



The ANJ Group HCS Area Loss Declaration and Recovery Plan

A Concise Version.

February 2020

PT Austindo Nusantara Jaya Tbk

Menara BTPN Level 40
Jalan Dr. Ide Anak Agung Gde Agung Kav 5.5 - 5.6
Kawasan Mega Kuningan
Jakarta 12950

Table of Contents

1	Introduction	2
2	Identification of HCS Area Loss in ANJ’s Concessions Between 1 st January 2016 to 31 st December 2018 2	
3	Declaration of HCS Area Loss in the ANJ Group.....	2
4	The Recovery Plan.....	3
4.1	Key Objectives of the Recovery Plan.....	4
4.2	An Introduction to the Recovery Site.....	4
4.3	Recovery Site Description	5
5	Elements in the Recovery Plan.....	7
5.1	Proposed Guidance for the Recovery Plan	9
5.1.1	Phase 1: Setting the Base (Timeframe: 0 – 12 th month)	9
5.1.2	Phase 2: Developing the Management Plan (Timeframe: 6 th – 18 th month)	10
6	Proposed Interim Management and Monitoring	15
7	End Note	19

1 Introduction

PT Austindo Nusantara Jaya Tbk (ANJ) is an oil palm grower and has been a member of the Roundtable on Sustainable Palm Oil (RSPO) since February 26th, 2007. We have a total of 8 oil palm concessions in North and South Sumatra, Belitung Island, West Kalimantan and West Papua. These concessions are either fully or partially planted land banks with several RSPO certified mills. ANJ also has other core agribusinesses such as sustainable sago harvesting and extraction, edamame cultivation, and a biogas power plant (renewable energy).

ANJ recognizes the No Deforestation, No Peat, and No Exploitation (NDPE) and HCSA commitments of our buyers and we have embedded these elements in our Sustainability Policy, published on October 31st, 2019. With our commitment to this Sustainability Policy, ANJ has decided to identify potential High Carbon Stock (HCS) area loss within all of ANJ's 8 oil palm concessions. This is a commitment to our purchasers, who also uphold the NDPE requirement. The identification of HCS area loss between January 1st, 2016 to December 31st, 2018 was undertaken to determine ANJ's HCS liability to be presented to the ANJ supply chain and stakeholders. The identified liability will be compensated in a form of a consolidated block in our West Papuan concession.

2 Identification of HCS Area Loss in ANJ's Concessions Between 1st January 2016 to 31st December 2018

The timeframe for this HCS Area loss identification is from 1st January 2016 until 31st December 2018 when ANJ stopped group-wide land development. Of the 8 oil palm concessions, only 4 have land development between January 2016 and December 2018. They are PT. Kayung Agro Lestari (KAL) in West Kalimantan, PT. Sahabat Mewah dan Makmur (SMM) in Belitung Island, PT. Putera Manunggal Perkasa (PMP) and PT. Permata Putera Mandiri (PPM) in West Papua.

Due to the retrospective nature of HCS Area Loss identification, the exercise undertaken is based on desktop analysis and the availability of satellite images. Satellite images of the 4 concessions for each year of interest; 2016 and 2018 were downloaded. Due to cloud cover constraints, there is variation in the dates the satellite image dates are acquired. The satellite imagery used from Landsat 8 was a Band 6, 5, 4 composite, and the satellite imagery used from Sentinel 2 was a Band 11, 8A, 2 composite. Subsequently, the satellite images were Histogram Equalized. The contrast and brightness of the satellite imagery was manipulated until the image was suitable for manual interpretation and feature extraction using ArcMap GIS software.

3 Declaration of HCS Area Loss in the ANJ Group

From the GIS analyses, the HCS area loss was been detected in PT. SMM, PT. PMP, and PT. PPM during the said period. PT. KAL, however, developed land that has no HCS attributes between January 2016 to December 2018. The results of the analyses are presented in the Table 3.1 showing that the accumulative HCS area loss in PT. SMM, PT. PMP, and PT. PPM is 2,530.55 ha.

Table 3.1: Summary of Potential HCS Area loss in ANJ Group (Between Jan 2016 to Dec 2018)

No	Estate	Total Developed GIS Area Extent (ha)	Total Land Development Between Jan 2016 - Dec 2018 (GIS Area - ha)	Total Liability for HCS area loss (GIS Area - ha)
1	PT. KAL	12,051.01	118.64	-
2	PT. SMM	14,249.71	3,411.15	17.81
3	PT. PMP	5,850.90	3,659.41	690.32
4	PT. PPM	4,160.30	2,876.18	1,822.42
Total Sum of Identified Potential HCS area loss				2,530.55

ANJ Group hereby declares that its HCS Liability between January 1st, 2016 and December 31st, 2018 is 2,530.55 ha. This will be the minimum hectareage that will be compensated for in this recovery plan. The recovery site identified by ANJ (as HCS offset) is in our West Papua Concession - PT. PMP, as shown in Map 4.1.

4 The Recovery Plan

In order to offset the declared HCS area lost, ANJ proposes a recovery plan that is fully consultative and begins with exploration of options in its West Papuan Concession to conserve an area that was originally designated for oil palm development. The challenge will be the social and legal constraints present in this province which requires extraordinary efforts to sustain.

The recovery plan has two phases. Phase 1 is the base-setting stage which involves the investigation of legal requirements, social conditions, acceptance of the additional conservation areas and compensation. These are pre-requisite actions that would lead to the establishment and subsequent management of the conservation site. Embedded within this recovery plan is the management plan which depends on the successful completion of actions of Phase 1. The management planning exercise will be referred to as Phase 2, and there will be overlap between the two phases. The key elements of Phase 1 and Phase 2 are presented below:

Phase 1: Setting the base (Timeframe: 0 – 12th month)

1. Determination of the legal status (*in terms of conservation*) of the recovery site.
2. Identifying the policies, commitment and conservation identity.
3. Preparing the culture of conservation for ANJ and local stakeholders.
4. Assigning leadership roles to manage the recovery site.
5. Procedures – developing the SOPs for interim site management.
6. Communicating intent to stakeholders – Beginning the consultative exercise.

Phase 2: Developing the Management Plan (Timeframe: 6th – 18th month)

1. Expert support: Field Assessment and Biological & Social Inventory of the site.
2. Setting conservation objectives for the Management Plan.
3. Interim management – field work.
4. Seeking stakeholder census for the objectives.

5. Quality management.
6. Technical standards.
7. Final stakeholder consultation for the Final 5-year Management Plan.
8. Proposed Interim Management and Monitoring.

The key elements identified in phases 1 and 2 define the objectives of the recovery plan.

4.1 Key Objectives of the Recovery Plan

As part of ANJ's effort to uphold our Sustainability Policy and our buyer's commitment to NDPE and HCSA, the recovery plan is designed to compensate HCS area loss that was identified within our group-wide oil palm concessions. The objectives of the Recovery Plan are as follow:

- To compensate for ANJ Group level clearance of HCS areas between the period of January 2016 to December 2018;
- To identify the location and extent of the recovery site;
- To ensure legal and administration (regional and provincial) recognition of the recovery site set aside;
- To engage with stakeholders on this proposed recovery plan – ensuring full and comprehensive consultation; and
- To establish the current and future management requirements of the recovery site.

4.2 An Introduction to the Recovery Site

The selection process of the recovery site was based on criteria such as ecosystems similarity, equivalent High Carbon Stock values to the areas that were lost. This also includes sites with intact ecosystems as well as having livelihood dependence. These criteria will increase the conservation benefits of areas adjacent to oil palm planting, and allow it to serve as a multiple use conservation site.

The recovery site identified by ANJ (as HCS offset) is in our West Papua Concession - PT. PMP, as shown in Map 4.1. This site was chosen because, it fits the criteria set and it is also part of the original PT. PMP concession originally earmarked for oil palm development. The site was approved for oil palm development through the RSPO NPP process in October 2014. ANJ reassessed the area and placed a self-moratorium on the development of this site. ANJ recognized the site's conservation potential and proposed that the non-developed PT. PMP area be designated for landscape conservation. This is a difficult decision as the conservation area is larger than the developed area (5,850.90 ha - 26%), and there is every reason that, legally, the remaining 16,362.59 ha (74%) of the concession can be reclaimed by the local government due to non-development. However, keeping an area of approximately 3,000 to 4,000 ha as a recovery area under the management of the company offers it a better chance of being conserved. The challenges of legally protecting this area is manageable for a company the size of ANJ. With this premise, the identified recovery site of 3,004 ha is approximately 473 ha more than ANJ's HCS Liability of 2,530.55 ha. This is shown in Map 4.1. The difference between the area to be compensated under liability and the area set aside is shown in Table 4.1.

Table 4.1: The difference between HCS area Loss Liability and Recovery Site

	ANJ Group (GIS Area - ha)
Total Liability for HCS area loss	2,530.55
Total Extent of Identified Recovery Site	3,003.99
Additional	+ 473.44

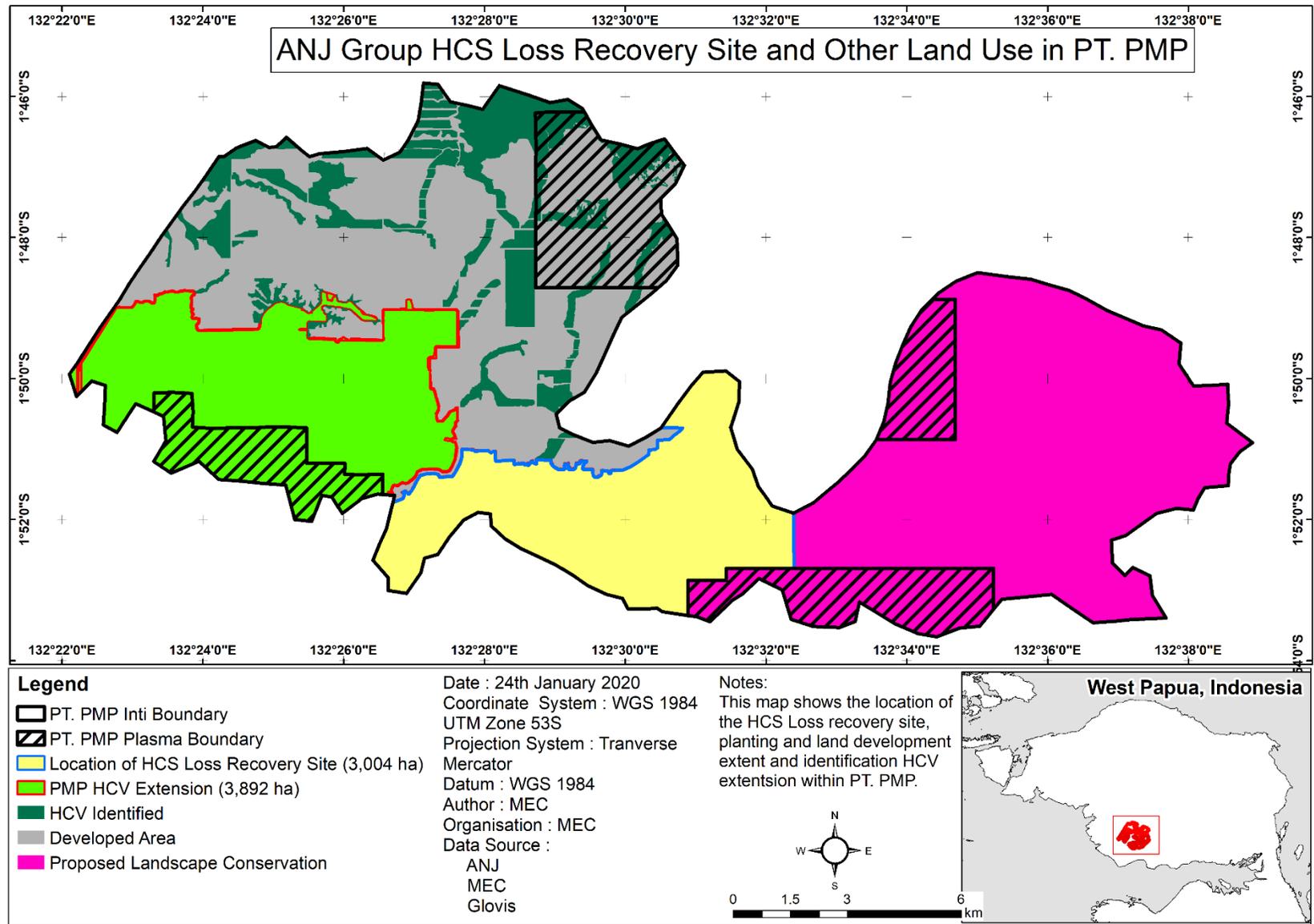
4.3 Recovery Site Description

The landscape level analysis determined that there are 6 basic ecological types within the recovery site. These are:

- i. Dry lowland forests on sedentary and old alluvial soils, some of which can be seasonally flooded,
- ii. Swamp Forest on the recent alluvial areas,
- iii. Meander Belts, a zone of varying widths on both banks of meandering rivers,
- iv. Oxbow lake formations within the meander belt zone,
- v. Open freshwater swamps, dominated by *Hanguana malayana* (Savannah), and
- vi. Early succession areas, where land has been cleared or is highly disturbed.

The recovery site has soils that are a red-yellow podsols in the north with some organic rich soils in the wetter areas in the south. To the south, the streams enter the wetlands along the Sarifin river, the eastern catchment of this are lakes now choked by floating vegetation giving the appearance from the air of an open, grass plain. The PT. PMP concession is between the Kais and Kamudan rivers. These are the major rivers that drain the mountains to the north. With rainfall averaging between 150 to 280 mm per month, the rivers are seldom dry. These rivers carry a high silt load and in the alluvial areas south of recovery site, they are raising their banks, creating swamp conditions behind the banks.

The legal status of the recovery site is *Areal Penggunaan Lain* (APL) - areas in which the forest can be legally cleared and developed, but surrounding the site and the PT. PMP concession are *Hutan Produksi* (HP - Production Forest) areas. There are also sites with some forest disturbance along major rivers, and the remaining areas having dry forest and swamp vegetation.



Map 4.1: Land use in PT. PMP and the location of the recovery site

5 Elements in the Recovery Plan

If an area set aside is a fragment of a once larger natural area, the ecological diversity in the fragmented area will decline to a lower equilibrium level. Active management effort can mitigate this decline by maintaining connectivity with adjacent *source areas* for enrichment of genetic material and species in the reduced populations and communities. However, the intact High Carbon Stock (HCS) areas would normally be self-sustaining and require no more than an annual inspection for integrity, and monitoring for the presence of indicator species at about 2- or 3-year intervals.

Compounding this natural decline will be the increased human stress created by improved access to the recovery site. The only hope to maintain the area is some form of active management that either protects the site with a human presence, or to invest in social protection by the resident local community.

The third factor is building conservation management capacity. The typical estate managers and operational staff need to be actively involved, support, and accept new responsibilities and ideas that conservation management of the recovery plan is a part of plantation management.

Conservation management is concerned with maintaining a desired stable ecological equilibrium despite an inevitable reduction of species richness from the reduced area, and an increase level of threat from NTFP collection, forest clearance, fire and land-take. The passive threat can be mitigated by securing connectivity to biological source areas, while the other active threat has to involve effective socialization and the winning of conservation management support from the local community. Some management activities that are important are shown in Table 5.1 below:

Table 5.1: Proposed key management activities for consideration

No.	Issues	Management Activity
1	Commitment to RSPO principles	Transparency and commitment and implementation of guidelines
2	Legality over the site	Establish legal rights over the conservation area
3	Develop objectives	Identify objective of conservation areas
4	Developing SOPs	Develop SOPs for all departments and activities
5	Communications	Active role in socialization with stakeholders' regular meetings
6	Field work and monitoring	Effective field management and monitoring and follow up at different stages of plantation development

The basic elements for developing the recovery plan in PT. PMP is presented in the flowchart 5.1 below. The flowchart summarizes the consecutive actions required for establishment and management of the conservation site.

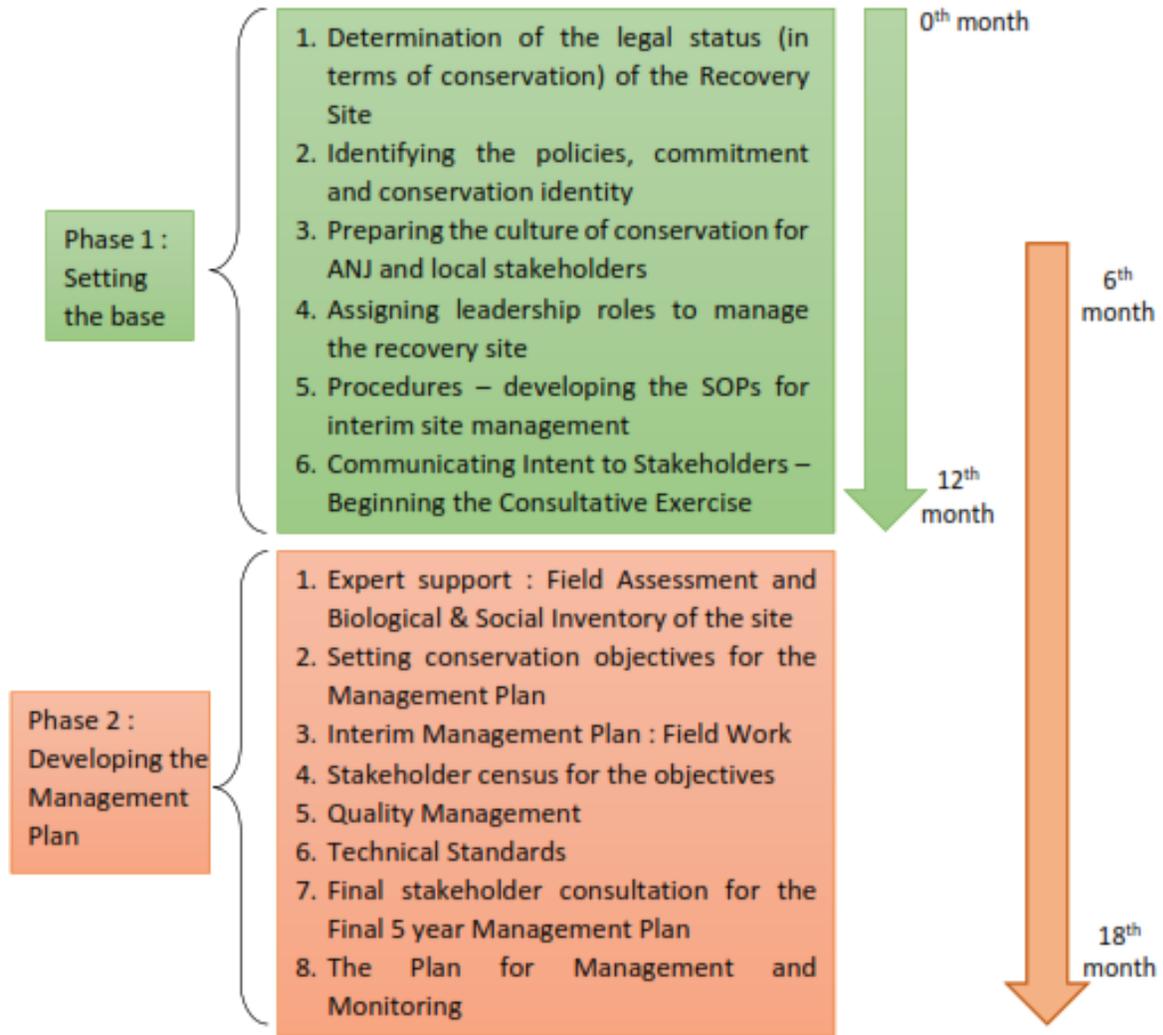


Chart 5.1: The key elements of Phase 1 and Phase 2*

**Details on implementation and time-frame are presented in Gantt Chart 7.1 in Section 7.*

5.1 Proposed Guidance for the Recovery Plan

5.1.1 Phase 1: Setting the Base (Timeframe: 0 – 12th month)

5.1.1.1 Determination of the legal status of the recovery site

The selected recovery site was originally designated as *Areal Penggunaan Lain* (APL), in which the forest can be cleared and developed for agriculture with the approval of the provincial government. An attempt to reclassify this as a conservation area, would require the support of the government to re-legalize the area for conservation and determine the period of lease.

5.1.1.2 Identifying the policies, commitment and conservation identity

The implementation will link conservation management with sustainable agriculture in the minds of the operational staff and local stakeholders. ANJ has to create the 'culture' among the staff of the company to express their identity as employees of a 'sustainable agricultural enterprise'. Externally, the company has to interact with local community stakeholders, regional administration and elected representatives to promote awareness and seek their support for the recovery plan. The regional governments need to be encouraged to endorse sustainable land use as the optimal way to use their finite natural resources.

5.1.1.3 Preparing the culture of conservation for ANJ and local stakeholders

Conservation management should be seen as a **transparent and rules-based**. To implement the recovery plan, ANJ would have to initiate the following:

- Gather relevant information on the resource that needs to be conserved (site inventory);
- Conduct discussions to shape policies, plans and actions;
- Identify procedures and actions for management to apply (SOPs); and
- Develop an iterative cycle (of monitoring and management) for self-improvement.

5.1.1.4 Assigning leadership roles to manage the recovery site

In assigning leadership, it is necessary to identify and develop a cadre from within the ANJ existing staff who would be willing to develop first their own management capacity as well as conservation management tools (SOPs) and skills. They would take a leadership role to develop a broad sustainable conservation management capacity throughout the company. The decision of *who finally* undertakes the task, and who drives the recovery plan implementation and *how* it is done, is the responsibility of ANJ.

5.1.1.5 Procedures – developing the SOPs for interim site management

For consistency all prescriptive actions will need to be recorded as a *Standard Operating Procedure* (SOP) dated to the time of adoption, and made accessible to the stakeholders concerned. A mechanism will also be needed to review the relevance and effectiveness of the SOPs and incorporate improvements as and when they become known. SOP development for this conservation management will probably require input from expert sources that may not be available within ANJ or locally in West Papua.

5.1.1.6 Communicating Intent to Stakeholders - Beginning the Consultative Exercise

As a part of transparency, all stakeholders have to be kept informed and have the opportunity to be heard and recorded. This includes both the better organized stakeholders and the less organized ones. ANJ will

take a leadership role in the consultative exercise to ensure that there is no conflict among the stakeholders. Inevitably, there will be conflict among stakeholders which will need to be addressed.

5.1.2 Phase 2: Developing the Management Plan (Timeframe: 6th – 18th month)

5.1.2.1 Expert support: Field Assessment and Biological & Social Inventory of the site

Expert knowledge is needed, especially if it can be obtained locally. Ideally, it would be possible to engage the local communities in co-management of the recovery site and sustaining the resources they host in their community areas, and enlist their support to develop SOPs of areas of co-management interest. There are however, limits to what local traditional knowledge can bring to SOPs for these areas, especially in the changed environment within a plantation. Support will be needed from scientific and education institutions to oversee monitoring results and assess management performance. The areas where this is needed includes:

- Biodiversity,
- Environmental management and the conservation of water, soils and nutrients, and
- Social Management.

5.1.2.2 Setting conservation objectives for the Management Plan

Conservation objectives should be seen as goals which conservation managers will work towards. This is where an active stakeholder community, willing to give support, will be a benefit to ANJ. The discussion has the moral authority to set, review, and refine the conservation objectives for the recovery site. This will give the field managers at ANJ an already established direction and a pathway endorsed and agreed to by a consensus of stakeholders. There are four general conservation objectives for the management plan of the recovery site, which can be summarized as:

- The **conservation of biodiversity**, which consists of more active management prescriptions especially if remediation or intervention is considered necessary. This will include dealing with local community on unsustainable NTFP take.
- **Sustaining the quality of physical resources** such as of soil, nutrients, and water, which need to be conserved for the benefit of future generations. Increasingly, the atmosphere is of concern for climate change controls.
- **Access and benefits to economic resources** such as the sustainable use of timber and NTFPs, which have social considerations. While management staff should be trained in to handle social resource management and conflict resolution with the local community, it is essential that local communities give prior agreement to these protocols.
- **Culture and landscape.** The local communities have developed their culture in situ and in response to the benefits their surroundings have provided. The familiar landscapes and resource opportunities will be changed by development, and with their passing so too will pass the assurance that a once familiar landscape provided. Culture and religion are sometimes embodied as sacred artifacts, but more usefully it can be viewed as the culture with which a community feels comfort and confidence with its surroundings. Managers will need to seek to minimize this loss to culture through design, access and operations of the recovery site in consultation with the local communities.

5.1.2.3 Interim Management: Field work

To translate the recovery site plan into reality, there has to be support from the field conservation management team. Interim management actions include consolidating SOPs for conservation areas identified; developing a clear set of the objectives of the recovery site; field working plans with maps for the recovery area and provision of appropriate training prior to working in the field.

The common threats to the recovery site plans are from inadequate supervision by the estate staff, failure to manage social requirements and poor monitoring of sites and extraction of natural resources. After Phase 1 of the recovery plan, subsequent threats to the site will come from local community taking of NTFP at unsustainable levels, excessive timber take by local communities, and land take for clearance and planting, due to new accessibility.

5.1.2.4 Seeking stakeholder census for the objectives

Perhaps the most difficult task for a conservation management is to secure a stakeholder consensus for management actions. The approach should follow a series of steps:

1. Developing objective tools which have been used to identify potential conservation attributes according to published stakeholder criteria;
2. Examining ecosystems according to their significance at the landscape level; and
3. Identifying conflict and potential resolution between conservation and controlled NTFP extraction.

This recovery plan will need to be presented to stakeholder for consultation, where reservations on the plan can be discussed, and if possible, a consensus for action can be obtained from the stakeholders' present. Assuming stakeholder endorsement is received, active conservation management could begin.

In section 5.1.1.6 above, the need for a communications system was mentioned to reach stakeholders and keep them informed. This is a two-way communication system which should also receive feedback so that the areas and extent of conflicting stakeholder interests can be mapped. This is a dynamic activity. ANJ will have the task of facilitating an agreement for actions, for issues where there is no consensus agreement for the objective. This will probably involve anything with conflicts that is related to economic gains and biodiversity loss – hunting and species protection.

5.1.2.5 Quality Management

The purpose of monitoring is to help ANJ make improvements. Monitoring is a part of a quality management system used to review performance. If a goal is set and a management prescription provided, we need to know whether that SOP is appropriate and/or the managers are doing a good job. To assess that, monitoring data has to be collected on indicators relevant to the recovery site management performance, and the results evaluated so that recommendations can be made to improve the SOPs, improve training and execution or reset the objectives. The conservation manager at ANJ will only need to monitor for the effectiveness of their management efforts.

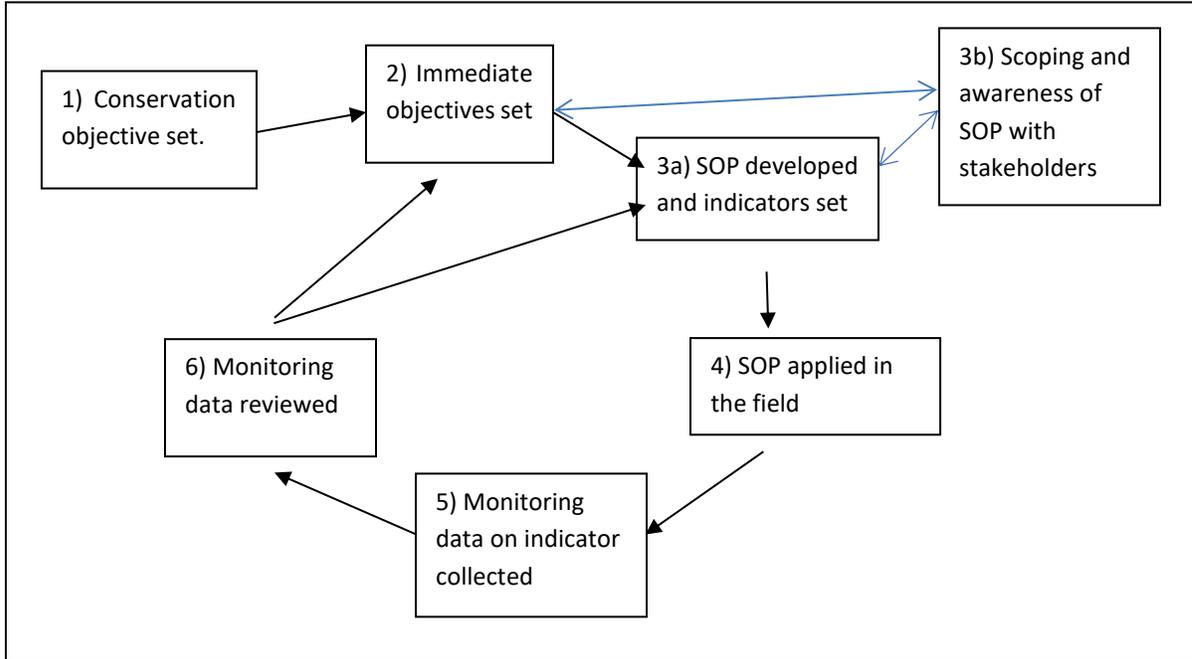


Figure 5.1: Quality management cycle for the Recovery Site – the role for monitoring.

Figure 5.1 above gives an outline for a simplified quality management cycle for the recovery site. In this case the long term ‘(1) conservation objective’ which management will try to support is sustaining biological diversity at the recovery site and thus contributing to the conservation of biodiversity at the local landscape level. Unfortunately, there are on-going threats from human activities that will need to be actively managed at an additional cost.

In order to support the conservation objective, there are a set of ‘(2) immediate objectives’ which may not be comprehensive at this time. These are given in general *terms* in Table 6.1, but in their final form they should be tangible and specific to the needs of the site. As an example, the general statement of *maintaining conservation site integrity* could be translated into addressing real threats by *minimizing impact from human activities*. Here, 2 sets of action are given:

- Promotion of conservation objective among the local stakeholders who may be the source of the threat from their NTFP collection, and
- Control the recovery site boundaries to prevent incursion for land take, or unsustainable timber take.

For most conservation managers, they would be quite capable of drafting the actions required as a series of deterministic steps documented in Figure 5.1 as ‘3a) SOP developed and indicators set’. This should be scoped ‘3b) with the stakeholders who could be affected’. Drawing up a list of useful indicators for performance monitoring may be outside the current experience of estate staff. Their natural inclination would be to monitor for execution through budgets and spending records, and/or records on deployment of working resources. But neither of these will actually produce information

on the effect on the recovery site itself, just the diligence of the staff concerned. It is the effect of an action that needs to be monitored, not just the execution of the action.

In this case, the actual field work needed '4) *SOP applied in the field*' applied, may include: meeting with communities for consultation, publishing information, reporting on incidences, etc. So, if the immediate task is to promote the idea of conservation and encourage the local community to bring that conservation idea into their everyday culture, it is useful to collect data on the extent of promotion which for example could include records of instances where they have allowed those ideas to enter into their co-management agreements. At step '5) *Monitoring data on indicator collected*', effort could be made to quantifying awareness raising through the coverage of socialization meetings to ensure all the relevant independent communities have been identified and systematically consulted than the nearest and most receptive, and records made at those meetings of responses by adults, schools, etc.

And for boundary integrity, the actions required 4) can be limited to field inspections, reports on incidences such as: felling, clearing, fire, incursions, etc. To review management performance, it will be useful to collect monitoring data 5) on: the location of incidences, frequency, extent of incursions, etc. This quantified data can be examined in '6) *Monitoring data reviewed*' to look at trends in the status of the recovery area and effectiveness in management.

If trends are positive, then it may be necessary to revise 2) *the immediate objective* as in their current form they could be becoming redundant. If the trends are negative, then it may be necessary to redraft more specific and realistic immediate objectives or if not possible, revise and test for more effective 3a) *SOPs*. A stand-alone monitoring plan is not considered relevant at this time, only the development of the SOPs for a framework for a quality management system approach, which contain:

- Guidelines for selecting indicators that can be quantified,
- SOPs for the collection and recording of independent data,
- Establishment of a review team with sufficient technical knowledge to evaluate the state of the area, and
- Guidelines for the review team to evaluate data and revise immediate goals and SOPs as required.

5.1.2.6 Technical standards

Monitoring for biodiversity, the environment and society will require setting technical indicators and standards that are beyond the area of comfort for most plantation staff. This requires specialist knowledge so external advice on what to do and how to do it, will need to be brought into the company. But since the recovery plan is a stakeholder driven initiative, stakeholder representatives with technical understanding of the recovery site and independent of the company itself could be consulted. The involvement of government stakeholders, such as agencies with the responsibilities for wildlife and the environment, should be consulted, with the involvement of other stakeholders from civil society.

A broad set of conservation objectives can be drawn up to reflect objectives set in laws, international treaties and obligations, company policy etc. Though the immediate objectives would also follow laws, they should also support stakeholder interests and where possible, be developed in consultation with

stakeholders whose interests may be affected. For social resource management, this consultation would lead to a co-management initiative. But for biodiversity component, there is seldom a biodiversity stakeholder available locally to support the companies' efforts. In such a case it is suggested the company bring in outside technical assistance as a short-term expedience over the development period, while also seeking to build capacity for biodiversity support at local institutions for the medium to long term. They then could act as the technical authority for stakeholder interests, as well as the source for transparent technical expertise for monitoring.

As a short-term expedience, the company would bring in 3rd party technical assistance to act in place of stakeholders to:

- set the initial targets and milestones for conservation management,
- undertake performance review,
- make recommendations for improvements for conservation management when appropriate as a part of operational review, and
- develop strategies to expand stakeholder input into setting management standards and benchmark targets.

The responsibilities for:

- management capacity building,
- training and
- developing management systems

would be the responsibility of employees – either career employees or those contracted for the task. But the role for setting standards and benchmark targets should always be seen to be the responsibility of independent stakeholders.

5.1.2.7 Final relevant stakeholder consultation for the Final 5-year Management Plan

The thrust of the whole recovery plan exercise, in particular, the management planning should be fully transparent and requires stakeholder acceptance. Stakeholder inclusiveness is the priority.

6 Proposed Interim Management and Monitoring

Table 6.1 below sets out a proposed interim management and monitoring actions. It is divided into 9 columns - A) to J), which contain:

A. Main Management Unit (MU) code and MU subunit.

The *management unit* (MU) is a geographical area, subjectively defined which has a common set management concerns.

B. Management unit type.

This gives a biophysical description of the area together with mention of social issues when they are relevant.

C. Immediate threats to the recovery site.

Ideally, the site would be self-sustaining and able to maintain stability itself. But in reality, fragmentation of the original ecosystem in the design, on-going disturbance from NTFP collection by local stakeholders, or future illegal land take will impose a stress on the recovery site, etc. This is the issue which will incur management attention, effort and expense. It is useful to separate potential threats into:

- i. The *stress* that is being imposed on the site – a human or natural activity that is happening within or around the recovery area,
- ii. The *source* of this stress – sometimes people but also natural events such as climate, geomorphology, disease, etc., and
- iii. *Significance* because not all *stress* exceeded the tolerance capacity of the site to self-stabilize.

D. Stakeholders and interests.

People and ideas drive conservation, and this column identifies ideas to discuss and which stakeholder values those ideas. In the case of biodiversity, there may be no actual people who are active stakeholders, but the state acts in that place, as a holder of related policies or as a signatory of multilateral agreements. Here in column 'D' we look at two sets of stakeholders:

- i. Those who have interests or responsibility for conserving a resource, and
- ii. Those whose actions are causing the loss in resource conservation value.

These are sometimes different stakeholders, but they can also be the same people.

E. Management objective, states what is intended in the management unit area. This is a general 'wish' or statement of intent that should be seen as a long-term target. It serves as the conservation objective which the operations managers would work towards, and where known, mentions some of the possible intermediary milestones. At this stage, the objectives are not precise or finalized, and should respond to the expectation of stakeholders as part of the review process – see column 'I'). Sections 'A' to 'E' are presented in the main report while sections 'F' to 'I' are also presented in this appendix. The extra sections deal with enabling and operating activities and the follow up monitoring and review activities.

F. Enabling activities.

This is perhaps the core of the management plan. It is the capacity building activities that build the institutional capacity to manage the recovery site within the ANJ field management team. It leads to:

- i. Operational staff with the capability and confidence to address both the physical requirements of the recovery area,
- ii. The SOPs needed for operational management, as well as the mechanisms to develop and improve those SOPs,
- iii. The engagement with stakeholders who are being encouraged to understand their involvement with the recovery site being managed, and their responsibilities that they share with operational managers, and
- iv. The cultivation of a pool of technical experts who are locally available to assist with quality management review for the conditions of the recovery site and the management of local community stakeholder.

G. Operating activities.

General prescriptive measures for the field operational staff, and their supervisors and technical support. Unfortunately, these can only be:

- i. General deterministic prescriptions for the development period and early operations, at this time, which focus on the development stages, and
- ii. The establishment of protocols for quality management systems for the post-development phases. This is the mechanism to review the effectiveness of the SOPs, training and implementation.

H. Indicators and activities for monitoring.

Setting aside the recovery area, undertaking operational management and dealing with stakeholders incur costs. The project managers have to be sure that these costs are justified and that they contribute towards meeting the stated objectives for the recovery plan, and requirements of the stakeholders. Some form of quantifiable measure is needed for to set management direction and benchmarks, because if an activity cannot be measured, it is not possible to assess performance objectively, improve SOPs, and justify operating expense.

I. Review.

The project operations staff can undertake an internal review of budget spending and implementation of work, but whether this work is effective and actually contributes towards the objectives of the recovery plan should be reviewed by an external third party with the technical capacity to assist conservation managers. Ideally, the capacity to provide technical assistance, and expert review should be developed locally and hosted in a body where this essential capacity for conservation support can be given institutional memory. Ideally this is the task of 3rd parties such as the RSPO or other concerned parties, but considering their current weak capacity and reliance on contracted expert support, it may require a direct approach to tertiary level academic institutions in West Papua, which may be willing to consider developing this capacity.

Table 6.1: Proposed Interim Management and Monitoring Actions for the Recovery Site

A) MU Main Code	MU Subunit Code	B) Management Unit Type	C) Area of Threats	D) Stakeholders & Interests	E) Management Objectives	F) Enabling Activities	G) Operating Activities	H) Indicators And Activities For Monitoring	I) Review
1	1 A	Forest buffer for river berm and back flood areas	1.1) Encroachment into meander belt from estate and informal development from river.	1) Stakeholder government, social groups. 2) Biodiversity & the environment.	1) Secure and accurate identification of boundary. 2) Efficient and trustworthy work by staff.	1) Site plans, GPS survey and ground marking & development of SOP. 2) Training for monitoring of survey marking and encroachment by estate staff.	1) Systematic survey, marking boundaries, checking work progress for sections of the site. 2) Ensure the estate staff training is current.	1) Inspection & maintenance of boundary markers.	1) Review quality of survey and inspection work.
			1.2) Soil and nutrient loss from adjacent planted areas.	1) Stakeholder downstream river and water users 2) Water quality & safety.	1) Environmental sustainability.	1) Identify all streams and wetlands entering or connected to riverine buffer. 2) Ensure streams and swamps marked on recovery site for conservation and staff informed. 3) Mark boundaries.	Same as F.	1) Inspection of boundary. 2) Water inspection for sediments and sampling for eutrophication.	1) Review trends from water sampling and revise SOP as necessary. 2) Review quality of survey.
			1.3) Unsustainable NTFP take and timber extraction.	1)Stakeholders: Local communities and neighboring land developers. 2) Social & commercial interests.	1) Conservation of NTFP resources. 2) Landscape approach to conservation planning and management.	1) Development of protocols for communications with stakeholders. 2) Identification of traditional and new beneficiaries of NTFP. 3) Socialization with beneficiaries on objectives for sustainable NTFP use. 4) Co-management options developed and targets for sustainability set.	1) Provide material support to stakeholders for co-management. 2) Collect data on NTFP take. 3) Periodic monitoring of biodiversity indicators.	1) Selected biodiversity indicators – vegetation cover, birds, etc. 2) Monitor data of NTFP collection.	1) Review with co-managers NTFP data and physical state of forest against objectives for sustainability. 2) Training for monitoring of survey marking and forest clearing by estate staff.
			1.4) Access to river and use of riverine NTFP resources.	1) Traditional local community and more recent arrivals. 2) Accessibility & social resources.	1) Equitable and sustainable use of NTFP. 2) Effective communications with and among stakeholders. 3) Mechanism for co-management.	1) Examine options for co-management. 2) Develop mechanisms for communications. 3) Socialize to increase awareness of co-management objectives. 4) Establish mechanisms for inter-stakeholder grievance mechanisms.	1) Strengthen communications and trust between all stakeholder interests. 2) Collect data on NTFP collection, its uses and information of its collectors.	1) Monitor for sustainable use and returns on effort from NTFP collection.	1) Review viability of NTFP collection.
			1.5) Environmental quality of riverine areas.	1) Internal Stakeholders. 2) Water quality.	1) Legal compliance for water quality in streams. 2) Minimize loss of nutrients from fields. 3) Control damage to vegetation and soil from pest animals.	1) Baseline water quality at sample stations. 2) Establish protocols for monitoring. 3) Promoting awareness of SOP to all stakeholders including estate staff.	1) Maintain boundaries of recovery area and riparian areas. 2) Reinforce SOP to minimize soil and chemical run-off entering the site. 3) Preparedness for fire suppression and culling pests – pig, deer, etc. through IPM in the adjacent planted area. 4) Monitor indicators.	1) Routine visual inspection for silt and chemicals. 2) Program for water quality sampling.	1) Internal review of indicators for SOP.
2	2A	Main biodiversity corridor connectivity to protected forests (<i>Potential</i>)	2.1) Maintain integrity of forest and ecological processes in biological corridor.	1) Relevant stakeholder, the government, and social groups. 2) Biodiversity & the environment sustained.	1) Maintain forest integrity and populations within the recovery site.	1) Promote objective with stakeholders. 2) Boundary controls.	1) Systematic survey, marking boundaries, checking work progress for each block. 2) Maintain boundaries. 3) Program for monitoring biodiversity indicators endorsed by interested stakeholders	1) Inspection & maintenance of boundary markers. 2) Selected biodiversity indicators – vegetation cover, birds, etc. 3) Monitoring of indicators endorsed by local technical experts. 4) Effective communications and incidence of break down.	1) Review quality of survey. 2) Review of data by experts. 3) Review of indicators by stakeholder interest bodies and recommendations for co-management.

A) MU Main Code	MU Subunit Code	B) Management Unit Type	C) Area of Threats	D) Stakeholders & Interests	E) Management Objectives	F) Enabling Activities	G) Operating Activities	H) Indicators And Activities For Monitoring	I) Review
			2.2) Seek endorsement from regional land use planners and any future developer of adjacent HP land.	1) Potential neighboring developers, Land & resource authorities. 1) 2) Protection of the recovery site intactness.	1) Maintain ecological connectivity for populations and genetic movement. 2) Minimize threat from NTFP collection and estate activities.	1) Seek endorsement from land use planners for ANJ system to connect with protected areas. 2) Establish mechanism for communications with government agencies.	1) Monitor proposals to develop adjacent HP areas and communicate with developers. 2) Promote connectivity to adjacent permanent HP forest.	1) Land use planning documents.	1) Communications with land use planning authorities. 2) Communications with potential future developers of neighboring lands.
	2B	Main biodiversity corridor, ecotone with dry forest & wetlands	2.3) Effective movement for populations and genetic material across ecotone.	1) Biodiversity stakeholders. 2) Local communities. 3) Biodiversity & the environment 2) Sustained.	1) Maintain ecological functions. 2) Minimize impact on biodiversity from NTFP collection, and estate activities.	1) Communicate objectives to stakeholders. 2) Develop SOP for co-management.	1) Field work monitor indicators for biodiversity.	1) Program to monitor for biodiversity indicators.	1) Review of indicators by stakeholder interest bodies and recommendations for co-management.
3	3A	Surrounding settlements: socialization, communications & co-management	3.1) Stakeholder's awareness of benefits and responsibilities, and confidence with project operators. 3.2) Sustainable use of NTFP. 3.3) Preservation and protection of religious and cultural sites.	1) Local Communities and Government and relevant stakeholders. 2) FPIC process & NTFP for villages involved. 1) Customary rights and privileges of community at surrounding villages perpetuated. 2) Preservation of customary belief and values, religious and cultural sites within the concessions.	1) Continuation of on-going FPIC process. 2) Develop communications and trust. 3) Develop mechanism for conflict resolution. 4) Ensure equitable access and sustainable benefits from NTFP. 1) Ensure equitable and sustainable use of NTFP in the recovery site and awareness, as well as, respect for other stakeholders. 2) Socialization on the importance maintaining religious and cultural sites.	1) Ensure stakeholders understand implications from release of land for conservation. 2) Document understanding on privileges over NTFP in the recovery site. 3) Grievance mechanisms established between ANJ and local community stakeholders. 1) Review of NTFP take and conservation activities which have a potential negative effect on the recovery site. 2) Set common objectives among stakeholders for sustainable use in which ANJ act as 3 rd party facilitators. 3) Inter-stakeholder grievance mechanisms established.	1) If NTFP used, develop co-management strategies and, if needed, identify beneficiaries. 2) Regular meetings to maintain effective communications and develop mechanisms for conflict resolution. 1) Develop mechanisms for regulating for equitable access to NTFP. 2) Develop mechanism for record keeping. 3) Select indicators for monitoring.	1) Effective communications and incidence of break down. 1) NTFP records. 2) General monitoring of biodiversity indicators that would be negatively affected by NTFP take.	1) Review incidences of communication success and failure, and seek options to address failures. 1) Review of indicators by stakeholder interest bodies and recommendations for the management plan.
			3.4) Interest in land and NTFP by community at surrounding villages, and other communities.	1) Local communities. 2) Illegal Land take, NTFP collection and biodiversity impact.	1) Ensure consensual approach to sustainable and equitable use to minimize threat to the integrity of the recovery site.	1) Establish communications and mechanism for conflict resolution. 2) Review options for equitable use by other communities.	1) Maintain communications and strengthening activities to build trust.	1) Records of communications and incidences of conflicts.	1) Review of indicators by social stakeholder bodies and recommendations for biodiversity management for co-management parties.

7 End Note

The focus of this recovery plan is to set the base in terms of legality and identify data requirements for the management plan. Inclusivity through the process of several consultation would strengthen our resolve to manage the recovery site effectively. This recovery plan aims to consolidate data, local social requirements, multiple stakeholder consensus, and most importantly, demonstrate ANJ's commitment to conserving the set aside area sustainably, subject to support from the provincial and local administration. Addressing all elements listed out in this recovery plan will allow ANJ to produce an effective recovery management plan, realizing all the conservation objectives identified in this set aside areas. The set aside would eventually go beyond the narrow requirements of High Carbon Stock loss offset and take on a more comprehensive conservation presence, ensuring that the ecosystems within the 3,004 ha and the adjacent HCV extension are maintained intact providing ecosystem services and become exemplary.

This planning exercise is not static and this version will undergo upgrades based on an adaptive management approach. The extent of conservation will not be reduced but rather the management approach will be improved consistently.

It should be noted that despite the economic constraints, ANJ's internal policy in balancing development and conservation is based on a 2:1 ratio, which translates into conserving a maximum of 50 % of the planted area when circumstances require it. Where the recovery site is concerned, PT. PMP has a development extent of 5,851 ha. It has an additional HCV extension of 3,892 ha and the newly proposed HCS recovery site of 3,004 ha. The HCV set aside within the planting matrix in PT. PMP is approximately 2,132 ha.

The total conservation set aside for PT. PMP, including the recovery area will be 9,028 ha. This is a significant conservation effort by the ANJ group entailing substantial cost. In order to effectively manage this conservation area, ANJ will need to seek funding from willing parties and climate credit mechanisms to ensure the effort is sustained.

Management and monitoring planning for this recovery site is on a 5-year cycle. Plans will be subsequently reviewed and revised at the end of each management period. The total management period in this case will coincide with the validity of the PT. PMP concession HGU.