

Assessment Report
Industrial Forest Plantation
High Conservation Value
Public Summary

PT. Riau Indo Agropalma

9.570 Ha

Indragiri Hilir Regency, Riau Province

September – December 2013

This Public Summary is prepared within the framework of APP's Forest Conservation Policy and the information contained is the result of a full HCV assessment

Prepared by : *Imam Sulistyono (Lead Assessor)*



EKOLOGIKA

PT. Ekologika Consultants

Plaza Bisnis Kemang Bld. 1, Fl. 1
Jl. Kemang Raya No. 2, Kemang
Jakarta 12730
+62-21-7183419

www.ekologika.co.id

Contents

1	INTRODUCTION.....	3
1.1	Time frame of HCV Assessment	3
1.2	Reference	3
1.3	Project Development Status	3
1.4	Area Description	3
2	METHODS	5
2.1	Primary Data Collection	5
2.2	Schedule.....	6
4	RESULT	13
4.1.	HCV Result	13
4.1	Public Consultation Result.....	14
5.	RECOMMENDATION	xxiv
6.	BIBLIOGRAPHY.....	xxviii

1 INTRODUCTION

1.1 Time frame of HCV Assessment

The assessment was conducted in September 2013 – September 2014

1.2 Reference

No	Reference
1	National HCV Toolkit
2	<i>The High Conservation Value Forest Toolkit, Edition 1, December 2003</i>

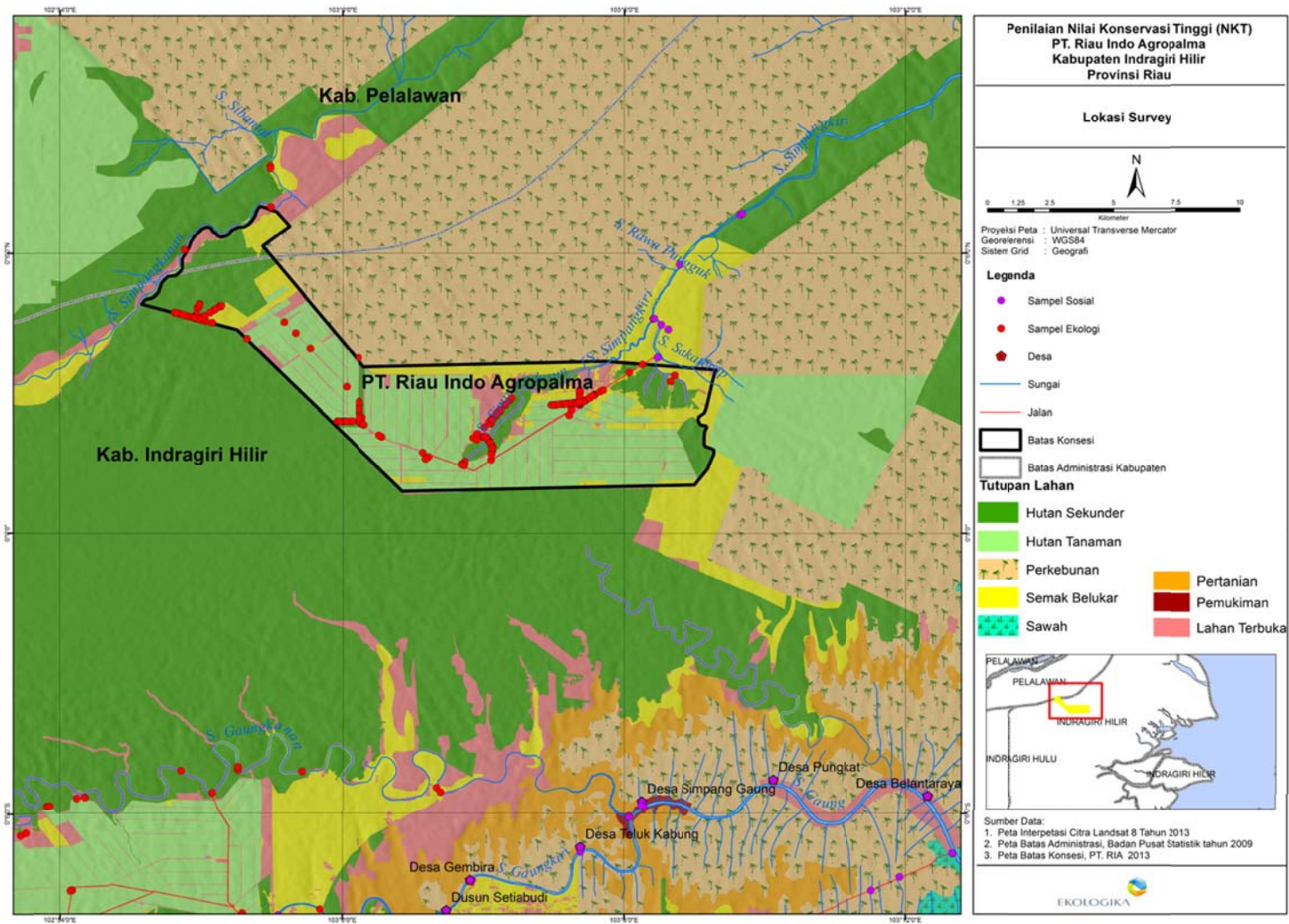
1.3 Project Development Status

PT. Riau Indo Agropalma is one of APP supplier which has been operating since 2009, according to the FCP there will be no natural forest clearance by PT. Riau Indo Agropalma after January 31, 2013.

Contact Person	
Primary Contact Person	Neville J. Kemp
Business Address	Plaza Bisnis Kemang Bld. 1, Fl. 1 Jl. Kemang Raya No. 2, Kemang Jakarta 12730
Company Name	PT. Ekologika Consultants
Office Telephone	+62-21-7183419
Fax	+62-21-7183419
e-mail	nkemp@ekologika.co.id
Web Site	www.ekologika.co.id

1.4 AreaDescription

The Assessment Area is Industrial Forest Plantation of PT. Riau Indo Agropalma located in Pelangiran Sub-district Indragiri Hilir Regency Riau Province. Based on the Decree of the Minister of Forestry No SK. 61/Menhut-II/2006 dated 22 March 2006, RIA concession is 9.570 Ha in the group of forest of Gaung River, Riau Province.



Map of HCV Assessment location of PT. RIA

2 METHODS

2.1 Primary Data Collection

With the limited social data, socio-economic studies was also conducted on selected villlage to represent the concession. Personal information and HCV related or participatory research experiences with communities, of each team members are recorded in Appendix 2.

The primary data used are available in separate reportson:

- The vegetation within RIA concession
- Mammals within RIA concession
- Birds within RIA concession
- Reptiles and Amphibians within RIA concession
- Socio-economic and cultural condition within and around RIA concession

Management and monitoring recommendations suggested in this report served as the basis of management and monitoring recommendations used in this assessment.

Field topography verification. To assess the accuracy of topographic conditions described in secondary DEM, general field observations are conducted throughout whole RIA concessions. RIA concessions are generally undulating to sloping with dominantly lowland forest ecosystems.

Vegetation Survey. HCV assessment of vegetation in RIA concession was conducted by using descriptive method; with one km line-transect in areas representing each ecosystem types.

Amphibians and Reptiles. Herpetofauna diversity research was conducted by using active techniques, including Visual Encounter Survey (VES) modified with transect, Surveys at breeding sites and Road Cruising (Hayer et al., 1994; Kusrini, 2009). Morning observations were carried out from 06.00 to 09.00, while afternoon and evening observations were from 15.30 from 21.00. One km line-transects was set up in several habitat types.

Birds. Abundance survey of birdtypes was conducted by using cruising methods with Sorensen-Dice index to analyse the data, to identify the similarity of birds' flocks in each habitat type. Elaboration of the method, the survey area and the results are given in the separated avifaunareport.

Mammals. This research appliedline-transect and cruising technique. Mammals are observed by slowly cruising along 1 km of transect line in each forest types and recording all of the spotted mammals species. The observations were carried out in the morning (05:30 – 09:00), afternoon (15:00 – 18:00) and evening (19:00 – 22:00).

Social and cultural. The social and cultural scope of High Conservation Value (HCV) assessments falls to the criteria HCV 5 (basic needs of local communities) and HCV 6 (cultural identityand local community's bond with the area). Landscape methods was employed in the assessment, thus it carried in villages within and around the concession area.

Sample determination is based on the following criteria:

1. The village is within the concession area.
2. The village is located around the area in a very close proximity to the concession and potentially, directly or indirectly, affected by the company's operations.
3. The village is located around the concession area based on watershed (DAS).

Selected villages around the area was to examine the questions of whether natural resources from the concession and the forest areas are crucial to the fulfillment of basic needs of local communities, irreplaceable, do the community make use of natural resources in the concession area sustainably and does loss/damage of some parts or all of the natural resources due to company's operations affect the community livelihood?

Data Mining Method uses data collected from Focus Group Discussions (FGD) and semi-structured Interviews. To ensure participation in the process of data mining, representatives and community groups (village authority, religious figures, youth, and marginal group) were involved in the FGD. The purpose is collecting information on resources of each area (settlement, hamlet, and village) garnered from local community's knowledge, which is resourceful for HCV 4 assessment and socio-economic HCV 5, and HCV 6.

Location and delineation of HCV 5 and HCV 6 are identified by observation, while GPS coordinates are input to set High Conservation Value Area (HCVA). The locations are then accurately presented in spatial maps.

2.2 Schedule

No	Activity	Dates
1	Pre Assessment	12-16 May 2013
2	Reporting	April – August 2013
3	Multistakeholders Consultation	17 October 2013
4	Assessment	October – November 2013
5	Reporting	November – February 2014
6	Public Consultation	5 – 6 June 2014
7	Peer Review	September 2014
8	Final Report	December 2014

3. ASSESSMENT TEAM

ADVISOR

Neville Kemp MSc (Technical Advisor of Ecology)

- Profession : Director of PT Ekologika Consultants, Natural Resource Management Consultant
- Expertise : Biodiversity survey, Community Development, Forest Ecology and Management. He is an ecologist, forestry expert and ornithologist
- Field Experience : Worked in conservation areas and community development at Indonesia and Vietnam for more than 17 years and known as an expert in the field of Biodiversity Survey, especially identifying avifauna species in Indonesia. Currently he is the Director of PT EKologika Consultants – a consulting company that provides Natural Resource Management Service and survey services in High Conservation Value assessment for companies in timber, palm oil plantation and Industrial Forest sector, including companies certified with FSC standard. He is also a member of High Conservation Value Network Indonesia.

Ninil Riyati Miftahul Jannah (Technical Advisor of Socio-economic and Cultural)

- Profession : Community Development Specialist
- Expertise : More than 10 years of working experience in various fields, including community development, conservation, environmental education and informal education for adults. Recently, her expertise is shifted to disaster risk reduction field and organizing communities to preparedness against disaster using participatory approach.
- Field Experience : Since earthquake disaster hit Yogya in May 27th 2006, Ninil had helped many communities to rebuild and strengthen their source of income through participatory approach. Founded “Perkumpulan Lingkar” in 2008 and continuously working with communities to implement programs related to natural resources and disaster risk reduction.

TIM EKOLOGI

ECOLOGY TEAM

Imam Sulistyو (Team Leader, and Sociocultural)

- Profession : Social Technical Lead, PT. Ekologika Consultants
- Expertise : Biodiversity Survey, Community development, Stakeholders Engagement.

Field Experience : Imam started his professional career in community development field and natural resource management since 2001. More than 10 years of experience conducting biology surveys, social studies and community engagement and development. Possess good knowledge in facilitating and building relationship with communities, government, and other stakeholders.

Berry Lira Rafiu, S.Hut (Mammals)

Profession : Biodiversity Specialist
Expertise : Biodiversity Survey, Ecology and Mammals
Field Experience : After graduated from undergraduate program in Forest Resource Conservation and Ecotourism, surveyor had involved in biodiversities field-related activities. Several scientific studies had done, some of them are Population Study on Sambar Deer at South Bukit Barisan National Park at 2009, Chryoptera and Rodentia Varieties study in East Kalimantan at 2010. For the last 2 years, often involved in HCV survey in PT. RAPP Semenanjung Kampar, HCV survey in palm oil plantation in Central Kalimantan, West Kalimantan, East Kalimantan, and Sumatra.

Yoga Travolindra (Mammals)

Profession : Field Surveyor
Expertise : Biodiversity Survey, Stakeholder and Community Engagement, Forest Fire Management.
Field Experience : Since 2004, Yoga had involved with South Sumatra Forest Fire Management Project (SSFFMP) positioned as member of Forest Fire Division Team and Village Facilitator and training communities on dealing forest fire disaster. Yoga also often involved in participatory village mapping activities and giving Environmental Education related to Forest Fire. Yoga joined with Merang REDD Pilot Project (MRPP) as a member of Measurement and Monitoring Forest Carbon Team. Yoga also trained in monitoring Sumatran Tiger using camera trap and involved as member of Field Team in Sumatran Elephant Population Survey Team with WCS

Fahrudin Surahmat, S.P. (Avifauna)

Profession : Avifauna Researcher
Expertise : Biodiversity survey, especially birds taxa
Field Experience : Actively participated in biodiversity research in various National Park and Wildlife Preserve since college, such as Mount Halimun-Salak National Park, Mount Gede Pangrango National Park, Ujung Kulon National Park, Cikepuh Wildlife Reserve, Muara Angke Wildlife Reserve. Actively involved in monitoring predatory bird migration, avifauna survey for Cikalang

Christmas (*Fregata andrews*) in Jakarta bay, environmental monitoring and environmental related to Eagle reintroduction and birds marking. He is still an active volunteer of Suaka Elang, Harimau Kita, and Burung Nusantara. Researcher is also part of Indonesia Bird Banding Scheme; group of avifauna researcher affiliated with LIPI which is actively marking bird.

Zukfikri, S.Hut (Avifauna)

Profession : Avifauna researcher
Expertise : Biodiversity Survey, especially on avifauna taxon
Field Experience : Involved in HCV survey since 2012 in biodiversity especially avifauna. Since college, he also involved in several survey activities, such as survey for data baseline and biodiversity needs, since 2008.

Burhan Tjaturadi, MSc (Herpet-Ecology Team)

Profession : Natural Resource Management Consultant
Expertise : Biodiversity Survey, especially herpetofauna taxon (Reptilian and Amphibian).
Field Experience : Worked in conservation field in Papua for more than 11 years and known as expert in biodiversity survey, especially herpetofauna identification in Indonesia. Other than that, he was also active in Turtle Breeding studies in a NGO located at Yogyakarta. Currently he served as Biodiversity Officer in PT. Ekologika Consultants – a consultant company that provides Natural Resource Management Service and surveying services which provides High Conservation Value measurement for timber company, palm oil plantation and Industrial Forest, including several companies which had FSC certification standard.

Purwo Setio Indarto, S.Si (Herpetofauna/Reptilian and Amphibian)

Profession : Herpetologi Specialist
Expertise : Survey Ekologi Herpetofauna (Amfibi dan Reptil).
Herpetofauna Ecology Survey (Amphibian and Reptilian)
Field Experience : Pernah bekerja di Yayasan Taman Nasional Teso Nilo Riau, sebagai Koordinator Flaying Camp penanggulangan konflik gajah liar tahun 2008-2010, 6 tahun bekerja di Pusat Penyelamatan Satwa Jogja dan pernah menjadi Kepala Unit Animal Keeper dan pengelolaan reptil tahun 2003 - 2008. Worked in Teso Nilo National Park Institue at Riau, as Flaying Camp coordinator for Wild Elephant Conflict Prevention 2008-2010, six years served in Jogja Center of Wildlife Rescue and also served as Head of Animal Keeper Unit and reptilian maintenance since 2003-2008.

FX Sugiyo Pranoto, S.Si (Herpetofauna/Reptilian and Amphibian)

Profession : Herpetofauna (Amphibian and Reptilian) specialist
Expertise : Herpetofauna variety Survey
Field Experience : Since college had experience in Reptile Conservation field; had worked in herpetofauna field and monitoring reptilian trade with Yayasan SANCA INDONESIA; worked with Animal Taxonomy Lab, Faculty of Biology, Universitas Gadjah Mada in Herpetofauna variety survey in Merapi slope, Gumuk Pasir ecosystem.

Fernando Togar Manurung, MP. (Forestry and Plant Ecology)

Profession : Forest Ecology Lecturer, Faculty of Forestry, Universitas Tanjung Pura.
Expertise : Biodiversity survey, Forest Ecology / Silvikultur Tropika
Field Experience : Worked in conservation field in West Kalimantan for 23 years, especially in Forest Ecology field. Known as Tropical Forest Flora and Peat Expert. Had done several researches and studies in forest flora and silvikultur at several HPH and forest industries. Also known as AMDAL designer on Ecology Assessor field for Ecolabelling and Forestry Technical Expert Instructor certification.

Agusti Randi S.Hut (Plant Ecology Team)

Profession : Konsultan Flora
Expertise : Biodiversity Survey, especially Flora.
Field Experience : Since 2010 had done various biodiversity research with several institutes such as FFI and WWF at several conservation and private companies in West Kalimantan for HCV purpose and others.

SOCIAL TEAM

Bambang Eko Budi Yanto (Socioeconomic and Culture)

Profession : Community Organizer & Community Development Specialist
Expertise : Facilitator, Social Research, Monitoring and Evaluation CO & CD programs in NGO, Donor Institute, Community Organizing companies; Capacity Building.
Field Experience : Had been active for 10 years in Environmental Education NGO, building and maintaining environmental education program for school age 8 - 20, environmental education training for teachers and young professional. Since 1997 had establishing & strengthening organization of local community of coastal, forest, low income urban and gender. Several conducted activities: Facilitator for Risk Mapping in Gunung Gede-Pangrango National Park, 1999; Socio-economic Studies of Coastal Communities of Main Hatching Beaches of Green Sea Turtlein Pangumbahan, Sukabumi – working with the Ministry of Environment, 1992; Data Analyst & Facilitator for Developing Community Information System at

Papua, with LPPMA - Jayapura, 1999; Organizing Coastal Community of Pulo Panjang-Cilegon-Banten, 1999-2000; Welfare Inventory and Designing Welfare Indicator for Fisherman. Department of Maritime Affairs and Fisheries; Organizing Communities in 4 villages, Leupung, Aceh Besar-NAD. Yayasan PUTER. Rehabilitation Stage & Post Disaster Reconstruction (Earthquake and Tsunami), Aceh, 2005; Lhok Studies as Fishery Sector Recovery Program Location - KEHATI Program - JSDF at NAD, 2006; District Manager at Pidie, Catch Fisheries Sector Recovery Program in NAD, Yayasan KEHATI, JSDF & World Bank, 2006-2008; External Program Evaluator for Yayasan PUTER Indonesia, Increasing Active Role of Community and Scavenger in Plastic-based Waste Sustainable Management Through Central Recycle Model Development. 2012; Monitoring Forest Moratorium Ground Truthing, from REDD+Taskforce (SATGAS) Head of Presidential Taskforce Unit of Development Monitoring and Controlling (UKP4). 2012; Land Clearing (Ground Truthing) Monitoring WRI-PUTER Indonesia in Merauke & Jayapura regencies. 2013; Capacity Building for Community Mobilisation, Mitra Sum2-USAID - PENABULU, at Semarang and Purwokerto, since 2012-2013.

Fadhil Nandhila (Socio-Economic and Culture)

- Profession : Community Organizer, Community Development, Campaigner Specialist
- Expertise : Photography; Community Organizer; Community Development; Campaigner; Facilitator for Environmental Education; Waste Management
- Field Experience :
 - 2004, NGO Jaringan Pendidikan Pemilih Untuk Rakyat (JPPR), work description; Independent Volunteer for Election;
 - 2006, Gramedia Majalah, Surveyor;
 - 2006, Voice Of Human Right, Survey & Interviews on basic knowledge on human rights towards society in Jakarta.
 - 2008, Environmental Education Facilitator;
 - 2008; Program Coordinator for Community Assistance Program;
 - 2010, Project Manager;
 - 2012, Waste Recycle Consultant.

Achmad Fadilah (Socio-Economy and Culture)

- Profession : Community Organizer, Community Development, Campaigner Specialist
- Expertise : Photography; Community Organizer; Community Development; Campaigner; Facilitator Environmental Education; Waste Management
- Field Experience : 2004, NGO Jaringan Pendidikan Pemilih Untuk Rakyat

(JPPR), work description; Independent Volunteer for Election; 2006, Gramedia Majalah, Surveyor; 2006, Voice Of Human Right, Survey & Interviews on basic knowledge on human rights towards society in Jakarta. 2008, Environmental Education Facilitator; 2008; Program Coordinator for Community Accompaniment Program; 2010, Project Manager; 2012, Waste Recycle Consultant.

Saifuddin (Socio-economy and culture)

Profession : Community Organizer, Community Development, Social researcher

Expertise : Community Organizer; Community Development; Facilitator for Environmental Education; Waste Management

Field Experience : Facilitator at PEKA ALAM Ujung Kulon & Meru Betiri, Klub Indonesia Hijau, Facilitator for Outdoor Education, Klub Indonesia Hijau Facilitator for Nature Monitoring Expedition, Klub Indonesia Hijau. Socio-Economic Studies for Shoreline Community on Main Tracking Pangumbahan Green Turtle, Sukabumi-partnership with Ministry State Office for Living Environmental, 1992. Facilitator for Living Environment Education, Bakti Social Surya Baskara Jaya operation, Armabar TNI AL, 1995. Interpreter Training for Biodiversity purpose at Gunung Gede Pangrango National Park, 1995. Flores Expedition, bird ecology survey in Flores-Nusa Tenggara Islands. Conservation Project University of East Anglia, England. 1997.

4 RESULT

4.1. HCV Result

HCV	Definition	Present	Potential	Absent
1	Concentrations of biological diversity including endemic species, and rare, threatened or endangered species, that are significant at global, regional or national levels.	HCV 1.1, 1.2, 1.3, 1.4		
2	Large landscape-level ecosystems and ecosystem mosaics that are significant at global, regional or national levels, and that contain viable populations of the great majority of the naturally occurring species in natural patterns of distribution and abundance.	2.1, 2.2, 2.3		
3	Rare, threatened, or endangered ecosystems, habitats or refugia.	3		
4	Basic ecosystem services in critical situations, including protection of water catchments and control of erosion of vulnerable soils and slopes.	4.1, 4.3		4.2
5	Sites and resources fundamental for satisfying the basic necessities of local communities or indigenous peoples (for livelihoods, health, nutrition, water, etc.), identified through engagement with these communities or indigenous peoples.	5		
6	Sites, resources, habitats and landscapes of global or national cultural, archaeological or historical significance, and/or of critical cultural, ecological, economic or religious/sacred importance for the traditional cultures of local communities or indigenous peoples, identified through engagement with these local communities or indigenous peoples.	6		

NKT	Sub-Item	Definisi	Keberadaan
1.	1.1	Areas/sites that have or give Biodiversity Supporting Function for Protection and/or Conservation Areas.	Company's protected areas, riverbanks
	1.2	Endangered species.	<i>Shorea platycarpa</i> , and <i>Shorea macrantha</i> and <i>Panthera tigris sumatrae</i>
	1.3	Areas that contain habitat for viable population of endangered restricted range or protected species	10 vegetation species, 13 mammals species, 52 avian species, and 7 species of amphibian and reptilian taxa
	1.4.	Areas that contain habitat of temporary use by species or congregation of species	Peat protected area and Simpang Kiri riverbank as migratory bird habitat
2	2.1	Large Natural Landscapes with capacity to maintain natural ecological processes and dynamics	No natural forest with >20.000ha core area and 3km buffer zone
	2.2	Areas that contain two or more contiguous ecosystems	-

	2.3	Areas that contain representative populations of most naturally occurring species	Wildlife biodiversity, especially mammals are found in all peat forest, lowland forest and shrubland with several groups of felidae and accipiter species
3		Areas with endangered or nearly extinct ecosystem.	Peat swamp and fresh water swamp ecosystem
4	4.1	Important areas or ecosystem that function as water supply and flood control for community that resides in downstream areas.	Riparian and peat swamp forest
	4.3	Areas that function as natural barriers to prevent forest or field fire.	100m Forest buffer zone, Industrial Forest Plantation (HTI)
5		Areas with Important Functions to fulfill Local community's basic needs.	(1) protein intake, (2) river water as clean water supply and sanitation, (3) source of income(fish).
6		Areas with Important Functions as Traditional Cultural Identity of Local Communities.	Sacred grave of Wali Sembilan

4.1 Public Consultation Result

Implementation:

Date	5 – 6 June 2014
Venue	Hotel Grand Tjokro, Pekanbaru

Attendance Lists :

Villages Representative

NO	NAME	POSITION	EMAIL	CONTACT NO.
1	Ahmad Saidi	Datuk Panghulu		085278767844
2	Herri Sp	Toma Labuan Papan		082385489013
3	Syahril	Toma Labuan Papan		08533203163
4	Rudihartono	Mesah		081371685724
5	Zaini	Mesah		085307640091
6	Abet.Sh	Kades Penyengat		081275505575
7	Arianto	Kades Tj Simpang		
8	Zulkifli	Sekdes Sp Kateman		085363712648
9	Edi Indra	Bpd Tj Simpang		082169506467
10	Suyono	Lurah Sungai Empat		0813787395511
11	Suhardi	Ldm Sungai Empat		08127666803
12	Ahmad Yani	Ldm Sungai Empat		08527217426
13	M Saleh	Lrah Tj Pinang		085363879989
14	Efendi	Bpd Rambaian		082388868529
15	Sudirman	Desa Rambaian		082173274888

16	H.Syarif	Kades K Gaung		081268450062
17	Sholihin	Bpd K Gaung		081365365897
18	Samat	Bpd K Gaung		
19	Agus Hidayat	Pemuka Masyarakat		085363979807
20	Junedi	Pemuka Masyarakat		085212063931
21	M Haris	Toma		081371202240
22	Sadeli	Kades B Lestari		
23	Sarno	T Masyarakat		
24	Nurudin	Kades Indra Pura		
25	Anto B	Tokoh Adat Tuas		08126820618
26	Ali Arifin	Toma T Indrapura		085265506005
27	Fahruzi	Kades Sp. Kateman		
28	H.Ardi	Kades Rambanan		
29	Agustinus	Perangkat Desa Penyengat		085307640090
30	Ketong	Penyengat		
31	Harlina	Kades Jerambang		
32	Rahman	Sekdes Jerambang		
33	Amir	Bpd Jerambang		
34	H Masbah Saen	Sekdes Belantaraya		
35	Zainal	Staf Belantaraya		
36	Ilham	Bpd Belantaraya		
37	H.Imran Awang	Kades Pungkat		
38	Musa Ahmad	Sekdes Lahangb Baru		
39	Sunardi	Bpd Pungkat		
40	M.Yamin	Masyarakat		
41	Sudirman	Kades H Kabung		
42	Fachrudin	Kades Gembira		
43	Bunyamin	Kades Gembira		
44	Ison			
45	Hr.Abdulah			
46	H Ridwan			
47	Julian			
48	Bambang Irawan			
49	R. Ramli			
50	Sufyan			
51	Pendi			
52	Aramaini			
53	Bandi			
54	Lahuri			
55	Alitiar	Kadus		
56	Edi Susianto	Toma		
57	Hasan Basri	Penghulu Pulau Huda		
58	Beni Erwwin	Pemuda Teluk Pulau Hulu		
59	Karmudin Hasan	Masyarakt Jumrah		
60	Jefri Buckhori,Spdi	Masyarakat T Pulau Hulu		

SUB-DISTRICT OFFICIALS

NO	NAME	POSITION	EMAIL	CONTACT NO.
1	Errie YS	Camat Tanah Putih		08536548
2	T. Mukhtasar	Kec. Sungai Mandau		081276177199
3	H. Syahbudi	Camat Gaung		08126857005
4	Abdul pani	Camat pelangiran		081365698305
5	Afrizal	Camat Siak kecil		081378467897
6	Ibasri	Sekcam Sungai Sembilan		08127636870
7	Syamzani	Plt. Sek Cam Rimba Melintang		081378561040
8	Nurdin	Camat GAS INHIL		081371982281

REGENCY OFFICIALS

NO	NAME	POSITION	EMAIL	CONTACT NO.
1	MUSTIKA JUFRI	BPN.Kab 3rokan Hilir		082386778457
2	YUGO TRIANTONO	Disbun Rohil		081371252701
3	Sandra w	disbun hut		08127689574
4	tajul windaris	BAPEDA BENGKALIS		081365698305
5	Agung Priono	DISHUT INHIL		0852689810025
6	agus winarno	Dishut Dumai		081276290610
7	ridwan	BLH INHIL		081378243265
8	Guntur Benny	DISHUT		
9	Karyono	BPN KAB SIAK		081362180922
10	Adheriawan	LIPT Kehutanan Gaung		08536434841295

CENTRAL AND PROVINCIAL INSTITUTION

NO	NAME	POSITION	EMAIL	CONTACT NO.
1	Ir. PURNOMO	Bp2hp		08127622521
2	ISBANU	BBKSDA		055279048686
3	ALBAHRI	BP2HP		08137103363
4	SAVITRI HANDAYANI	BAPEDA		
5	RATNA JUWITA	BAPEDA		
6	WANLINDA	BAPEDA		
7	MS ABDUL HARIS	MANGGALA AGNI		
8	YUSHAN	BDK		082172456211
9	ZAWILHIJRI	BKSDA RIAU		085271716970

NEIGHBOURING COMPANIES REPRESENTATIVE

NO	NAME	ORGANIZATION/INSTITUTION	EMAIL	CONTACT NO.
1	MUCHTAR	MUSIMAS		082386547859

NGO

NO	NAME	ORGANIZATION /INSTITUTION	EMAIL	CONTACT NO.
1	Fatra Budiato	Rumah pohon	fatra.budianto@rumahpohon.org	082174846499
2	Donny	Siak Cerdas	dofiendra@gmail.com	081270806947
3	Rahmaidi Azami	JIKALAHARI	lordcom-et@gmail.com	081371822940
4	Dede Kunaifi	Rumah pohon	kunaifi.96@gmail.com	08117519146
5	Afdal. M	WWF	afdalmy@yahoo.com	0813897682
6	Teddy. H	Kabut Riau	teddykabut@yahoo.co.id	08127602744
7	Lismar	Riau Pos	hendry-lismar@yahoo.com	081371909930
8	Rusmadya	Green Peace	rusmadya.maharuddin@greenpeace.org	085364454849
9	Aiden	FKKM Riau	denyusti@yahoo.com	08127602744
10	H.T.M.Amin	LAM Riau		082174846479
11	Romes	Scale Up	romeshirawan@yahoo.com	081378052547
12	Janes	Elang	janes.elang@gmail.com	08217210069

ACADEMICIAN

NO	NAME	ORGANIZATION /INSTITUTION	EMAIL	CONTACT NO.
1	Anna Juliarti	Univ. Lancang Kuning	annajuliarti@yahoo.com	082172110069
2	Dr. Nofrizal, S.Pi., M.Si	Univ Riau	aan_fish@yahoo.com	081365578455
3				

The Result of Public Consultation

Result Matrix HCV 1.1.	
Stakeholders Input	
HCV	Riverbanks of Pulau Tumbang and Simpang Kiri
HCVA	Unclear spatial plan by government resulted in vague land and area allocation
Threats Toward HCV	<p>Slash and burn practice of land clearing, even with the condition that most of the areas are peat land, which is prone to forest fire and could spread to the protected areas.</p> <p>Illegal logging activities existed in areas around HCV</p> <p>Riparian areas are accessible by community to take benefits from it, but tree-cutting activities are forbidden.</p> <p>Allocation of area for livelihood tree plantation i.e. rubber and acacia, from the company, to prevent community from accessing and damaging protected areas.</p>
HCVMA	Making special area that is accessible for community that functions as source of income and livelihood to prevent further damage to the protected areas.
Management Recommendation	<p>Government and private companies have to establish clear boundary marking and sign board for the protected areas</p> <p>Establishing natural barriers to prevent or counter measuring forest fire on the boundary of protected area.</p> <p>Disseminating the result of research and study to local community around HCV area to gain support (Socialization)</p> <p>Developing habitat and source of feeding for animal population in HCV area</p> <p>Developing eco-tourism in HCV area, managed by community based on local wisdom as a source of income</p> <p>It is necessary for private companies or government to give clear information regarding field/area that can be cultivated or not.</p> <p>Forest management unit (UMH) is obligated to give information to community about area rights and which field/area that can be managed by community regarding HCVMA (socialization)</p> <p>Prioritizing local plants to be developed as main vegetation in HCV areas.</p> <p>Planning for developing HCV areas, not only protecting existing areas.</p> <p>Making protected forest as eco-tourism object and support community to manage it as well.</p> <p>It is necessary to make continuity inventory to correct whether HCV are declining or increasing in order to measure existing management.</p> <p>Company with cooperation with government and local community undertake monitoring activity at least annually or twice a year</p>
Monitoring Recommendation	<p>Streamlining existing institution to do monitoring, especially by government.</p> <p>Monitoring can be done by local community, and supported by UMH</p> <p>UMH, assisted by NGO, undertakes HCV monitoring or inventory study and the result are disseminated to the media, especially internet.</p>

Stakeholders Inputs	
High Conservation Value (HCV)	
High Conservation Value Area (HCVA)	
Threats toward HCV	High rate of habitat conversion and illegal logging tinggi, while poaching low.
High Conservation Value Management Area (HCVMA)	
Management Recommendations	Human-tiger conflicts are well responded National level information of mammal's death Study to maintain the balance of foodchain.
Monitoring Recommendations	HCV area restoration; encouraging the establishment of conservation area; installing and updating HCV wildlife information board; studying the canal constructions towards HCV

Result Matrix 1.3.	
Stakeholders Inputs	
HCV	Crocodile
HCV	Straw headed bulbul (Cucak Rowo), white-rumped shama (Murai Batu); Silver Arowana; Punak (<i>Tetramerista glabra</i>)
HCVA	
Threats towards HCV	Big mammals population loss less than 30 individual; illegal logging; tiger poaching; land clearing; community ignorance on HCV plants and animals
HCVMA	Crocodile: Gaung River. Kateman. Bear: within forest; Straw headed bulbul: in the shrubs, Arowana, tasik; white-winged duck: all year swamp area
Management Recommendations	Better response of human-tiger conflicts National level information of mammal's death Study to maintain the balance of foodchain HCV area restoration Installing and updating HCV plants and wildlife information board Studying the canal constructions towards HCV
Monitoring Recommendations	Regular monitoring towards HCV Area Joint monitoring between government, company and community Regular evaluation towards the development of HCV Supporting the establishment of forum involving multi stakeholders in landscape based HCV management

Result Matrix HCV 1.4.	
Stakeholders Inputs	
HCV	Starling, Greater green leafbird (Murai Daun), white-rumped shama, tiger, crocodile, lizard, Pangolin, porcupine, Musang, Bear, Slow Loris, Hornbill, Perhutut, spotted dove, glossy swiftlet, bar-winged Prinia, grouse (Belibis), quail (Puyuh), Crested Serpent Eagle, ufous-headed woodpecker (Burung Pelatuk), Burung Embut-Embut, green junglefowl (Ayam Hutan) Pakis Merah, Ramin, Pakis Haji,
HCVA	All area
Threats towards HCV	Less decisive punishment encourages the environmental offender to repeat their offense Utilizing fish, birds, and other wildlife as source of livelihood in unsustainable manners (over harvest, using poison)

Result Matrix HCV 1.4.	
Stakeholders Inputs	
	Less information and socialization lead to ignorance of community on protected species and how to utilize
HCVMA	No tree-cutting activities on riverbanks, only for non-timber forest product and other regulated utilization
Management Recommendations	Middle buyer of endangered species should be reported to law enforcement officials to prevent the illegal trade as well as supply from community Allocating a community management area to be accessible for source of livelihood and income to prevent damage over endangered species
Monitoring Recommendations	UMH, assisted by NGO, undertakes HCV monitoring or inventory study and the result are disseminated to the media, especially internet. Regular inventory study to measure changes and determine the response

Result Matrix 2.1.	
Stakeholders Inputs	
HCV	Correspond with assessment
HCVA	Correspond with assessment
Threats towards HCV	Illegal Logging, encroachment
HCVMA	Including concession area in HCV 2.1
Management Recommendations	Participatory baoundary marking, socialization and monitored evaluation involving community and stakeholders of the protected areas Encouraging village involvement in monitoring by formulating village regulation (perdes) on boundary Closing the access (road, canal and illegal logging) Clear and decisive law enforcement towards illegal logging
Monitoring Recommendations	Correspond with assessment

Result Matrix 2.2	
Stakeholders Inputs	
HCV	
HCVA	Gaung River flood land area
Threats towards HCV	Environmental and ecosystem change due to canalization and land conversion on the assessment area, encroachment and illegal logging on the buffer zone
HCVMA	The management area is not only HCV, but also including Buffer zone
Management Recommendations	Similar to assessment result, further research in buffer zone and ecosystem uniqueness is needed to support preservation
Monitoring Recommendations	Correspond with assessment

Result Matrix 2.3	
Stakeholders Inputs	
HCV	Correspond with assessment
HCVA	HCV 2.1 area and riverbank
Threats towards HCV	Poaching and habitat loss due to encroachment and forest fire

Result Matrix 2.3	
Stakeholders Inputs	
HCVMA	HCV 2.1 area and riverbank except in PT BKM which is in riverbanks and secondary forest
Management Recommendations	Correspond with assessment
Monitoring Recommendations	Socialization, wildlife and vegetation monitoring, law enforcement regarding forest fire and poaching

Result Matrix 3	
Stakeholders Inputs	
HCV	Correspond with assessment
HCVA	Correspond with assessment
Threats towards HCV	External; 1. Forest conversion in secondary natural forest 2. Forest fire and land occupation. Internally, threats occur due to lack of monitoring
HCVMA	HCV 2.1 area
Management Recommendations	Law enforcement towards land conversion, forest fire and land occupation, regular monitoring towards contractor and ensuring the SOP is not threatening HCV 3 and monitoring from company
Monitoring Recommendations	Correspond with assessment

Result Matrix 4.1	
Stakeholders Inputs	
HCV	Source of water is still exist, drinking water quality is lower, flood -->river cleansing deepening, canal to anticipate flood River needs cleansing (from common water hyacinth/enceng gondok) Flood and drought are long, the surrounding water quality is not decent, river water is not consumable, canalization within natural forest, pest plague to community oil palm plantation Irrigation for ricefield should be secured, lack of water
HCVA	Along gaung river, simpang kiri river, simpang kanan river, Along gaung river, simpang kiri river, simpang kanan river, simpang kiri river, Sekusut river, rokan river, Irrigation canal of tasik pesimsim/ tasik rawa hitam to bunga raya village
Threats towards HCV	Too close a range of acacia plantation, chemical fertilizer and pesticide Water scarcity due to canal dam in tasik air hitam Tasik air hitam and surrounding area
Management Recommendations	Water volume management in canal towards its flow to big river, build a borewell to provide drinking water for the community Cooperate with surrounding companies to maintain/manage community's source of water
Monitoring Recommendations	Water quality monitoring, accessible information to the result Participatory planning with community

Result Matrix 4.3	
Stakeholders Input	
HCV	<p>Limau Hantu river, Mundung river, Pipit river, Kayu ara river are locations of source of income from fresh water fisheries sector</p> <p>Bagan Kera river, Terentang river, Pompong river, Ikan river, Perupuk river, Pahat Hulu river, Pahat Hilir river, Anak Telok river, Nau river, Rombia river, Noyang river, Tapatan river, Labuhan river, Bulu Kasap river, Padu river, Pagar air river, Kapet river, Terupeh river, Panti river, Kemudi 1 river, kemudi 2 river, are locations of communities freshwater fishermen</p>
HCVA	Correspond with assessment
Threats towards HCV	Loss of water catchment trees/plants
HCVMA	<p>Big river area should be secured : Noyang river, Terentang river, Labuhan river, pante river, Kemudi river</p> <p>Big river area should be secured : Noyang river, Terentang river, Labuhan river, pante river, Kemudi river</p> <p>Management areas are in community forest as well as company's</p>
Management Recommendations	Riverbanks ricefield, secured natural forest on the riverbanks, reforestation of riverbanks, company's fire management, reforestation of cleared land as one of conflict solution.
Monitoring Recommendations	Cooperation between government, company and community in forest fire, Company establish and empower community group to secure forest area from fire Decisiveness and seriousness of law enforcement officials towards the main actor of forest fire.

MATRIX HCV 5 : PT. RIA	
Stakeholders Input	
HCV	<ul style="list-style-type: none"> • Kokol, selimpat, daun tenggek buruk (Source of vitamin/vegetables) • Fish: juwara, haruan, lompong, selais,biawan, keli, shrimp (source of protein and cash income) • Woods: kempas,sungkai, pulai, nimbang (ria), rangon, bitangur, batang linau rattan dahanan, honey, rattan sege, rattan semampu, lelau/roots, rasau leaf (materials for working tools/equipment and for building boat) • Honey, rasau leaf, tropical pitcher plan, seletup root, kenduduk leaf, pengaga, resah sap, resak wood skin (traditional medicine) • Rain water and bottled water (drinking water) • River water (source of clean water for sanitation)
HCVA	Yes
Threats towards HCV	<ul style="list-style-type: none"> • Mindset shifting of community to disagree could be threat • Expansion of company management area, reducing HCV area and loss of the source of HCV 5 • Fire • Human activities in the riverbank will decrease HCV 5
HCVMA	<ul style="list-style-type: none"> • Yes
Management Recommendation	<ul style="list-style-type: none"> • Company and government supporting community need of woods supply for housing and ship industry • Company CD/CSR program should be innovated to fulfil livelihood, reducing the destructive dependence towards HCV 5 • Company provides new source of clean water from drilled well • water treatment of river water to be appropriate for consumption • forest management unit participation towards community land condition attacked by pest • conflict management by forest management unit should engage community, not only in elite level

MATRIX HCV 5 : PT. RIA

Stakeholders Input

	providing alternative of livelihood trees species, according to the need of community (other than acacia)
Monitoring Recommendation	<ul style="list-style-type: none">• Monitoring should be conducted 3 times a year• Annual monitoring towards community development program• Need biodiversity assessment• Type/pattern of plant

MATRIX HCV 6 : PT. RIA**FINDINGS**

Graves of Wali Sembilan

A historical record of religious teacher (wali) in spreading Islamic teachings. This site is important to be preserved and recorded as HCV 6. People are still doing pilgrimage to the site in Muharram and Rajab (Islamic lunar calendar), to pray and asking for blessing.

INPUTS

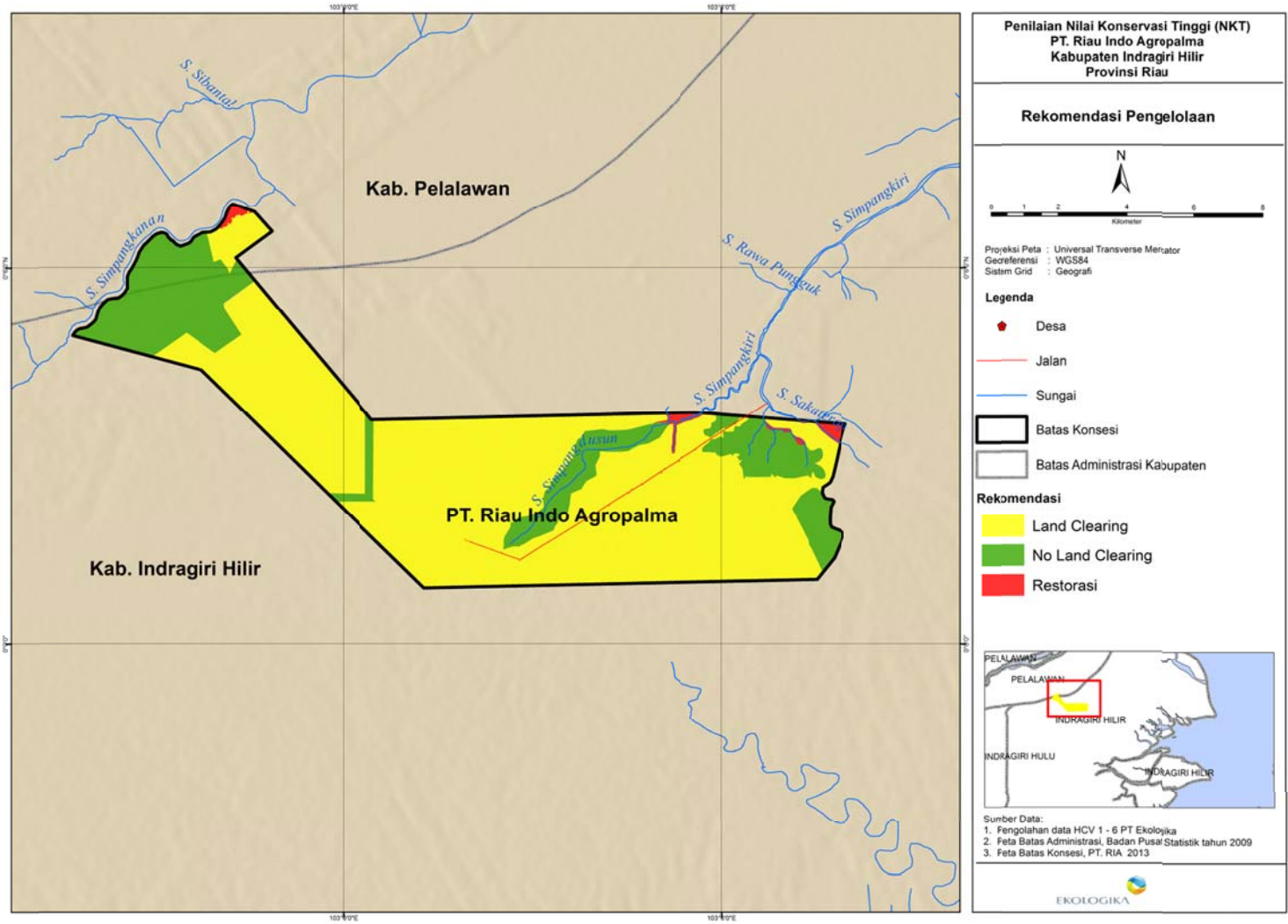
-

5. RECOMMENDATION

HCV	Sub Item	Definition	Management	Monitoring
1.	1.1	Areas that contain or provide biodiversity support function to protection or conservation areas	HCVA Boundary marking	Monitoring the condition of the protected area after HCVA boundary marking
			Controls illegal logging in forest areas	Joint patrols between forest ranger and community
			Increase the understanding of employees, contractors and local community about wildlife.	Measure the amount of occurred poaching
			Making the riverbank into conservation area.	Taking measurements directly in the field
			The involvement of local community in the process of determining land-use agreement	Monitoring land use by using satellite images
	1.2	Endangered species	Controls illegal logging in forest areas	Joint patrols between forest ranger and community
			Mapping CR individual species	recording and tagging of CR stands
			Saving Shorea platycarpa, Shorea cf balangeran seedlings	Recording of seedling development with biodiversity surveys and vegetation research
			Hunting ban and increasing employees and local community awareness about wildlife.	Patrol and enforcement of the reporting system in case of monitoring, installation of camera traps in known crossing locations
			Mapping vulnerable/potentially caused fire areas.	Hotspots observation with Community based fire management
	1.3	Viable populations of endangered, restricted range or protected species	Hunting ban	Patrol and enforcement of the reporting system in case of monitoring, installation of camera traps in wildlife tracks
			Increasing employees, contractors and local community awareness about wildlife.	Regular wildlife monitoring of industrial plantation blocks by forest management unit (UMH) Staff. Monthly reports of HCV species monitoring has included existence/non-existence HCV species stands, condition and possible threats.
			Controlling illegal logging in forest area	Intensive monitoring and patrol (once a month) to ensure that no illegal logging in the concession area, staff, forest ranger and community

HCV	Sub Item	Definition	Management	Monitoring
			Natural succession	Biodiversity and invasive species survey in concession area
	1.4	Areas that contain habitat of temporary use by species or congregations of species	Inventory survey of migratory birds	Surveys in the area bordered by mangroves and other wetland ecosystems
			Increasing awareness on migratory bird species	Questionnaires for staff and the community
2	2.1	Large Natural Landscapes with capacity to maintain natural ecological processes and dynamics	Landscape management collaboration	Stakeholders activity report
			Controlling illegal logging in forest area, law enforcement and designating protected area in natural forest	Intensive monitoring and patrol(once a month) to ensure that no illegal logging in the concession area, staff, forest ranger and community
	2.2	Areas that contain two or more contiguous ecosystems	-	-
	2.3	Areas that contain representative populations of most naturally occurring species	Law Enforcement and establishment of Protected Areas in natural forest	Periodic patrol
			Habitat enrichment	Checking the condition per semester
			Development of Pre-Harvest Monitoring Mechanism	Land verification to check activity status. Monitor endangered species condition
Emphasis Planning general working plan (RKU) and annual working plan (RKT)			Evaluating forest management SOP	
		Cooperative landscape management	Reporting stakeholders activities	
3	Rare or endangered ecosystems	Cooperative landscape management	Reporting stakeholders activities	
		Law Enforcement and Establishment of Protected Areas in natural forest	Periodic patrol	
4	4.1	Areas or Ecosystems Important for the Provision of Water and Prevention of Floods for Downstream communities	Law Enforcement and Establishment of Protected Areas in natural forest	Periodic patrol
			Maintain water level on peat forest/swamp	Measuring ground water level in peat areas, installing subsidence indicator and measuring the level

HCV	Sub Item	Definition	Management	Monitoring
			Collaborative landscape management	Reporting the activities of each party. Vegetation monitoring in border region
	4.3	Areas that Function as Natural Barriers to the Spread of Forest or Ground Fire	Law Enforcement and Establishment of Protected Areas in natural forest	"spot-check" survey and buffer zone forest patrol by production and logging team and forest fire unit
			Community awareness on the danger of slash and burn	Reporting system concerning the activities and how to open a forest area
			Optimizing community based fire management	Doing a "spot-check" survey on the results of the Production Team and logging and forest fire unit
			Enrichment with local species	Conducting a survey in the area of biodiversity conservation
5		Basic Needs of Local People	Collaborative management of sub-watershed Gaung with companies and communities around the area of Gaung River	Regular meetings involving companies that exist in the region and involving government and society
			Community awareness on the importance of forest	reports for activities and the attendance of participants
			No land conversion on HCV 5 around the villages by companies as well as community	Field verification by conducting interviews with local community and field visits
			Establishing honey bee habitat area	Field verification by conducting interviews with local community and field visits
			Developing sustainable community development	Participatory evaluation methods of community development
			Participatory mapping to finalize HCVA 5	Reporting for mapping community meetings
6		Cultural Identity of Local Communities	Further identification and delineation of HCV	Questionnaire and interview with a sample of local members and the existence of document mapping.
			Reactivate local tradition	Field visits



Map summarizes no Land Clearing HCV management area of RIA

6. BIBLIOGRAPHY

- BirdLife International (2001). *Threatened birds of Asia: the BirdLife International Red Data Book*. Cambridge, UK: BirdLife International.
- Danielsen, F., Balete, D. S., Christensen, T. D., Heegaard, M., Jakobsen, O. F., Jensen, A., Lund, T. and Poulsen, M. K. 1994. *Conservation of biological diversity in the Sierra Madre Mountains of Isabela and Southern Cagayan Province, the Philippines*. Birdlife International, Department of the Environment and Natural Resources, Manila.
- Dinata, Y.; Nugroho, A.; Haidir, I. A.; Linkie, M. 2008. Camera trapping rare and threatened avifauna in west-central Sumatra. *Bird Conservation International* 18(1): 30-37.
- Fooden, J. 1991. Systematic review of Philippine macaques (Primates, Cercopithecidae: *Macaca fascicularis* subsp.). *Fieldiana: Zoology* 64: 1-44.
- Fooden, J. 1995. Systematic review of Southeast Asia long-tail macaques, *Macaca fascicularis* Raffles (1821). *Fieldiana Zoology* 64: 1-44.
- Gittins, S. 1979. The behavior and ecology of the agile gibbon (*Hylobates agilis*). Ph.D. Thesis, University of Cambridge.
- Gittins, S. 1980. Territorial behavior in the agile gibbon. *International Journal of Primatology* 1(4): 381-399.
- Gittins, S. 1982. Feeding and ranging in the agile gibbon. *Folia Primatologica* 38(1-2): 39-71.
- Goodman, S. M. and Ingle, N. R. 1993. Sibuyan Island in the Philippines-threatened and in need of conservation. *Oryx* 23: 174-180.
- Heaney, L. R., Gonzales, P. C., Utzurrum, R. C. B. and Rickart, E. A. 1991. The mammals of Cataduanes Island: Implications for the biogeography of small land-bridge islands in the Philippines. *Proceedings of the Biological Society of Washington* 104(2): 399-415.
- IUCN 2010. *IUCN Red List of Threatened Species. Version 2010.3*. <<http://www.iucnredlist.org>>.
- Jennings, S., R. Nussbaum, N. Judd, and T. Evans (2003). *The High Conservation Value Forest Toolkit, Edition 1, December 2003*. ProForest. Oxford UK.
- Keputusan Menteri Kehutanan Nomor: 70/Kpts-II/95 *Tentang Pengaturan Tata Ruang Hutan Tanaman Industri*
- Leary *et al.* 2008. *Zaglossus bruijini*. In: *IUCN 2010. IUCN Red List of Threatened Species. Version 2010.3*. <<http://www.iucnredlist.org/apps/redlist/details/23179>>. Downloaded on 02 September 2010.
- MacKinnon, J., K. Phillipps, B.V. Balen. 2010. *Burung-Burung di Sumatra, Jawa, Bali dan Kalimantan*. Burung Indonesia. Indonesia.
- Molur, S., Brandon-Jones, D., Dittus, W., Eudey, A., Kumar, A., Singh, M., Feeroz, M. M., Chalise, M., Priya, P. and Walker, S. 2003. *Status of South Asian Primates: Conservation Assessment and Management Plan Report*. Workshop Report, 2003. Zoo Outreach Organization/CBSG-South Asia, Coimbatore, India.
- Nijman, V. & Manullang, B. 2008. *Presbytis melalophos*. The IUCN Red List of Threatened Species. Version 2014.1. <www.iucnredlist.org>. Downloaded on 16 July 2014.

- O'Brien, T. G., Kinnaird, M. F., Nurcahyo, A., Iqbal, A. and Rusmanto, M. 2004. Abundance and distribution of sympatric gibbons in a threatened Sumatran rain forest. *International Journal of Primatology* 25(2): 267-284.
- Paoli and Wells. 2009. *A Case Study on Landscape High Conservation Value Mapping in West Kalimantan, Indonesia*. Daemeter Consulting. Available at www.deameter.org
- Prasetijo A. 2011. Serah Jajah dan Perlawanan yang Tersisa. Etnografi Orang Rimba di Jambi. Wedatama Widya Sastra. Jakarta.
- Rabor, D.S. 1986. *Guide to the Philippine flora and fauna*. Natural Resources Management Centre. Ministry of Natural Resources and University of the Philippines.
- Renard RG, GR Foster, GA Weesies, DK McCool and DC Yoder, coordinators. 1997. Predicting Soil Erosion by Water: A guide to Conservation Planning With the Revised Universal Soil Loss Equation (RUSLE). U.S. Department of Agriculture, Agriculture Handbook No. 703, 404 pp.
- Rickart, E. A., Heaney, L. R., Heidman, P. D. and Utzurrum, R. C. B. 1993. The distribution and ecology of mammals on Leyte, Biliran, and Maripipi islands, Philippines. *Fieldiana: Zoology* 72: 1-62.
- Sileuw, A., D.R.Muhataman, H.Arief, K. Santoso, L.B.Prasetyo, P.Nurwata, I.Mansyur, S.Setyanto. W.F.Riva, W.A.Djarmiko, Y.Suryadinata. 2013. Panduan Pengelolaan dan Pemantauan Nilai Konservasi Tinggi. IFACS-USAID. Jakarta.
- Thomas, O. 1898. On the mammals obtained by Mr John Whitehead during his recent expedition to the Philippines. *Transactions of the Zoological Society of London* 14: 377-412.
- Winarni, N. L.; O'Brien, T. G.; Carroll, J. P.; Kinnaird, M. F. 2009. Movements, distribution and abundance of Great Argus Pheasants (*Argusianus argus*) in a Sumatran rainforest. *The Auk* 126(2): 341-350.
- Paoli and Wells (2009). *A Case Study on Landscape High Conservation Value Mapping in West Kalimantan, Indonesia*. Daemeter Consulting. Available at www.deameter.org
- Prasetijo, A. 2011. Serah Jajah dan Perlawanan yang Tersisa. Etnografi Orang Rimba di Jambi. Wedatama Widya Sastra. Jakarta
- Renard, R.G., G.R. Foster, G.A. Weesies, D.K. McCool, and D.C. Yoder, coordinators. 1997. Predicting Soil Erosion by Water: A guide to Conservation Planning With the Revised Universal Soil Loss Equation (RUSLE). U.S. Department of Agriculture, Agriculture Handbook No. 703, 404 pp.
- Sileuw, A., D.R.Muhataman, H.Arief, K. Santoso, L.B.Prasetyo, P.Nurwata, I.Mansyur, S.Setyanto. W.F.Riva, W.A.Djarmiko, Y.Suryadinata. 2013. Panduan Pengelolaan dan Pemantauan Nilai Konservasi Tinggi. IFACS-USAID. Jakarta