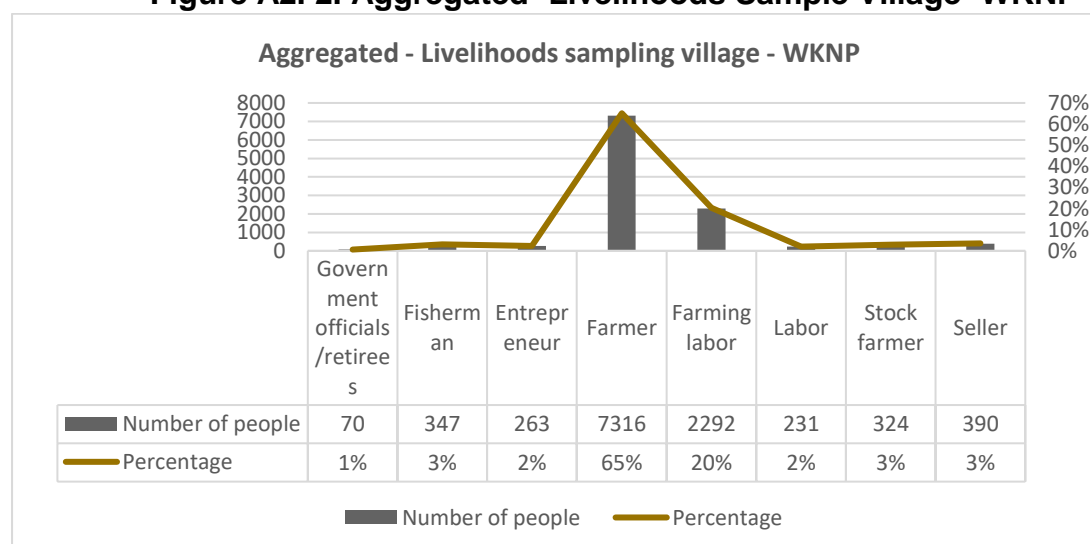
Similar to GLNP, there are five WKNP buffer villages were sampled from this study. As seen in the following table, besides Resort Margahayu, other resorts are in one village (sampling area) and each resort and village are in different sub-district. Table A2 shows that all villages are in average at similar size of population, although Tegal Yoso village is the densest village and Rantau Jaya Udik II is the least dense village.

**Table A2. 3. Demographic Condition in WKNP**

Resort	Village	Population (in 000)	Male	Female	Number of Households	Population density (per km2)	Area in km2	Sub-District
Margahayu	1 Labuhan Ratu 6	3,465	1,824	1,641	1,274	296	11.83	Labuhan Ratu
	2 Labuhan Ratu 7	4,531	2,312	2,219	1,434	444	10.10	
Kuala Penet	3 Sukorahayu	3,105	1,643	1,462	837	326	954.3	Labuhan Maringgai
Susukan Baru	4 Rantau Jaya Udik II	4,438	2,298	2,140	1,431	148	30.0	Suka Dana
Toto Projo	5 Tegal Yoso	4,361	1,644	1,689	1,031	621	5.37	Purbolinggo

The majority livelihoods of community in sampling villages are farmer (65%) and farming labor (20%). The aggregation data for the livelihoods of the people in this sampling village can be seen in the following graph:

**Figure A2. 2. Aggregated- Livelihoods Sample Village -WKNP**



The main source of livelihood for the people of Labuhan Ratu VI Village is farmers. The types of agricultural commodities produced from this village include rice, corn, and cassava. The limited land is owned by each family in this village, some of the village community work as casual daily laborers at the nearby GGP company. With

limited employment opportunities in the village, dozens of members of this village community chose to become migrant workers. The proceeds obtained from working abroad are sent to their families in the village. The proceeds from the money transfers are used in the village to build houses, to buy gardens and four-wheeled vehicles. As many as 42% of the people of Labuhan Ratu VI Village are included in the category of prosperous family I. This shows that most of the village community have been able to meet basic needs but have not been able to meet the psychological needs of the family, including in the field of education. The education level of the majority of the village population has graduated from elementary school / equivalent.

The main source of livelihood for the people of Labuhan Ratu VII Village is farming. The type of commodity developed in this village is more or less the same as in Labuhan Ratu VI Village. Even so, some villagers choose to become traders in the market. The education level of the majority of the villagers has graduated from high school/secondary school. The high level of education of the village community provides opportunities for them to work outside the region. The trend of migrating outside the region is usually dominated by rural youth who want to change their position in big cities in Indonesia.

The main source of livelihood for the people of Sukorahayu Village is farming. They are farm laborers, farmers, and fishermen. The types of agricultural commodities produced in this village include rice, corn, cassava, oil palm, and rubber. Sukorahayu Village is included in the fostered village of the Ministry of Marine Affairs and the target village of the Lampung Provincial Forestry Service. As one of the villages assisted by the Ministry of Maritime Affairs, there are many assistance programs provided to fishermen. This situation has stimulated the entry of migrants who work as fishermen. The level of education of the Sukorahayu Village community is dominated by elementary school graduates/equivalent. This condition affects the limited opportunity to get a job outside the village area. Therefore, the villagers in this village very seldom migrate outside the area in search of work.

### ***Community economic potential and ecotourism potential***

Labuhan Ratu VI has launched a tourism village. This village has a rest area shows evidence of poor management as reflected in the poor state of the facility and unavailability of information directing potential tourists to the location. The position of the village rest area is close to access to Elephant Training Center or Pusat Latihan Gajah (PLG) tourism. The strategic position of the rest area is an opportunity for villages to offer tour packages in the village. As another part of supporting village tourism, there are several handicraft businesses such as batik and coconut shell crafts. The results of this handicraft business have become a souvenir for tourists visiting PLG. With the existing handicraft business, this craft can be developed into a batik training center and a coconut shell craft center.

The existence of a document of cooperation between KTHK and the WKNP office, could be an opportunity for ecotourism development in Labuhan Ratu VII Village. Restoration locations in the WKNP area can be developed into a camping and trekking tour package into the WKNP area. The development of ecotourism in this restoration area can provide economic opportunities for homestay owners, local guides and food vendors around the village. The existence of a land grant for the development of Trigona honey bees can be used as a complementary package for tourist destinations. Honey bees need a variety of plants that have flowers. Garden arrangement with flowering plants can provide natural tourism opportunities as well as produce honey bee products.

As one of the coastal villages that support WKNP, Sukorahayu Village has river potential and mangrove forest potential. The river is a barrier between community land and the WKNP area. Apart from being a barrier, the river is effective at preventing WKNP animals from entering residential areas. The existence of the river can be one of the tourist destinations along the river. According to the community, at certain times there are WKNP area wildlife roaming the riverbanks. The existence of animals in the river can be one of the tourists offers in the village. Tour packages that can be developed with riverbank tours are coastal restoration activities with mangroves. Tourists can be offered to be involved in the mangrove planting process in the area. Currently forest farmer groups (KTH) who are involved in mangrove restoration activities can be supported for mangrove seedlings. The abundant potential of mangrove seedlings can become a potential mangrove seed bank for restoration activities carried out by the Ministry of Forestry.

Rantau Jaya Udik II has the potential for ecotourism in the Way Kambas recreational park. This recreation park provides a place for the performance of the local *lumping* horse dance and the household food industry. Another potential that can be packaged together with recreational parks is the development of trigona honey bee cultivation. To produce a lot of honey, honey bees must be cultivated close to various kinds of plants that have flowers. Various types of plants that have flowers can be arranged attractively at the same time as one of the packages for recreation in the village.

Tegal Yoso has a vast potential for rice fields. This potential can be developed with the rice paddy system. The farmers who develop the *Mina Padi*<sup>15</sup> system apart from getting the rice fields can take the produce from the fish that they spread in their rice fields. At the WKNP border with Tegal Yoso Village, there is a swamp which is a source of water for rice fields in several hamlets in that location. The swamp requires embankments to control water discharge as well as prevent elephant animals from entering the settlement. In the embankment, various types of flowering plants can be

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<sup>15</sup> Mina Padi is a form of combined farming that utilizes stagnant water from rice fields that are being planted with rice as a pond for fish cultivation that maximizes the yield of paddy fields. Mina padi increases land efficiency because one land becomes a means for cultivating two agricultural commodities at once.

developed as a source of food for the trigona honey bee. The development of the trigona honey bee is part of the empowerment of the buffer village community which is supported by the WKNP office.

***The social and economic activities of the buffer village communities depend on the WKNP area***

After the formation of KTHK, there were at least 20 families from Labuhan Ratu VI Village as group members who currently benefited from the conservation restoration activities. In a day they could receive compensation for work on conservation restoration of 85 thousand/day. The existence of the Elephant Response Unit (ERU) provides opportunities for the community in ecotourism activities. These opportunities include homestay providers, local guides, and food vendors.

The people of Labuhan Ratu VII Village have strong dependence of the TNGL area is to be involved in PLG ecotourism activities. The various potentials that they have such as a rest area, a group of handmade batik and a group of coconut shell craftsmen, are not maximized due to the lack of PLG tourists entering their village.

The majority of the Sukorahayu community's economic dependence comes from people who work as fishermen. Rivers and coasts are areas that they use to find fish. While the community in general, economic activities in the WKNP area such as fishing and seeking forest honey.

The dependence of the Rantau Jaya Udik II community on the area is the need for animal feed. So far, the lack of sources of feed for their village has encouraged several livestock owners to seek grass in the WKNP area. In addition, there are several activities to channel the hobbies of the village community, such as hunting, setting traps, and fishing in the area.

There is a water source in the form of a swamp on the border of WKNP and the Tegal Yoso Village area. This water source is used by the community to irrigate rice fields in two hamlets.

***Policies institutions and processes, and partnership***

As one of the villages that proclaimed itself as a tourism village, Labuhan Ratu VI Village received assistance from the government which is currently launching the Enammart program as a center for marketing community products online. This program was initiated by YAPEKA, which is a local nongovernmental organisation that is involved in community development activities. The district tourism office is also paying a special attention to this area. The form of support provided by the tourism office in supporting the tourism village program includes training for local guides and comparative studies to successful tourist sites.

The community empowerment program currently in Labuhan Ratu VII Village is a forest conservation program and the trigona honey bee development program. This program is supported by YABI, which is a local NGO and WKNP management. In this village, an ecotourism program was initiated by the University of Lampung - Alert. To support these activities, Unila and Alert built a conservation house facility as an ecotourism information center in the village.

Sukorahayu Village received a rehabilitation program for coastal areas around WKNP. This program is an initiation of the East Lampung Regency. For a rehabilitation program that requires mangrove seedlings, the group involved in this activity has started to develop a nursery independently. The results of this mangrove seedling seedlings are not only sufficient for the conservation needs of the coastal areas around them, but they have succeeded in exporting the mangrove seeds outside the region. The NGOs that focus on providing assistance in the Sukorahayu Village area are WCS and Yapeka. They help initiate economic programs such as providing fish cage assistance, forming community groups, and facilitating various trainings according to the needs of the village community.

In improving the economy of Rantau Jaya Udik II Village, this village has received assistance and guidance from various parties such as the Agriculture Office, WKNP Hall, and several NGOs (Alert, WCS, and Yapeka). One of the results of assistance from various parties is the Trigona honey bee development program carried out by the WKNP Center. The products of honeybee cultivation are sold in the village and some of it is marketed outside the region. Marketing out of the region is assisted by Yapeka, which is developing the market for local products produced by community via online.

The assistance from the government that is currently evident by the people of Tegal Yoso Village comes from the Regency Agriculture Office. At least once a year, the village joint farmers' primary cooperatives (Gapoktan) members have received support in the form of agricultural equipment and agricultural training facilities.

***Vulnerability context: shock, trends, seasonality***

The main problem of the Labuhan Ratu VI, VII and IX community are the attack of wild elephants on community farms. The three villages are the gates to PLG tourism. The people who own land around the WKNP boundary are accustomed to the attacks of elephants on their farms. In anticipation of the attacks of wild elephants that threaten their agriculture at any time, most people have replaced secondary crops to cassava plants. In addition to changing the types of plants they plant; the community also manages the entry points for the elephants they have identified and places a barrier for elephants to enter the settlement. To ward off these wild elephants, the community is assisted by the Elephant Response Unit (ERU) team or elephant deterrent from the WKNP office. This team has several elephants used by mahout to herd them into the WKNP area.



The farmers' anxiety in Sukorahayu village is the attack of wild elephants on their rice fields. These animal attacks come when the rice season begins to flower until the harvest season. The location of the entrance for wild elephants to the rice fields is through several points of the embankments that have landslides. In an effort to reduce the impact of the elephant attack, the community formed a security group using animal repellent firecrackers. According to them, this method of controlling animal attacks is not effective in the long term. Repairing the landslide embankment can prevent elephant animals from entering the community's agricultural area. Another challenge faced by the village community during this year is the large number of estuarine crocodiles along the river that divides the village from the WKNP area. The crocodiles are troubling for the general public and fishermen who are looking for fish in the river. The large number of crocodiles that have been troubling these residents has yet to be handled by the government and the WKNP office.

Most of the people of Rantau Jaya Udik II own cattle, which they mostly own. Sometimes, these feed needs cannot be fulfilled on the land they have. Some livestock owners who collect grass in the forest are indicated to have also carried out illegal activities such as hunting animals and burning the land to get young grass. To anticipate illegal hunting and the threat of land fires, the WKNP office manager prohibits people from taking grass inside the area. Meanwhile, they try to fulfill the grass needs of the village community in the vicinity of their village. Although some livestock owners still occasionally enter the area when there is insufficient grass around them.

The most dominant conflict in Tegal Yoso Village is elephant conflict. This conflict has occurred since the 1980s. According to the discussion participants, there are at least five (5) groups of wild elephants, consisting of 8 to 20 each. Some of the locations that were attacked by elephants were agricultural gardens and public facilities belonging to the community. For each garden location that was attacked by elephants, they suffered a loss of between one (1) and two (2) million per 0.25 ha (especially for maize and rice crops). Until now, this loss has not received any attention or compensation from the village government or the WKNP office. The attack by the hordes of wild elephants usually occurs when the plants are in bloom until just before the harvest arrives. Various efforts that have been made by the community at this time are guarding every entrance and exit for wild elephants. This guarding activity was also assisted by the Elephant Response unit (ERU) team formed by WKNP.

Other efforts that are currently being fought by the village community are proposing the construction of elephant trenches and proposing the construction of cages where elephants can enter and exit the WKNP area. The construction of this elephant trench has the function of dividing the village area from the WKNP area as well as preventing elephants from crossing into the community's garden area. While the function of the cage is not only as a barrier for elephant animals to enter the settlement, the cage can also provide economic benefits for people who are on guard to keep elephants away.

The affected communities have conveyed the program proposal as an effort to tackle wild elephants, but until now they have not received funding support from the WKNP office or from the local government.

### ***Ecotourism***

There is high potential for ecotourism around WKNP because of the presence of exotic animals in WKNP such as rhinos, elephants, and tigers. The ecotourism location that has been maximally developed is Brajajarjosari Village. This village is one of the villages that are ready to develop ecotourism compared to other villages.

There is tourism potential in Labuhan Ratu VII which offers daily community activities such as agricultural activities in the fields, rice harvesting tours, rubber cutting activities, and making hand-written batik. This activity has been running so far, but from experience these tour packages are less attractive to local tourists. For this reason, in the future, - there are plans about how to package tourism that has been running so far specifically for foreign tourists.

Other potentials that are being developed are the trigona honeybee cultivation business, rhino feed planting packages in conservation areas, and trekking packages into the WKNP area. In the future, this trekking activity will be collaborated with the Elephant Respond unit (ERU) team because they have tame elephants that can be used as a tourist attraction. This tourism potential can be developed together with conservation forest farmer groups (KTHK), which currently have a cooperation agreement with WKNP.

To support ecotourism activities in Labuhan Ratu VII Village, 11 houses have been identified that register their houses as lodging or homestay. The houses that have been declared as lodging places are not always members of tourism conscious community (Pokdarwis) or KTHK. Of the 11 houses, some of the houses have not met the standards for lodging such as cleanliness of residence, cleanliness facilities and supporting wifi.

Labuhan Ratu VI village has tourism potential such as rest areas, shell handicraft places, bamboo handicraft places and hand-written batik creations. Potential that has been running but still not maximized is a place for the creation of handmade batik and coconut shell crafts for souvenirs. Meanwhile, the potential for rest areas and bamboo handicrafts has been developed through village entrepreneur councils or Badan Usaha Milik Desa (Bumdes) and Tourism Awareness Group or Kelompok Sadar Wisata (Pokdarwis) even though the current condition is no longer running. Another potential as a tourism support, in Labuhan Ratu 6 Village there are 10 homestays where most of the homestays already have adequate facilities.

As one of the villages that has a vision as a tourism village, currently the village has been carrying out night market activities once a week. The night market activity is

located at the village hall office which is held every Saturday night. The night market activity facilitates souvenir and food sellers to sell merchandise at the event. The routine activity of the night market has increased the income of Bumdes and the traders who peddle their food. The presence of the night market in addition to providing space for creative economy actors has also stimulated several other groups to make various handicraft products even though they are still on a small scale.

Potential tourists from Labuhan Ratu IX (Plang Ijo) as the entrance to the Elephant Training Center (PLG) also participate in developing tourism in Labuhan Ratu VI. Some tourists who stay at Labuhan Ratu IX offer tour packages to Labuhan Ratu VI. This package offers tours of handmade batik and coconut shell crafts. The tour package between Labuhan Ratu IX and Labuhan Ratu VII has happened several times when tourists take the package.

### ***Relationship between community ecotourism activities and national park***

The existence of elephants in TWNK is an attraction for local and foreign tourists. The existence of tour packages in the WKNP buffer village does not attract tourists when tourists do not have the opportunity to visit or interact with these endangered animals. The existence of this WKNP tour package has provided economic benefits to village communities such as food traders, tour guides, homestay providers and souvenir craftsmen in several buffer villages. The average income of the people involved in ecotourism activities is between 2 million and 5 million during the holiday season.

### ***Role of NGOs and government in supporting ecotourism.***

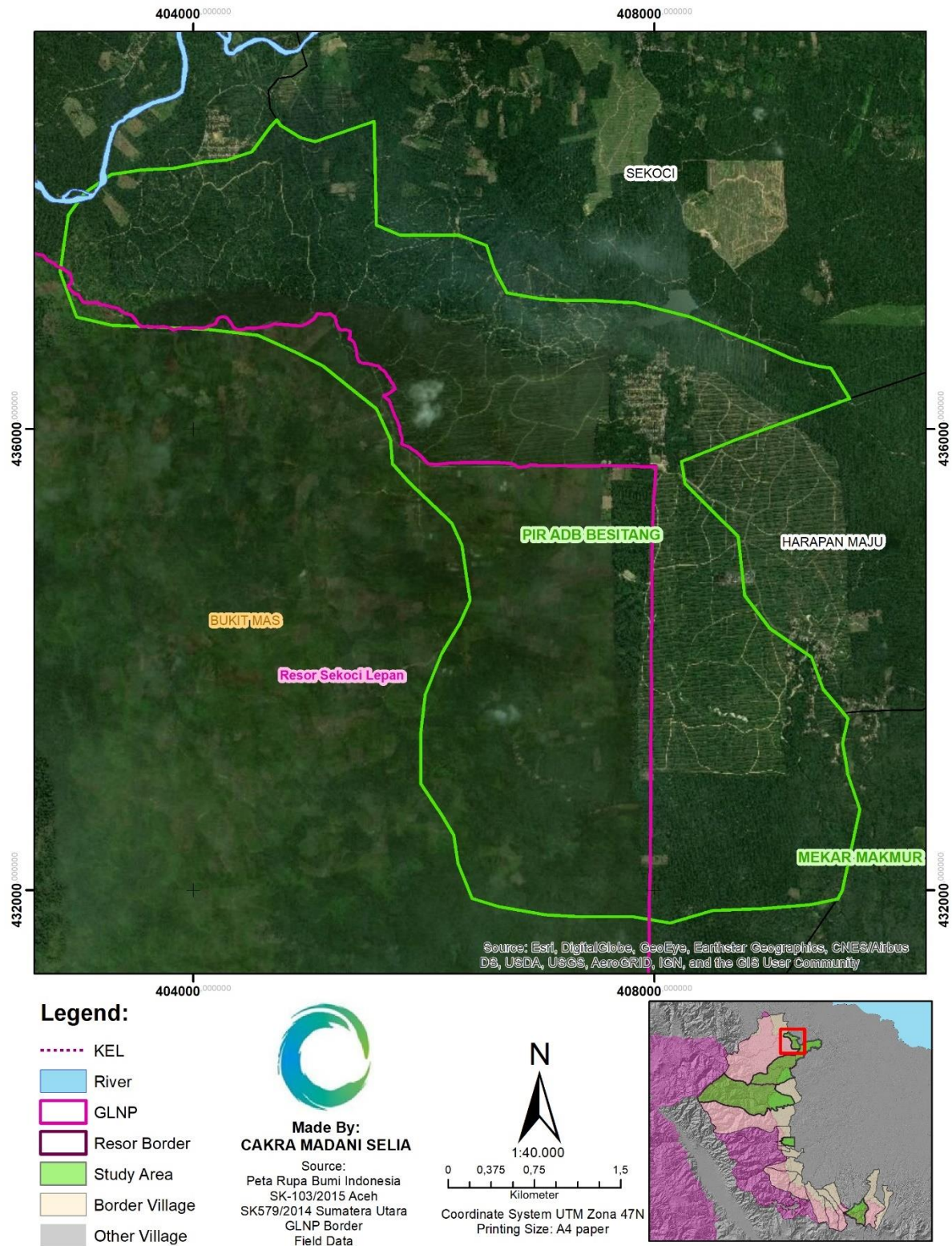
The role of the Tourism Office in supporting ecotourism activities includes provision of decision letter or Surat Keputusan (SK) Pokdarwis, tour guide training and training on the provision of homestay facilities. Even so, the program from the Tourism Office is still not maximal in supporting ecotourism activities in the area. Several NGOs that carry out activities and support ecotourism activities include Alert, UNILA, and YAPEKA. UNILA and ALERT assist in helping to prepare special interest tourism facilities within the WKNP area. Meanwhile, YAPEKA has a role in developing the marketing of local village products such as food products and online crafts. The combination of the focus of each NGO's activities plays a particularly important role in developing ecotourism in the supporting villages of WKNP.

WKNP Balai as area manager has not fully supported the ecotourism activities of the buffer village communities. As one of the administrators of the Elephant Training Center (PLG), the existence of this tourist attraction has not provided direct economic benefits for the WKNP village communities. The buffer village community is not involved in the management of the PLG. The existence of PLG is currently managed by the Sumatra Elephant Nature Tourism Cooperative (Kowagas). The members of the Kowagas are WKNP employees and several MMP members who serve as administrators in the cooperative.

## Maps of Villages for Data Collection under GLNP

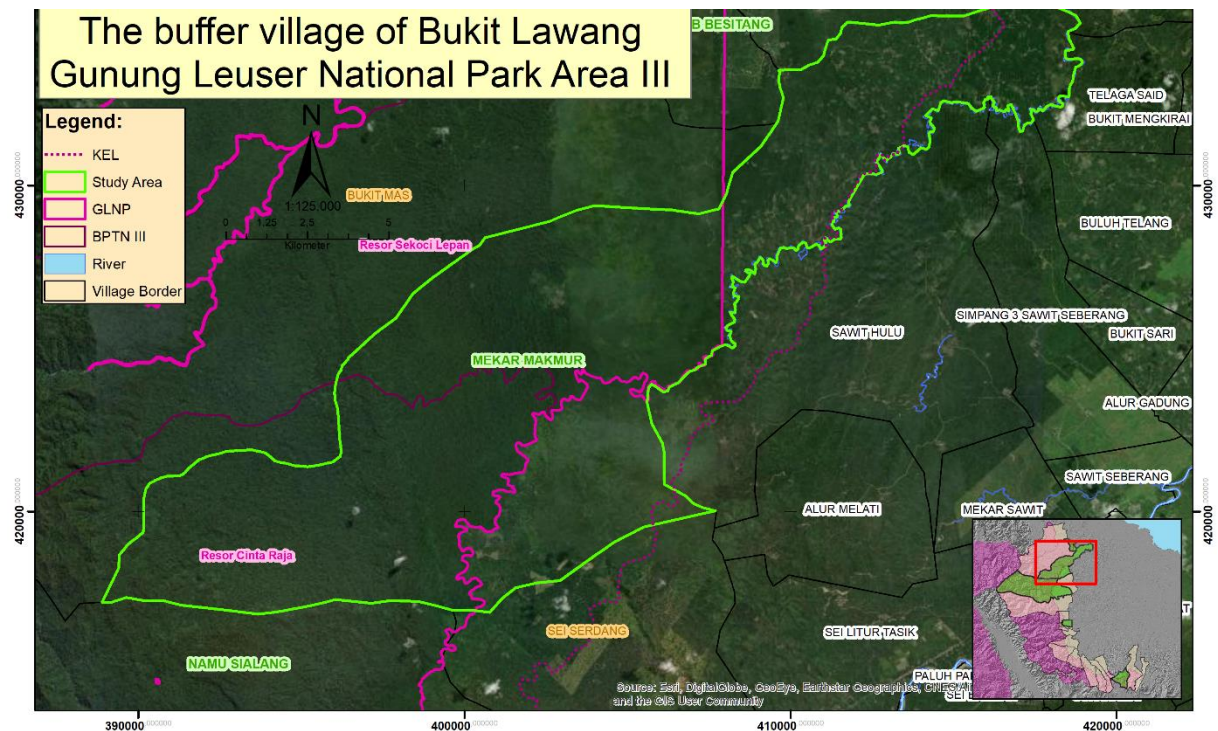
### Map 2.1. PIR-ADB village

The buffer village of PIR-ADB, Gunung Leuser National Park Area III



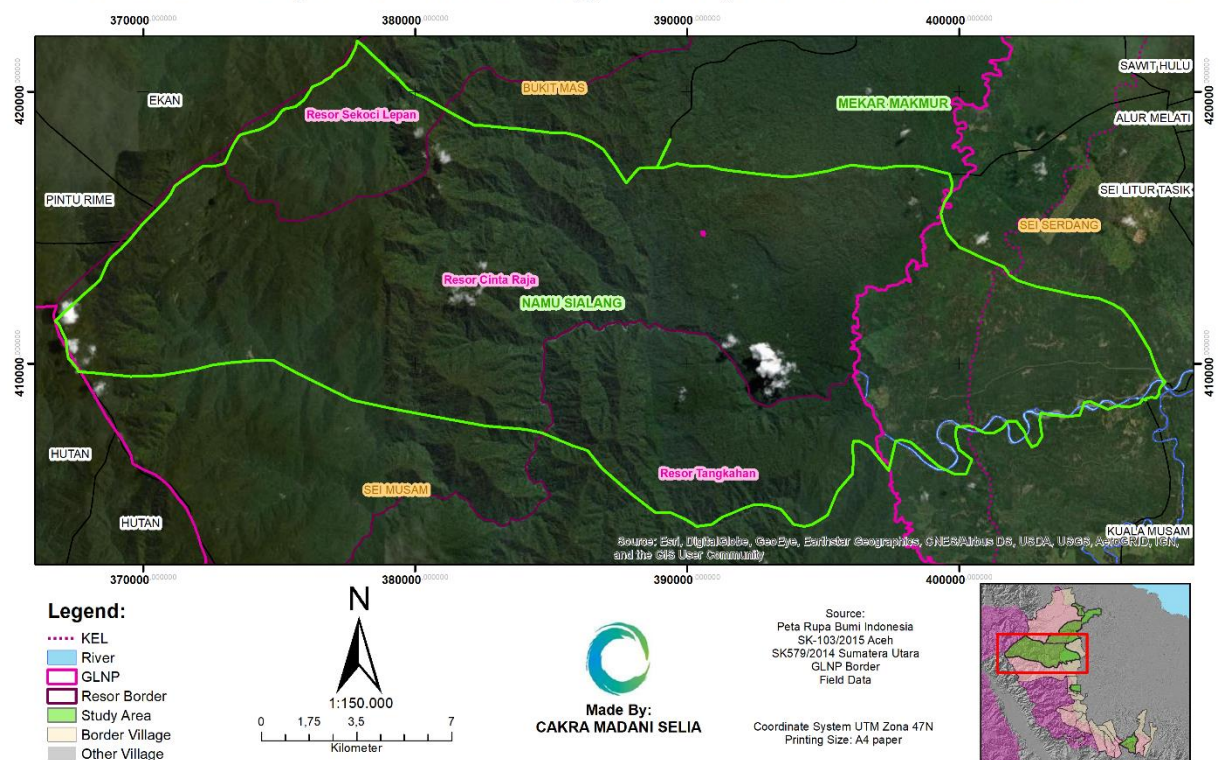


**Map 2.2. Mekar Makmur village**



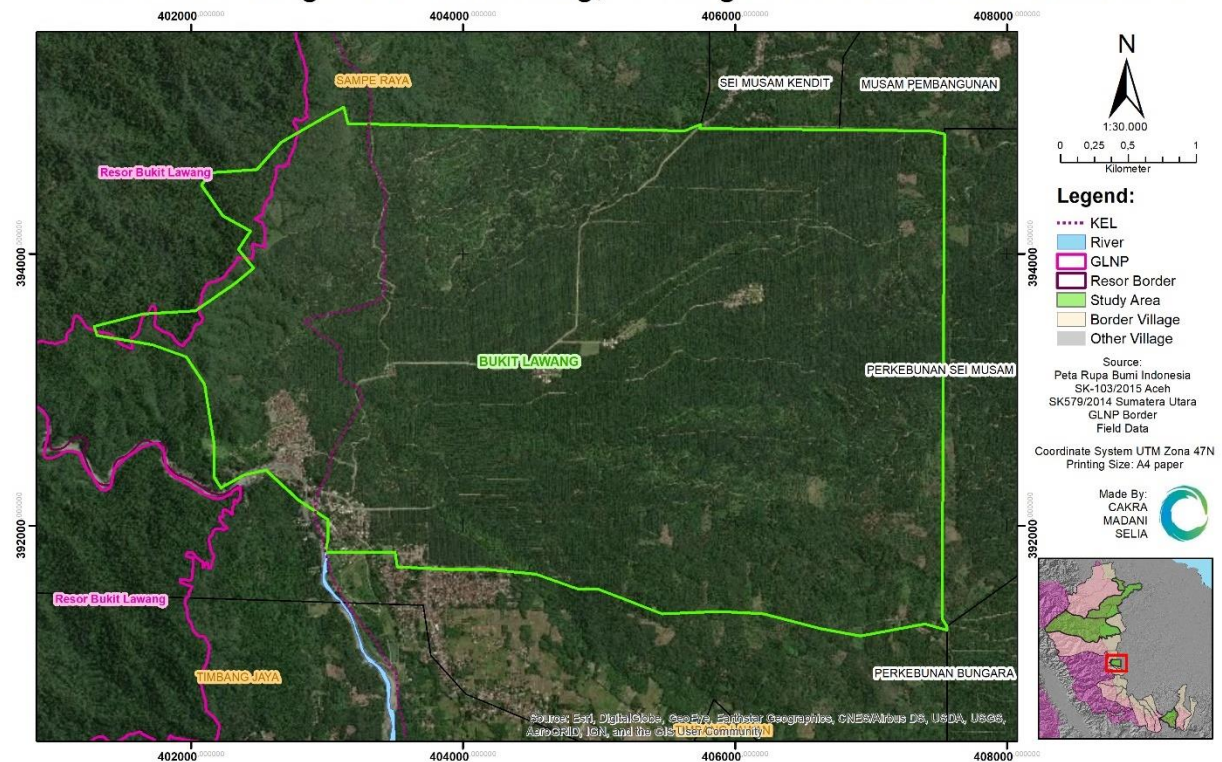
**Map 2.3. Namo Sialang village**

**The buffer village of Namo Sialang, Gunung Leuser National Park Area III**



## Map 2.4. Bukit Lawang village

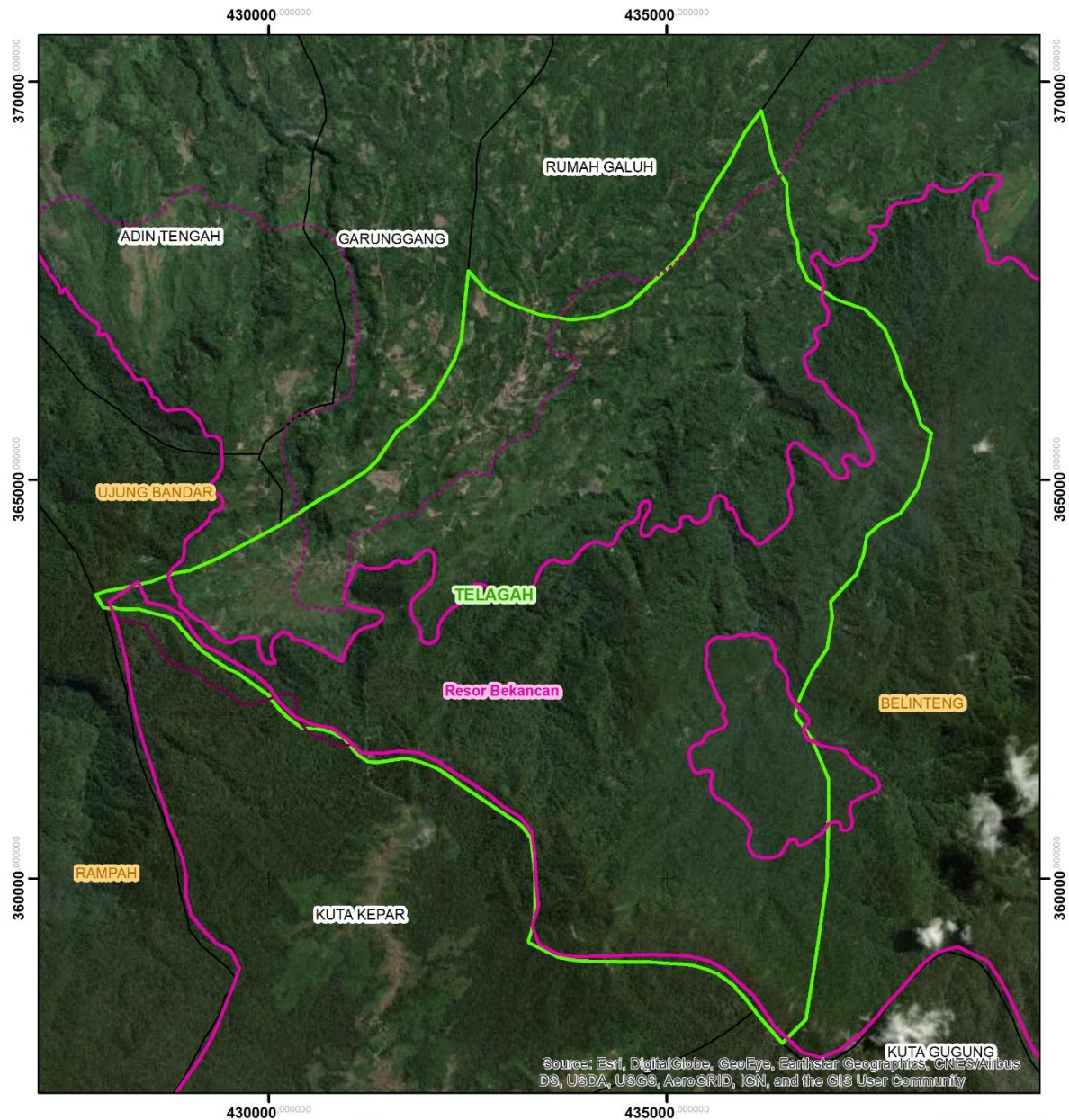
The buffer village of Bukit Lawang, Gunung Leuser National Park Area III





## Map 2.5. Telagah village

The buffer village of Telagah, Gunung Leuser National Park Area III



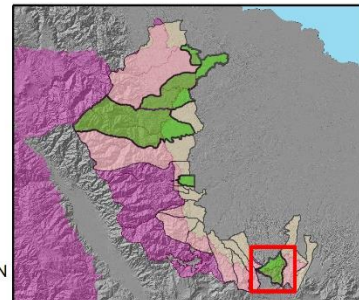
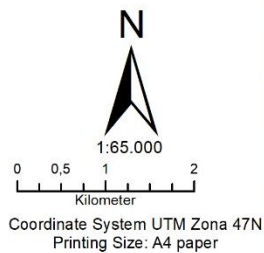
### Legend:

- ..... KEL
- River
- GLNP
- Resor Border
- Study Area
- Border Village
- Other Village



**Made By:**  
**CAKRA MADANI SELIA**

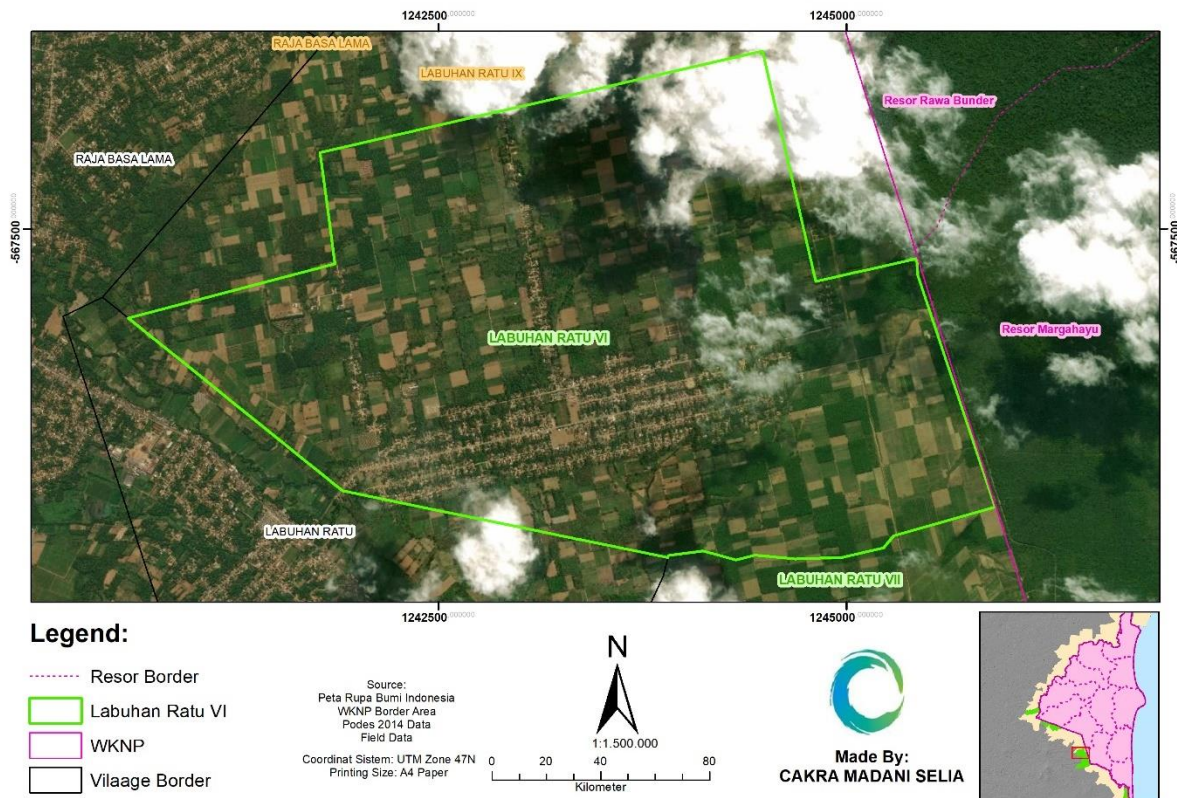
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Field Data



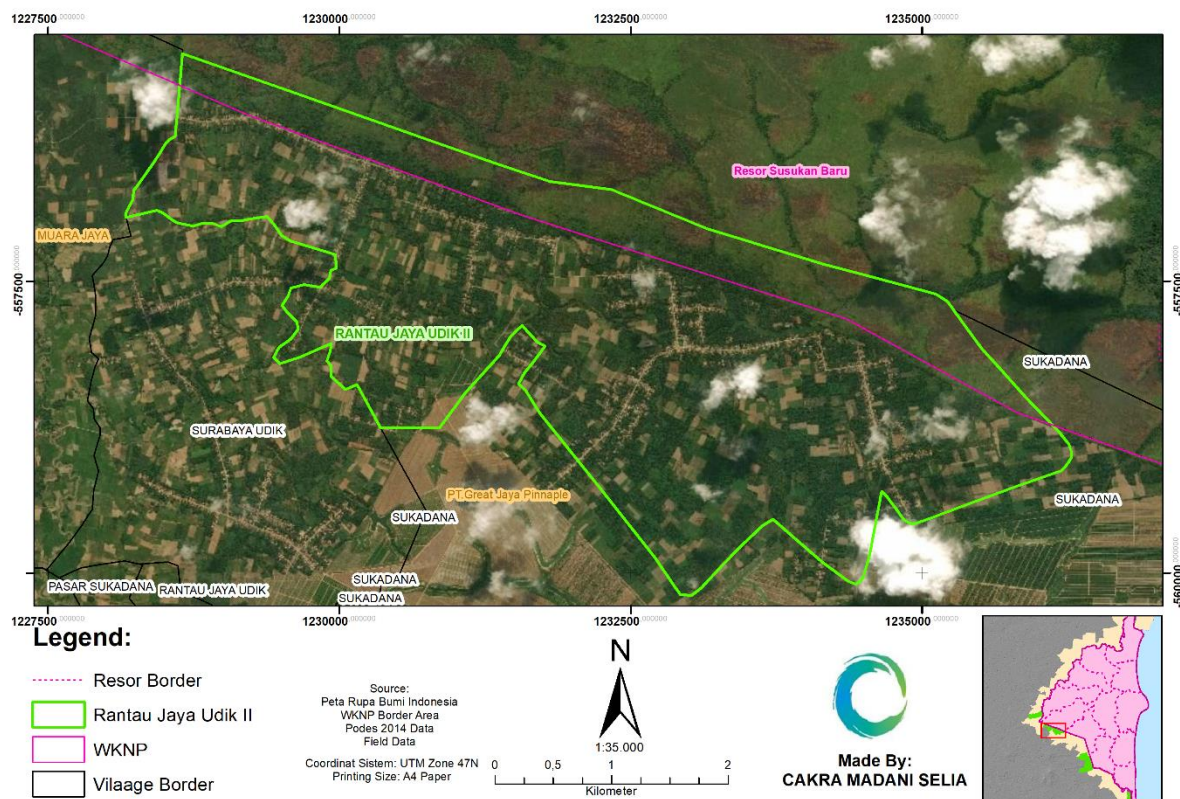


## Maps of Villages for Data Collection under WKNP

Map 2.6. Labuhan Ratu 6 village



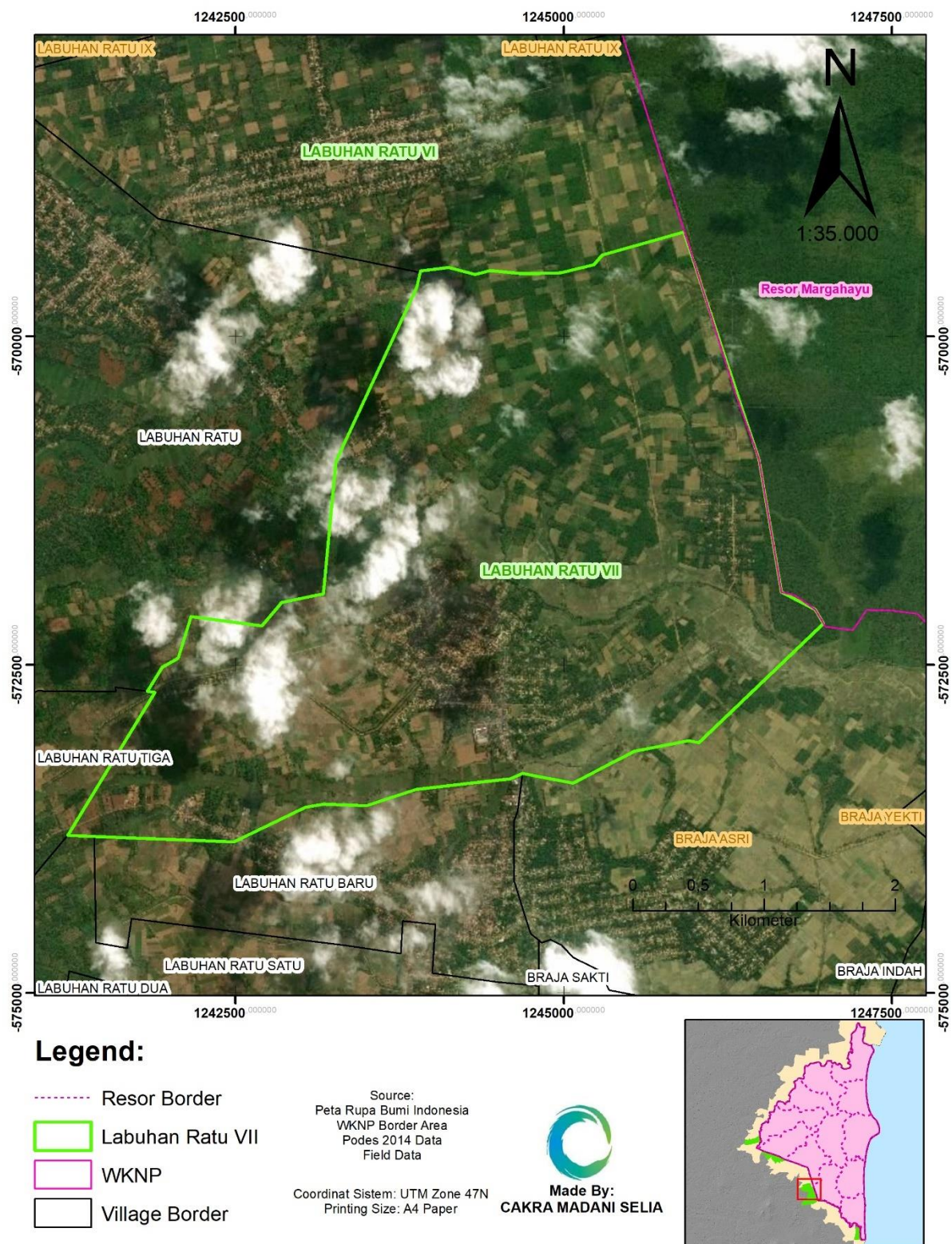
Map 2.7. Rantau Jaya Udik II village





**Map 2.8. Labuhan Ratu 7 village**

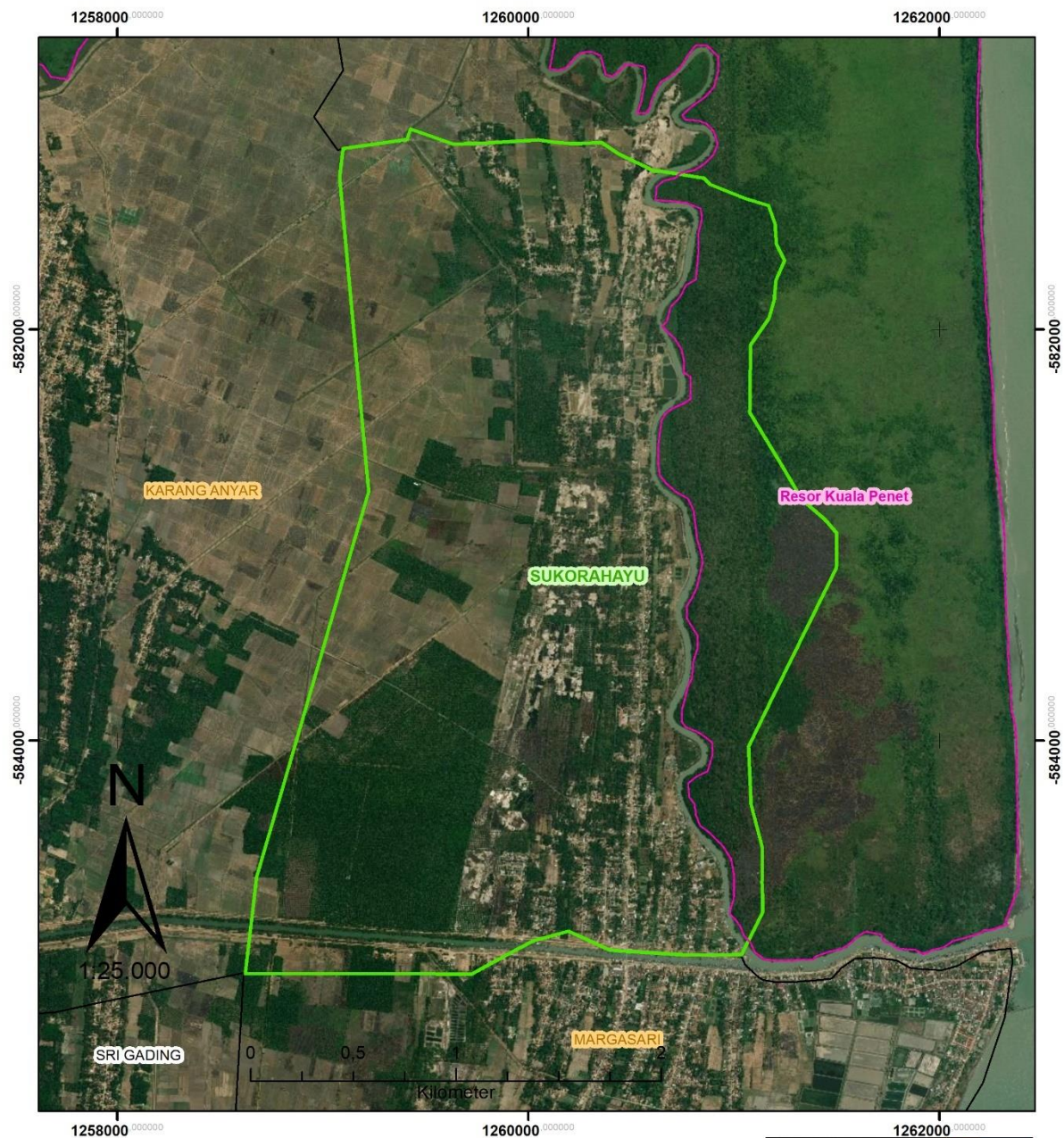
The buffer village of Labuhan Ratu VII Way Kambas National Park





## Map 2.9. Suko Rahayu village

The buffer village of Suko Rahayu Way Kambas National Park



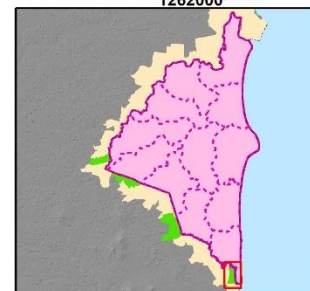
### Legend:

- Resor Border
- Suko Rahayu
- WKNP
- Village Border

Source:  
Peta Rupa Bumi Indonesia  
WKNP Border Area  
Podes 2014 Data  
Field Data

Coordinat Sistem: UTM Zone 47N  
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**Map 2.10. Tegal Yoso village**

