



ASSESSMENT OF HIGH CONSERVATION VALUE (HCV) HIGH CARBON STOCK (HCS) AND MANAGEMENT MONITORING STRATEGIES IN BETUNG KERIHUN DANAU SENTARUM KAPUAS HULU BIOSPHERE RESERVE (BKDSKHBR)



diimplementasikan oleh:

giz Deutsche Gesellschaft
für Internationale
Zusammenarbeit (GIZ) GmbH



**KAPUAS HULU
HEBAT!**



IPB University
— Bogor Indonesia —

PREPARED BY

Environment Research Center (PPLH) – IPB University

Team Leader

Syartinilia

Expert Team

Andrea Emma Pravitasari

Ario Bhirowo

Yudi Setiawan

Adisti Permatasari Putri Hartoyo

A Faroby Falatehan

Lutfian Nazar

Zulfikri

Fajar Surya Pratomo

Muhammad Wahid

Tri Permadi

Technical Staff

Vidya Nur Trissanti

Rofifah Aulia Suyitno



diimplementasikan oleh:



IPB University
Bogor Indonesia

ASSESSMENT OF HIGH CONSERVATION VALUE (HCV) HIGH CARBON STOCK (HCS) AND MANAGEMENT MONITORING STRATEGIES IN BETUNG KERIHUN DANAU SENTARUM KAPUAS HULU BIOSPHERE RESERVE (BKDSKHBR)

TABLE OF CONTENTS

High Conservation Value (HCV)	5
■ HCV 1 Species Diversity	5
■ HCV 2 Ecosystems and Mosaics at the Landscape Level	5
■ HCV 3 Ecosystem and Habitat	5
■ HCV 4 Ecosystem Services	6
■ HCV 5 Community Needs	6
■ HCV 6 Cultural Value	6
High Carbon Stock (HCS)	12
Go No-Go Area	13
Land Suitability	15
Deforestation and Degradation Prediction 2020-2034	16
Management and Monitoring Strategy	17
■ Management Strategy	17
■ RTRW Zoning Revision	19
■ Adaptive Management	20
■ Monitoring Strategy	26

TABLE OF ACRONYMS

BAU	: Business As Usual
BKDSKHBR	: Betung Kerihun Danau Sentarum Kapuas Hulu Biosphere Reserve
GAP	: Good Agriculture Practice
HCS	: High Carbon stock
HCV	: High Conservation Value
HCVRN	: High Conservation Value Resource Network
HP	: Production Forest
HPK	: Conversion Production Forest
HPT	: Limited Production Forest
KBKT	: High Conservation Value Area
RTE	: Rare, Threatened and Endangered
RTRW	: Spatial Plan

Agricultural commodities such as natural rubber or oil palm play an essential role in rural development in many developing countries, forming the basis of the livelihood of millions of households. However, its production and processing are accompanied by various ecological, economic and social challenges. Often supplied as unprocessed raw materials into global supply chains, the added value of which is limited in producing countries. Many farming households struggle to meet their basic needs and invest in sustainable production practices. In addition, the occurrence of deforestation and forest degradation for the addition of agricultural land or plantations is of international concern.

To address these challenges, the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH, which is an international cooperation enterprise for sustainable development with worldwide operations on behalf of the German Government, in collaboration with the Indonesian Ministry of Agriculture implements the project “Sustainability and Value Added in Agricultural Supply Chains in Indonesia” (SASCI+) project from August 2020 to March 2025. The commodity focus of the SASCI+ program in Kapuas Hulu is natural rubber and oil palm. Global markets increasingly demand deforestation-free products that are High Conservation Value-High Carbon Stock (HCV-HCS) safe and are sourced from sustainably managed jurisdictions. This HCV-HCS assessment in the Betung Kerihun Danau Sentarum Biosphere Reserve (BKDSKHBR) is a prerequisite for informed spatial planning and improvement of HCV-HCS management for sustainable jurisdictional development.

The Environmental Research Center (PPLH), IPB University, was commissioned by GIZ to conduct an HCV-HCS assessment and to develop a management and monitoring strategy for the Betung Kerihun Danau Sentarum Kapuas Hulu Biosphere Reserve (BKDSKHBR) in Kapuas Hulu Regency, West Kalimantan Province.

This study uses the HCV-HCS assessment method following the Indonesian version of the General Guidelines for HCV Identification in 2008 and the HCS Approach Toolkit version 2.0, this assessment is complemented by primary data collection for HCV-HCS in the field (surveys, interviews, and FGDs) to subsequently produce Go No-Go Area based on HCV-HCS priority scale criteria and existing land cover conditions. In addition, an analysis of land cover changes (2000-2020), land suitability, and land cover projections were carried out, which was then overlaid with Go No-Go Areas to produce Management and Monitoring Strategy Recommendations in buffer zones and transitional biosphere reserves (Figure 1).

In order to complete the study, PPLH-IPB conducted a verification workshop on June 15th, 2022 and ended with a public consultation on August 10th, 2022, which took place in the Bappeda hall, Putussibau. The public consultation was conducted in a hybrid manner with 59 participants who attended directly. Eight people from representatives of local government / academics / companies / NGOs / local peoples in Kapuas Hulu Regency attended offline. The public consultation concluded with the signing of the Minutes by 13 representatives from each stakeholder who attended, including local governments / academics / companies / NGOs / local people. Minutes are needed to state that this public consultation activity has been carried out by disseminating the results of this study to relevant parties so that it is hoped that it will benefit future development plans by taking into account the HCV-HCS areas in Kapuas Hulu Regency.

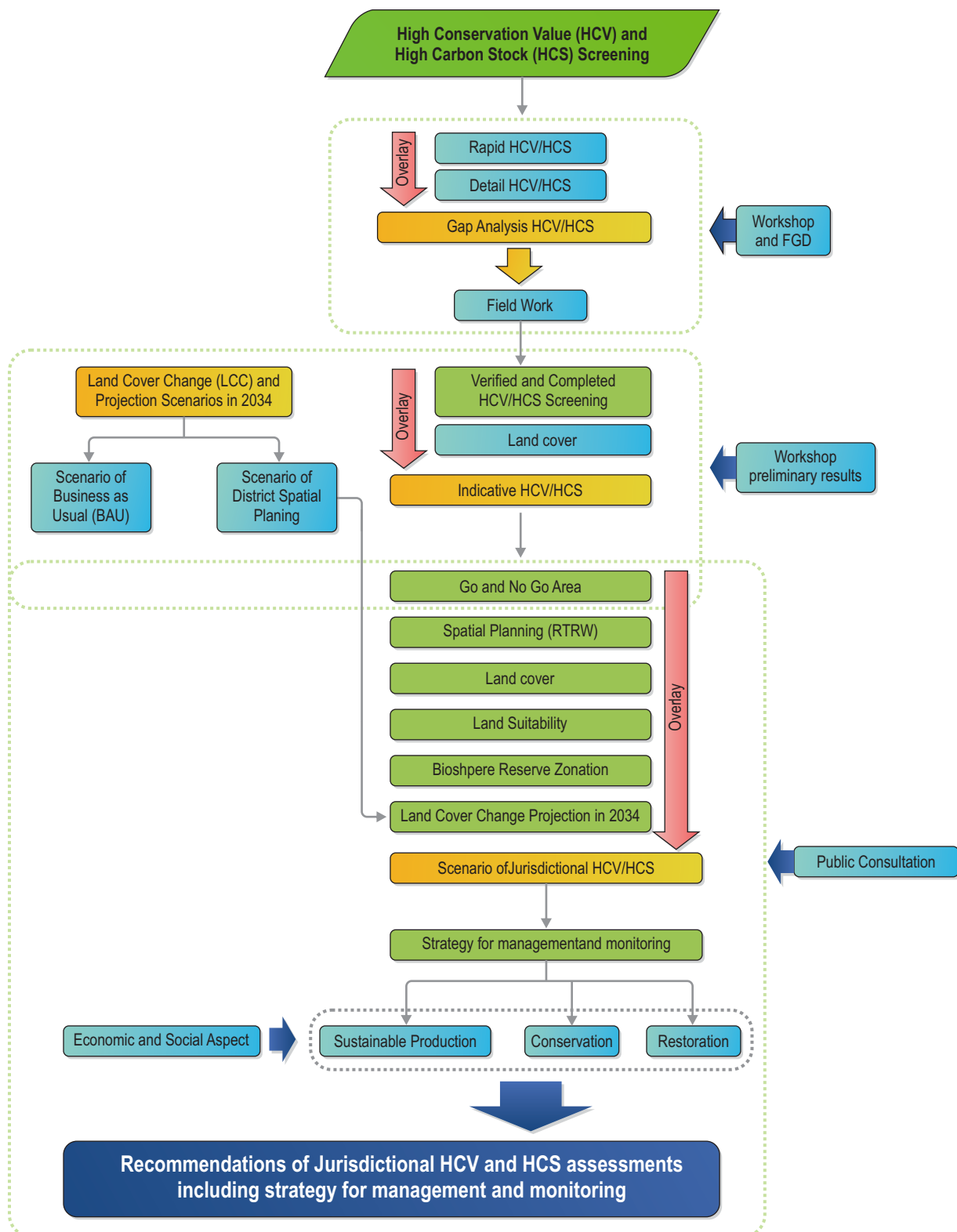


Figure 1. Workflow

HIGH CONSERVATION VALUE (HCV)

In general, HCV 1, 2, and 3 are related to aspects of biodiversity that are present in a landscape or a smaller area. HCV 4 is related to environmental service aspects. HCV 5 has criteria designed to protect basic needs derived from forests or other natural resources. The main criteria for HCV 6 are traditional cultural identity/local people.

HCV 1 Species Diversity

HCV 1 includes significant concentrations of biodiversity, that are considered exceptional compared to other areas or based on a priority framework and through field studies and consultations (Figure 2). This HCV 1 requires an area to contain significant concentrations of species (RTE and endemic) or habitats that play a critical role in the survival of these species. HCV 1 in the BKDSKHBR landscape consists of HCV 1.1 (areas containing or providing biodiversity support functions for protected or conservation areas); HCV 1.2 (critically endangered species); HCV 1.3 (habitats for viable populations of threatened, restricted or protected species) and HCV 1.4 (species or groups of species that use the habitat temporarily). The spatial analysis results show that the indicative area of the HCV 1 area in the BKDSKHBR landscape is 2,519,401.81 ha.

HCV 2 Ecosystems and Mosaics at the Landscape Level

HCV 2 includes ecosystems and ecosystem mosaics that are large enough and relatively undisturbed (intact forest) to support viable populations of most biological species and (implicitly) the majority of environmental values that appear in the associated ecosystem (Figure 3). HCV 2 in the BKDSKHBR landscape consists of HCV 2.1 (large landscapes that have the capacity to maintain natural ecological processes and dynamics.); HCV 2.2 (natural areas containing two or more ecosystems with unbroken boundaries (continuous)) and HCV 2.3 (areas containing populations of representatives of natural species that can survive). Based on the spatial analysis results, the indicative area of the HCV 2 area is 2,471,780.31 ha.

HCV 3 Ecosystem and Habitat

Two things are of concern in this HCV 3, namely the critical role that an ecosystem, habitat, or refugia can play in rare and threatened conditions or because of the presence of species, composition and structure of species that inhabit an ecosystem, habitat, refugia that are rare or unique or other characteristics (Figure 4). Based on the analysis results, several areas are included in the HCV 3 category. Some ecosystems are rare because they cover less than 5% of the total study area, namely peat, water/lake ecosystems, swamp forests, and riparian forests. The total area of HCV 3 is 397,167.28 ha.

HCV 4 Ecosystem Services

Essential ecosystem services in critical situations include protecting catchments and controlling the erosion of vulnerable soils and slopes (Figure 5). There are two things to consider in this HCV 4.

- 1). Ecosystem services in the form of benefits obtained by humans through ecosystems, including the provision of services, such as food and water; regulatory services, such as regulation of floods, droughts, soil degradation, and disease; cultural services such as recreational, spiritual, religious and other non-material benefits; and other supporting services such as soil shaping and nutrient cycling; and
- 2). Ecosystem services become critical when disruption to those services poses a severe, catastrophic or cumulative negative impact on the well-being, health or resilience of local communities and critical infrastructure functions (roads, dams, reservoirs, hydroelectric schemes, irrigation systems, buildings, and infrastructure) or against other HCVs. HCV 4 in the BKDSKHBR landscape consists of HCV 4.1 (Important Areas or Ecosystems as Water Providers and Flood Control for Communities); HCV 4.2 (areas important for erosion and sedimentation control), and HCV 4.3 (areas that function as natural barriers to prevent forest and land fires from spreading). High Conservation Value Areas in the BKDSKHBR landscape as HCV 4 covering an area of 2,215,830.25 ha

HCV 5 Community Needs

HCV 5 aims to determine areas that have an essential function as a source of livelihood for local communities, either to meet their needs directly (subsistence/own consumption) or indirectly (commercially) through the sale of forest products or other natural resources to get cash. In the study area, HCV 5 area was identified (Figure 6). HCV 5 consists of rivers, lakes, forests, Manua Sungai Utik Customary Forest, Betung Karihun and Danau Sentarum National Parks, with a combined area of 971,342.82 ha.

HCV 6 Cultural Value

HCV 6 aims to identify landscape areas critical to the identity and culture of local traditional communities. Values under HCV 6 can be species or large areas of forest and landscape that perform or provide (and have been providing for generations) specific functions for traditional communities. It can be the preservation of ideas, beliefs, habits, activities, cultural relationships, and behaviours, without which society would begin to change. Several examples of HCV 6 are found in the BKDSKHBR landscape, including Betang Semangkok houses, grave site Semangkok, Betang Dai Bolong Pambean, and Customary Forest Pulau Pendam. Based on the results of identification carried out directly and from secondary sources, there is an indicative HCV 6 area of 237.74 ha (Figure 7).

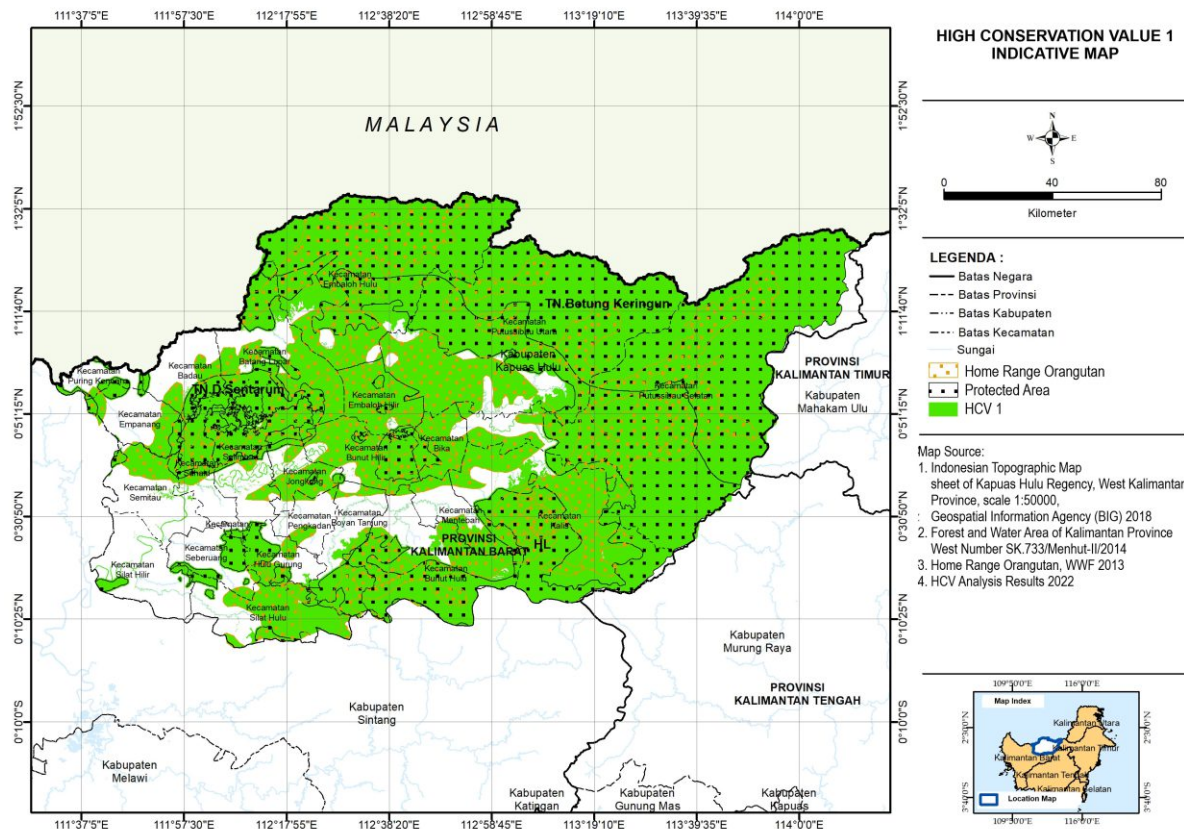


Figure 2. HCV 1

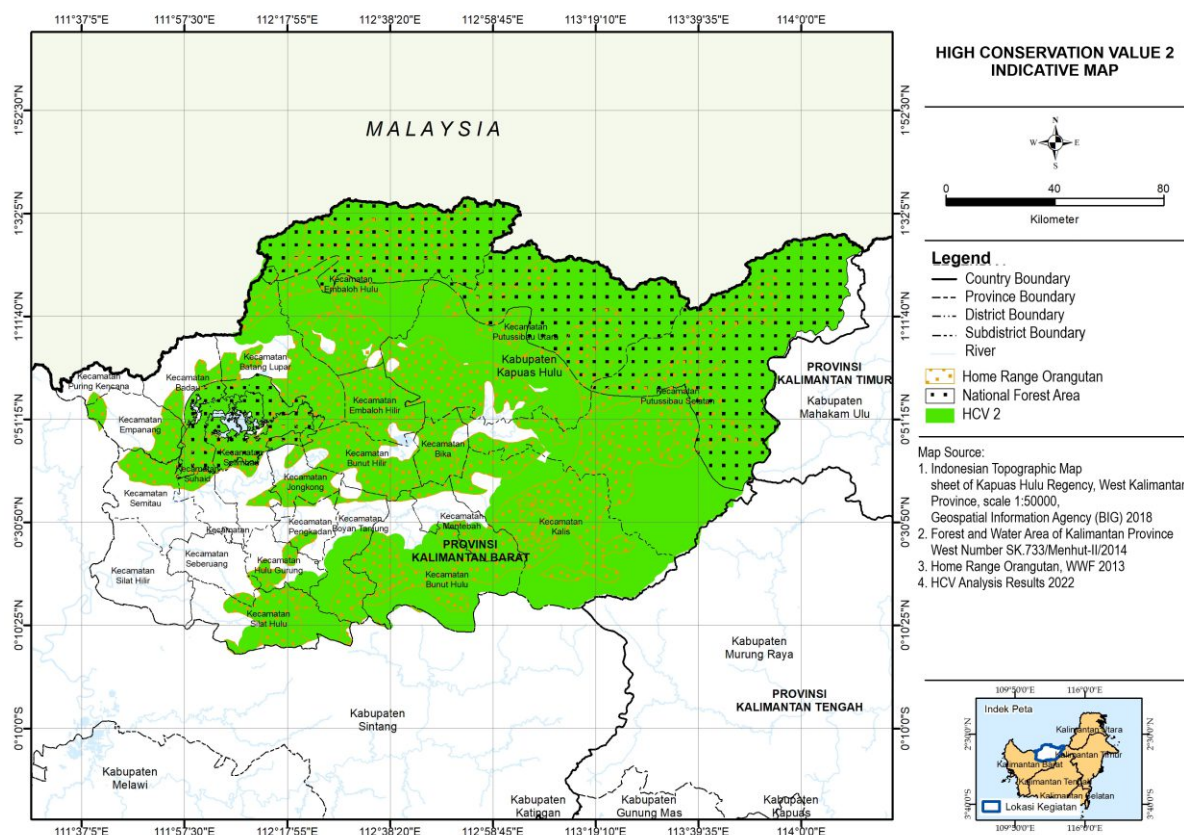


Figure 3. HCV 2

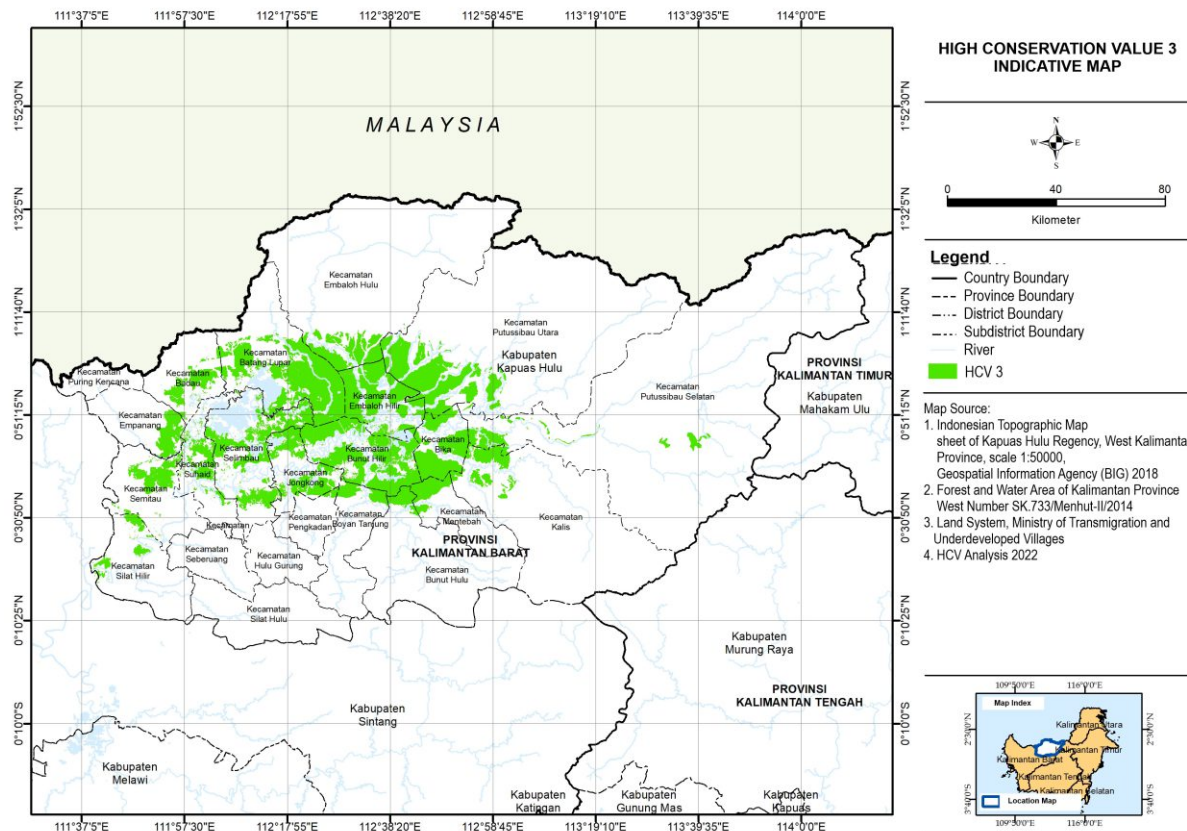


Figure 4. HCV 3

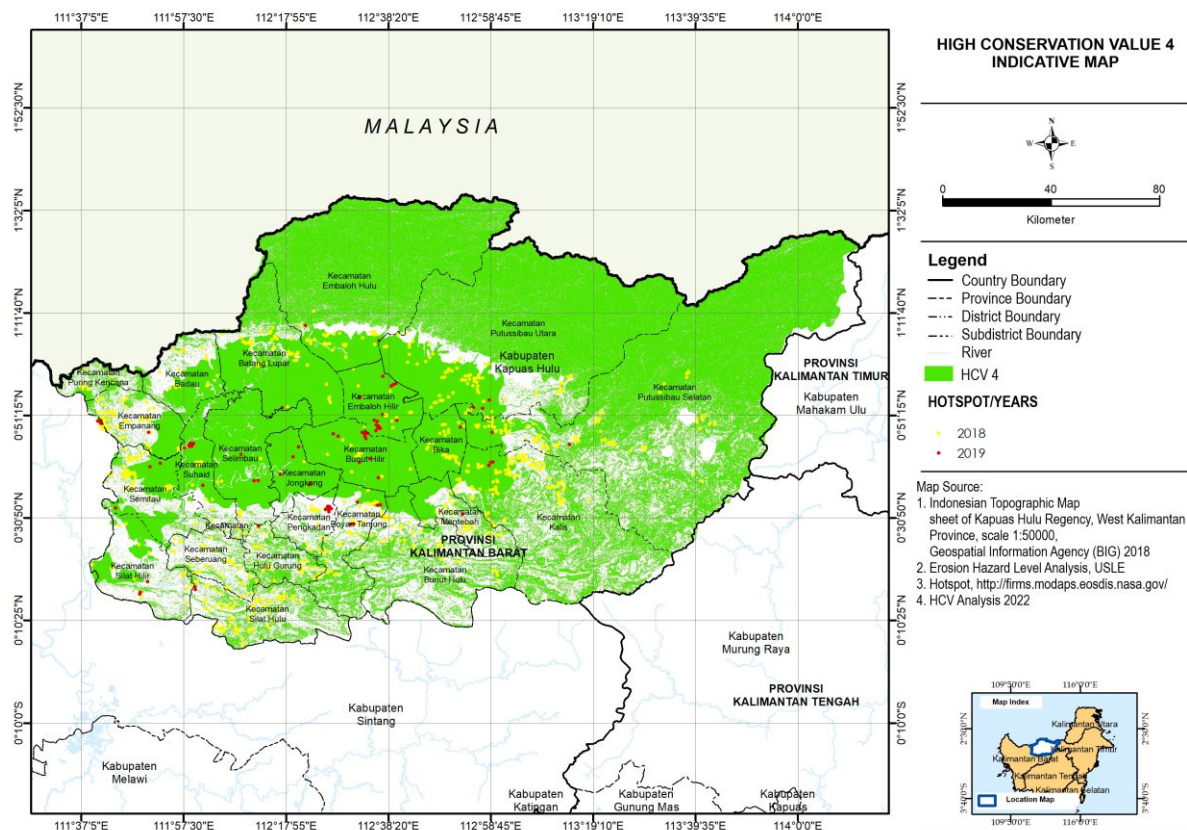


Figure 5. HCV 4

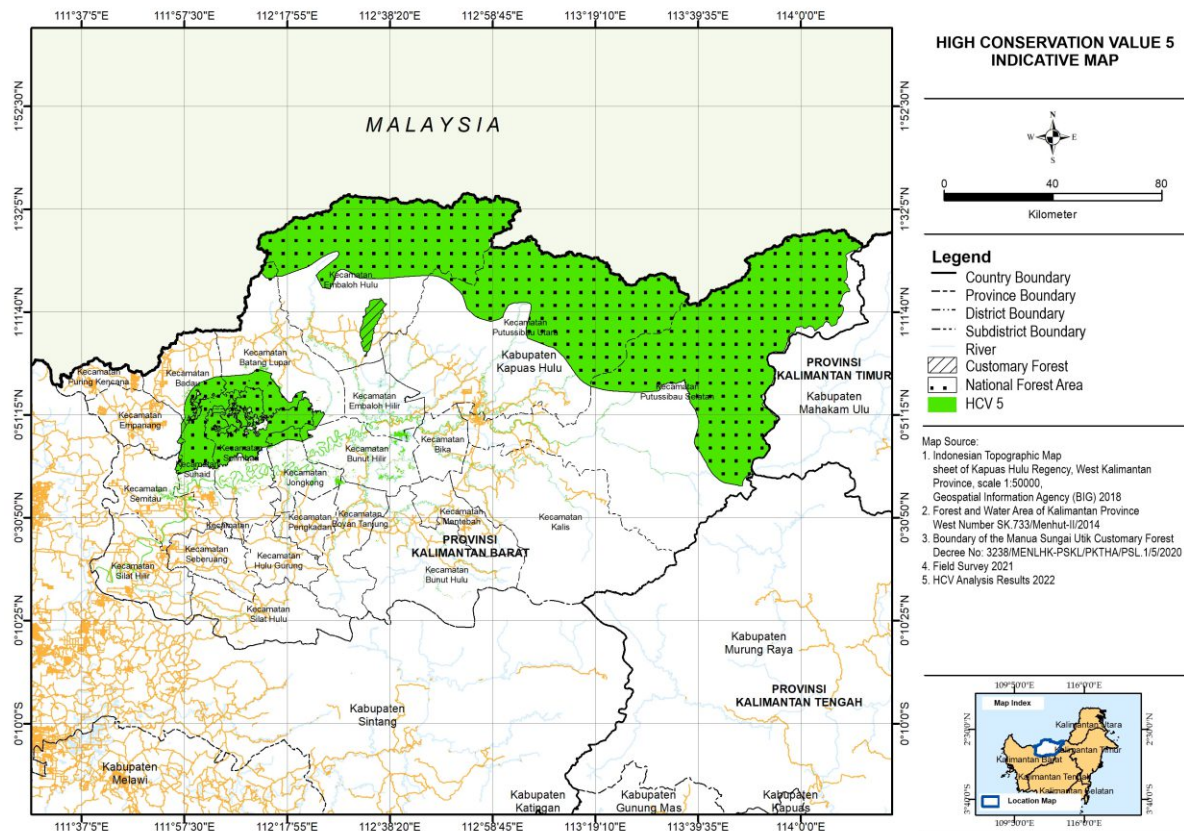


Figure 6. HCV 5

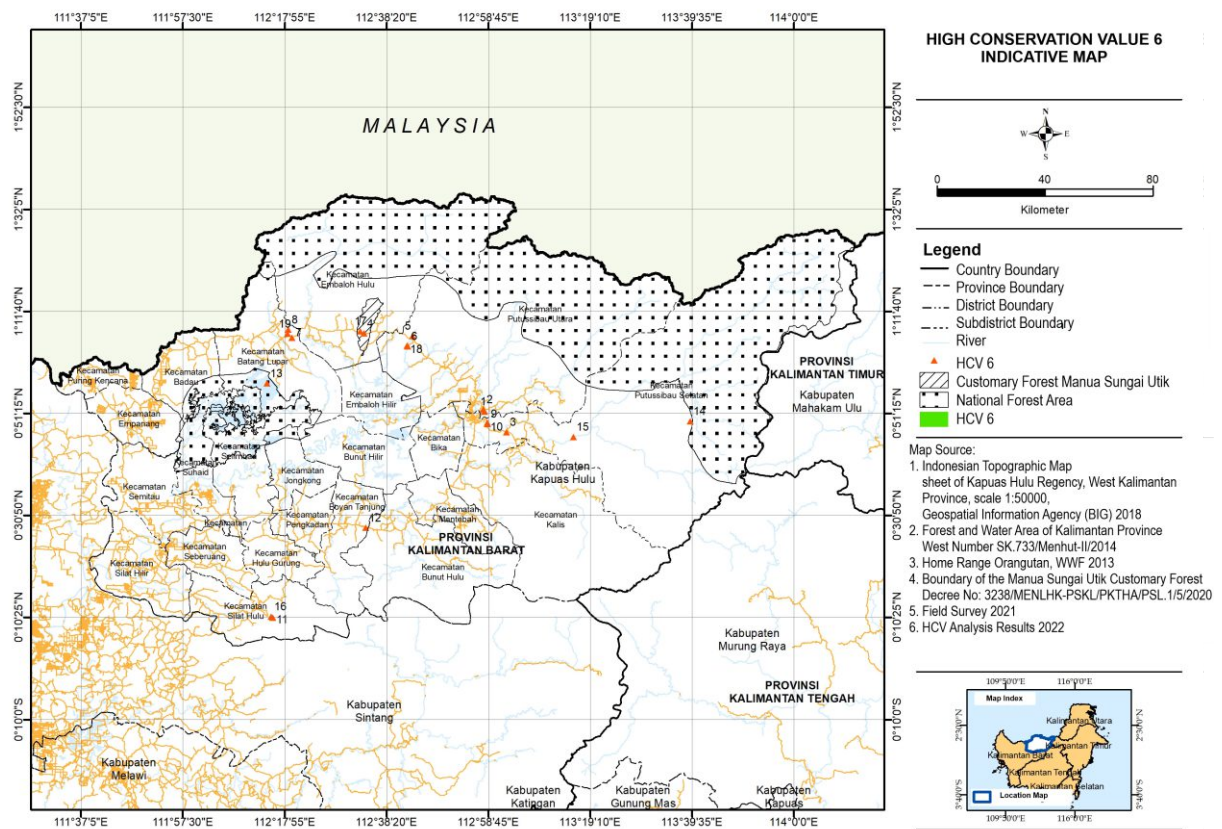


Figure 7. HCV 6

There does not always have to be only one HCV in a given area, but there can also be several HCV values present in parallel. The study results show that there are areas with biodiversity value and the value of environmental, social and cultural services for the community (Figure 8 and Table 1). The area classified as a High Conservation Value Area (KBKT) in BKDSKHBR is 2,822,317.75 ha.

Table 1. Overview of the extent of each type of HCV in the BKDSKHBR landscape

HCV type	HCV Description	Status	Area (ha)
HCV 1 Species Diversity		Existence	2,519,401.81
HCV 1.1	Areas that contain or provide biodiversity support functions for protected or conservation areas	Existing	1,820,287.52
HCV 1.2	<i>Critically</i> endangered species	Existing	1,912,206.27
HCV 1.3	Habitats for <i>viable populations</i> of threatened, restricted or protected species	Existing	2,360,199.73
HCV 1.4	Species or groups of species that use the habitat temporarily	Existing	1,227,847.20
HCV 2 Ecosystems and Mosaics at the Landscape Level		Existing	2,471,780.31
HCV 2.1	Large landscapes that have the capacity to maintain natural ecological processes and dynamics	Existing	1,862,621.15
HCV 2.2	Natural areas containing two or more ecosystems with unbroken boundaries (continuous)	Existing	372,247.73
HCV 2.3	Areas containing populations of surviving representatives of natural species	Existing	2,360,199.73
HCV 3 Ecosystem and Habitat		Existing	397,167.28
HCV 4 Ecosystem Services		Existing	2,215,830.25
HCV 4.1	Areas of ecosystems that are important as water providers and flood control for the community	Existing	752,855.94
HCV 4.2	Areas important for erosion and sedimentation control	Existing	1,477,568.76
HCV 4.3	Areas that function as natural barriers to prevent forest and land fires from spreading	Existing	56,287.69
HCV 5 Community Needs		Existing	971,342.82
HCV 6 Cultural Value		Existing	237.74
Total Area of KBKT (ha)			2,822,317.75

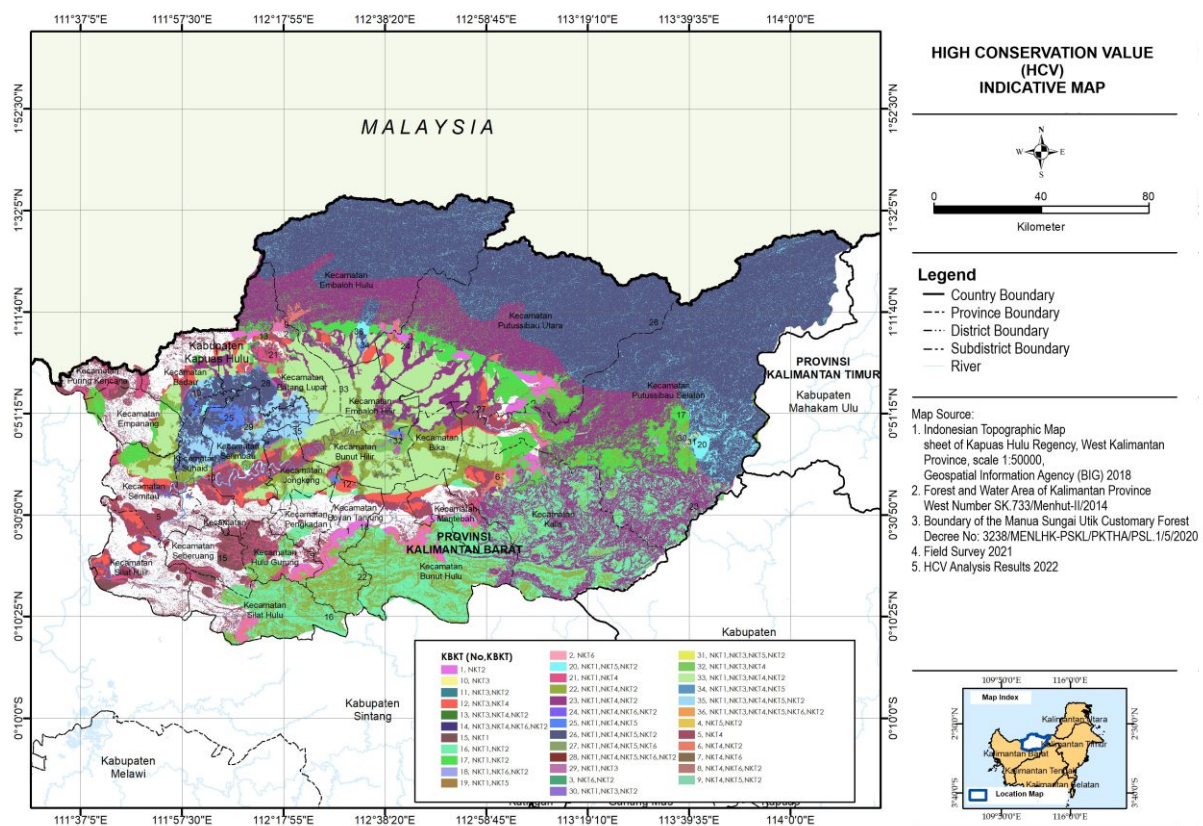


Figure 8. Indicative Map of High Conservation Value Areas in BKDSKHBR

HIGH CARBON STOCK (HCS)

The analysis of High Carbon Stock (HCS) results in the BKDSKHBR landscape covering an area of 1,803,685.46 ha of HCS density forest, and 842,737.71 ha of young regeneration forest HCS, as well as Non-HCS of 470,489.992 ha (Figure 9).

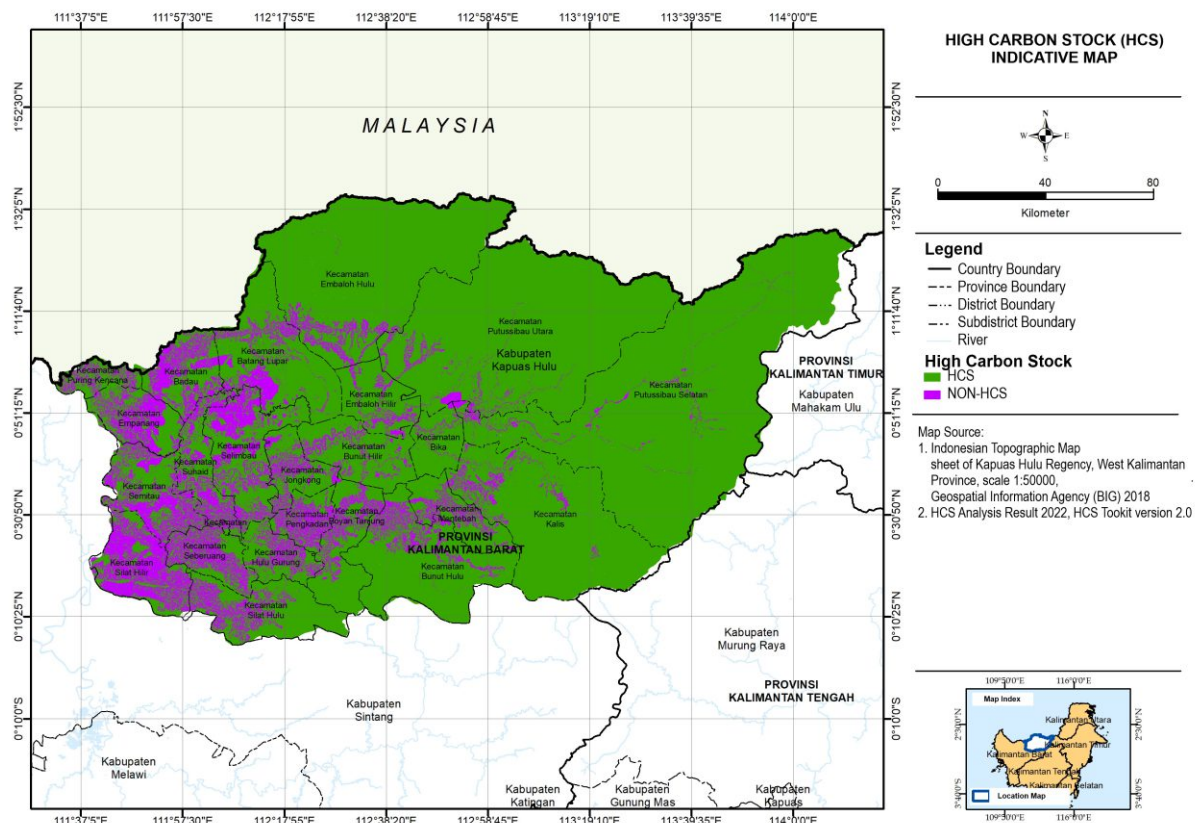


Figure 9. Indicative map of HCS in the BKDSKHBR landscape

GO NO-GO AREA

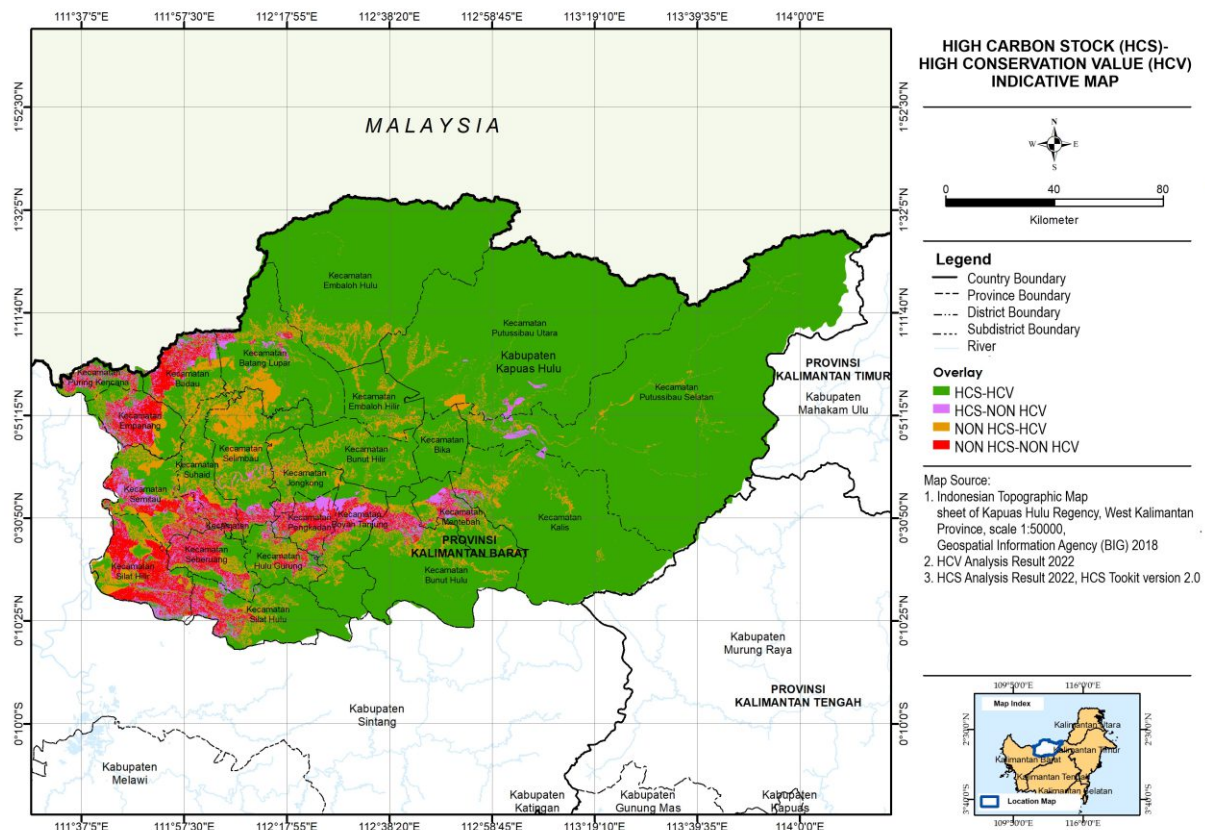


Figure 10. Indicative HCS HCV map in the BKDSKHBR landscape

The No-Go area is based on the results of an HCV-HCS study and this area must be protected or cultivation activities should be carried out only under consideration of environmentally friendly and sustainable land management techniques. These include proper protection and management measures for preventing degradation, deforestation or loss of area function with a specific value. On the contrary, in Go areas cultivation or other development activities are permissible (Figure 11). The analysis results show that the indicative area of No-Go Priority 1 in the study landscape is 1,287,782.37 ha, No-Go Priority 2 is 1,358,640.81 ha, and No-Go Priority 3 is 307,587.02 ha. In contrast, the area of Go, which can be developed, is 162,907.27 ha. More refined, 147,389.83 ha of Go Area is in APL, while the rest is in Production Forest (HP), Conversion Production Forest (HPK), and Limited Production Forest (HPT).

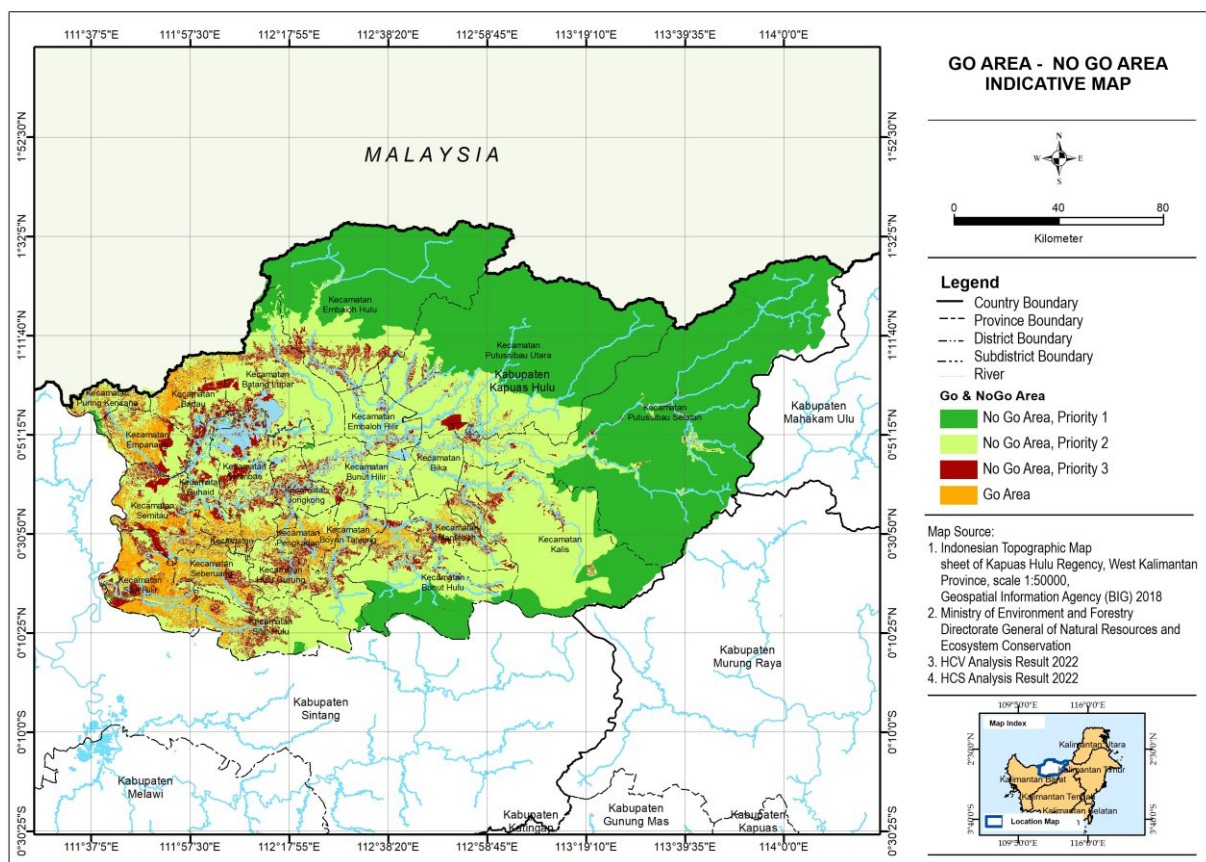


Figure 11. Indicative map of Go No-Go Areas in the BKDSKHBR landscape

LAND SUITABILITY

Land suitability of Kapuas Hulu Regency for the commodity natural rubber and oil palm (Figure 12 and Figure 13) is dominated by class N (not suitable), followed by S3 (marginally suitable) and S2 (appropriate).

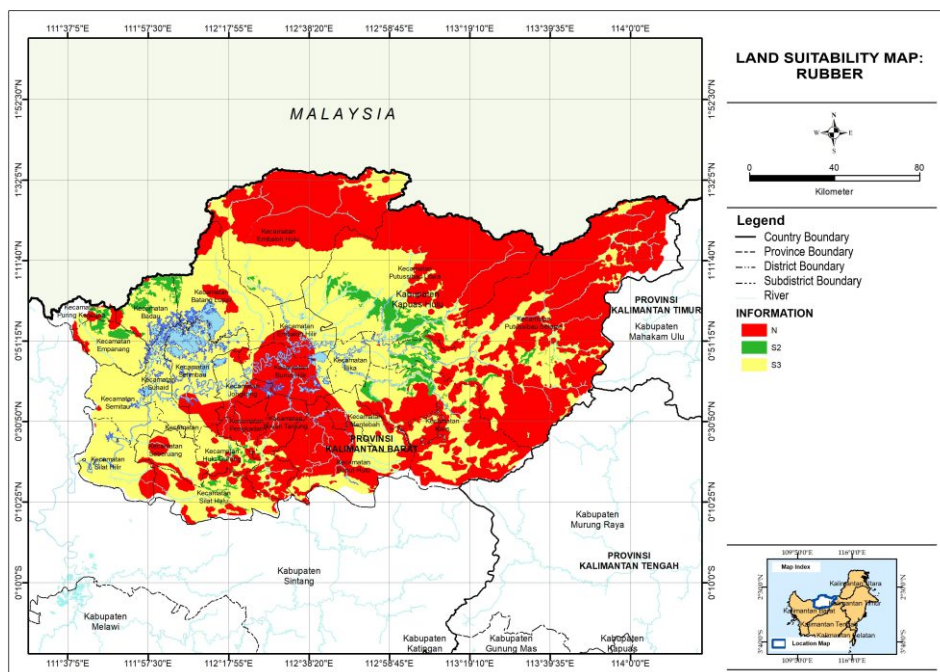


Figure 12. Land Suitability: Rubber

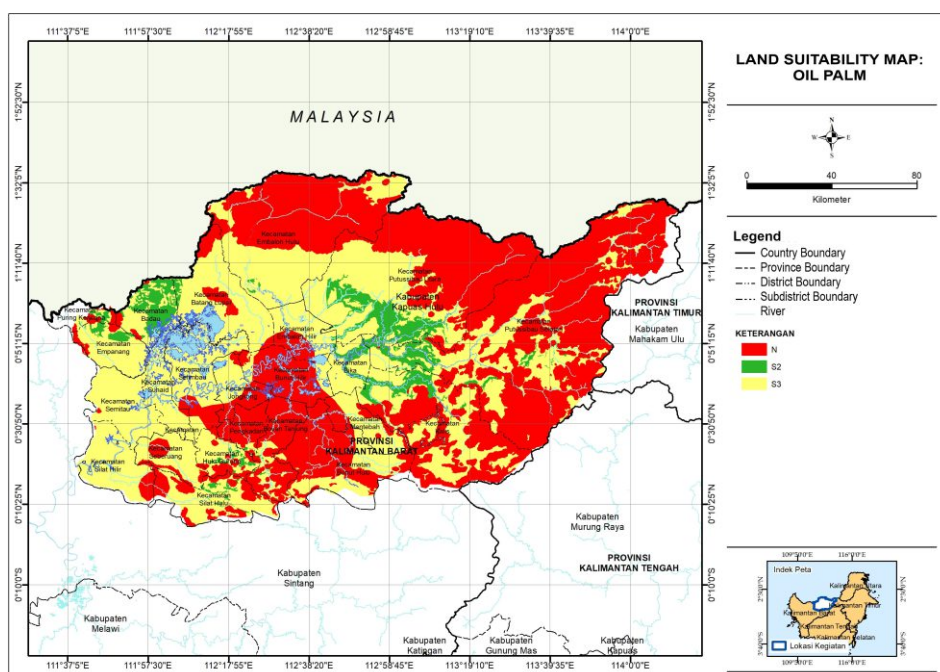


Figure 13. Land Suitability: Oil Palm

Class N (not suitable) is displayed in red with a total area of 1,482,231 ha, while class S3 covers an area of 1,388,464 ha and S2 covers an area of 100,389.9 ha. For the commodity oil palm, it is dominated by class N (1,569,954.63 ha), class S3 (1,468,454.34 ha), and class S2 (106,301.73 ha).

DEFORESTATION AND DEGRADATION PREDICTION 2020-2034

Based on baseline data from 2020 (HCV and HCS screening by HCVRN), compared to the map of land cover projections in 2034, the BAU scenario predicts that there will occur deforestation and forest degradation in the forest area. By 2034, the BAU scenario predicts 7,908.30 ha of deforestation and 39,987.90 ha of forest degradation (Figure 14). On the other hand, the 2034 RTRW scenario predicts 55,074.97 ha of deforestation and 37,998.31 ha of forest degradation (Figure 15).

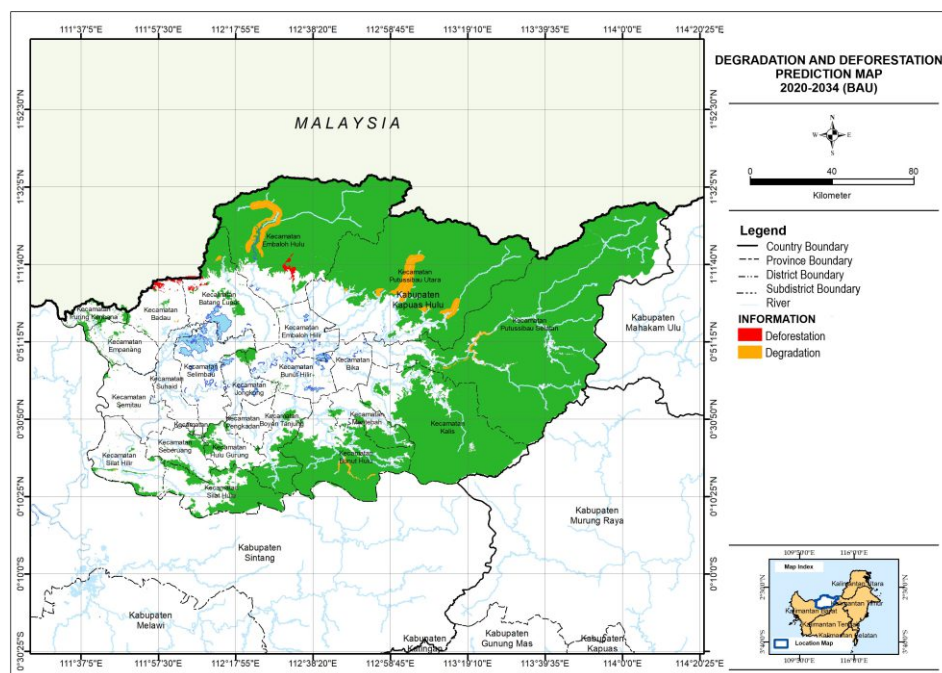


Figure 14. Deforestation and forest degradation prediction in BAU scenario

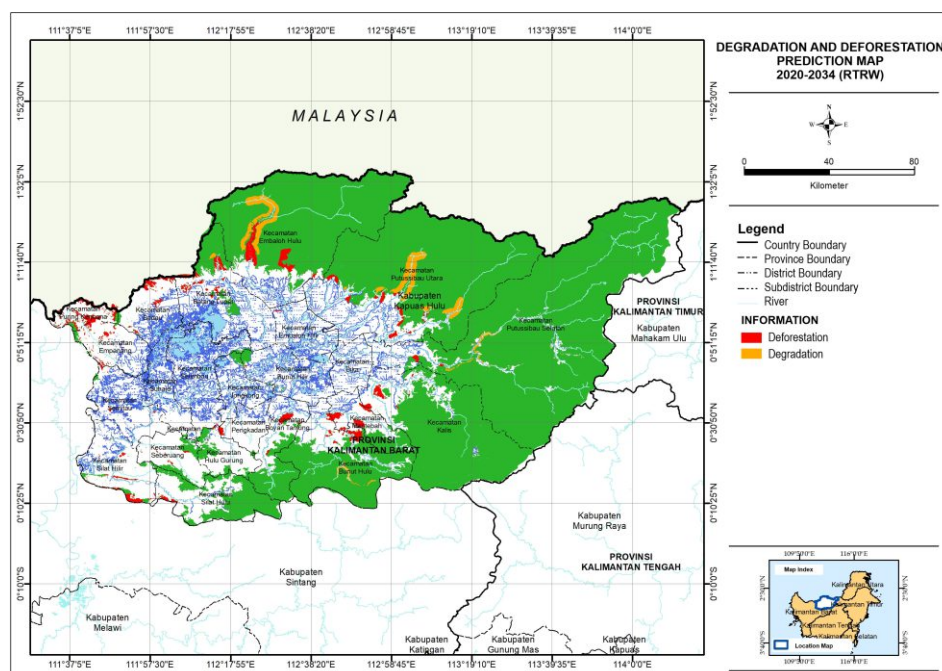


Figure 15. Deforestation and forest degradation prediction in RTRW Scenario

MANAGEMENT AND MONITORING STRATEGY

Management Strategy

Three strategies are recommended for managing HCV-HCS in BKDSKHBR: conservation, restoration, and sustainable production (Table 2)

Table 2. Recommendations for HCV-HCS management strategies

Recommendation	Management Recommendations
	Action
Sustainable Production	Sustainable agriculture training, farmer stimulus program (seedling procurement, incentives, etc.), mentoring, auction market program, sustainable market program, protection of RTE species, collaborative management, proposed RTRW revision.
Conservation	<i>Biodiversity</i> management monitoring training, encouraging area and institutional legality, collaborative management, area socialization, protection of RTE species, proposed RTRW revision, Decree Letter, Regional Regulation or Regent's Regulation on HCV - HCS management.
Restoration	Delineation of restoration areas, preparation of seedlings, planting, sustainable agroforestry development, protection of RTE species, collaborative management, proposed RTRW revision.
Cultural Site	Site area delineation, socialization, collaborative management, site repair and maintenance, cultural site determination, land acquisition in the site area, and proposed RTRW revision.

The management strategy focused only on the BKDSKHBR buffer and transition zones. HCV-HCS management in these two zones needs to be appropriately managed to ensure the sustainability of the BKDSKHBR core zone. As shown in Table 3, the area for strategy management is divided into APL and Non-APL areas. The distribution of management strategy areas in BKDSKHBR is presented in Figure 16 and Figure 17 (specifically in APL). The total management strategy area in BKDSKHBR is 2,113,171.86 ha and 721,116.39 ha is in the APL area.

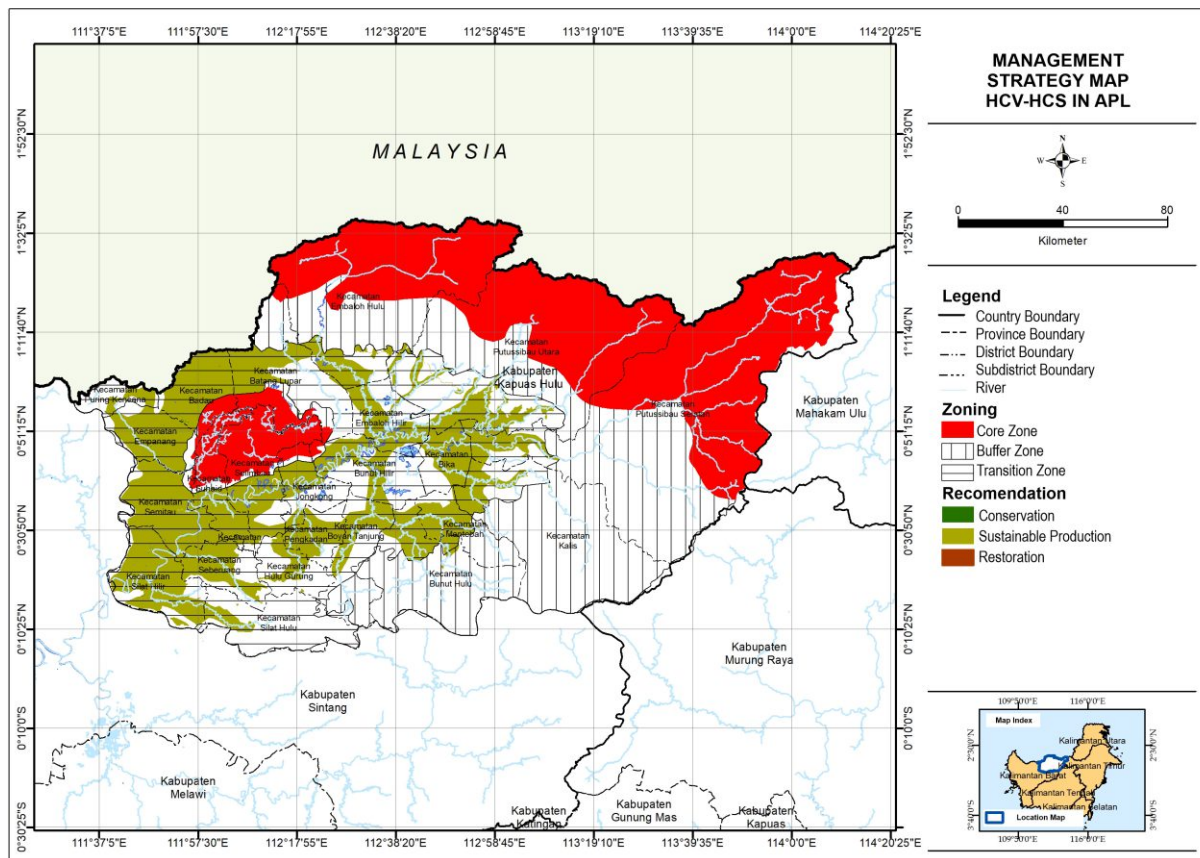
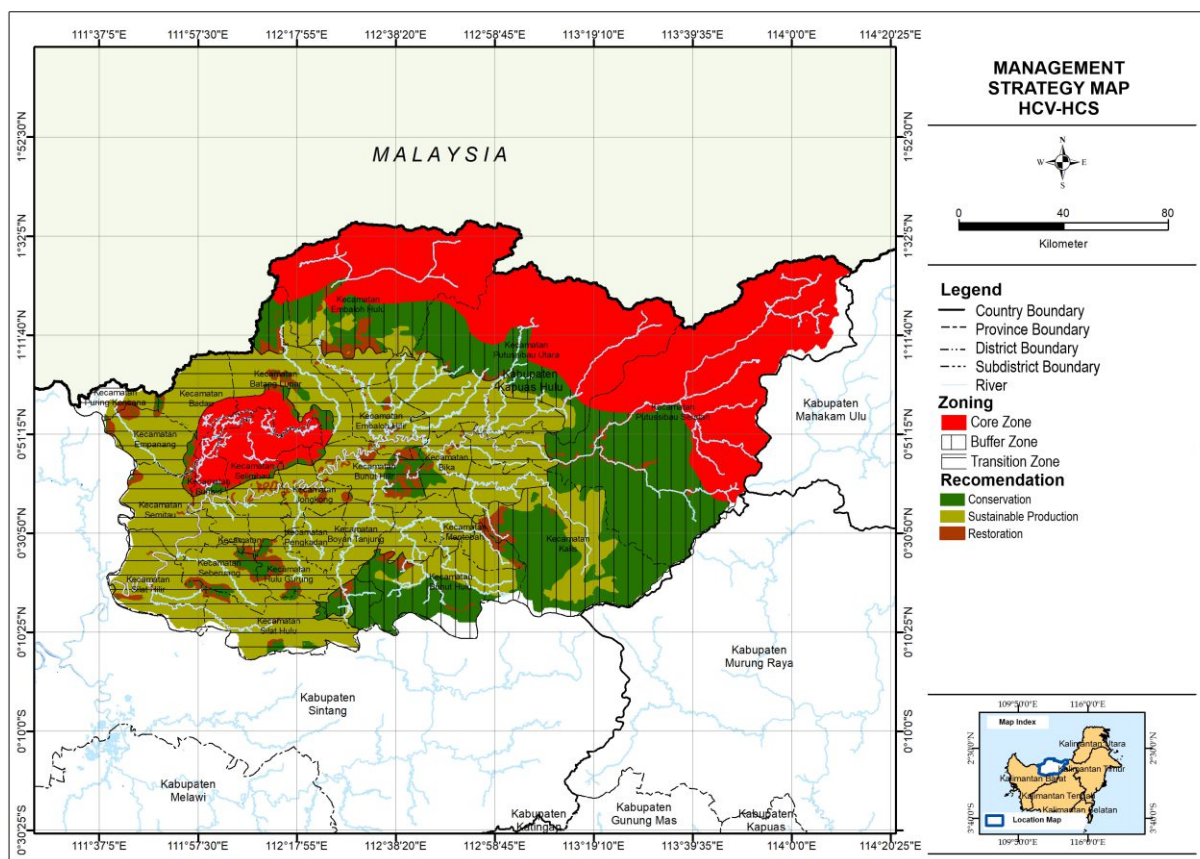


Table 3. Recommendations for HCV-HCS management strategies

Biosphere Reserve Zone	Management Strategy	Area (ha)		
		Non APL	APL	Total
Buffer Zone	Conservation	690,602.98	18.98	690,621.96
	Sustainable Production	179,638.48	1482.54	181,121.02
	Restoration	25,476.54		25,476.54
Transition Zone	Conservation	80,692.82	596.02	81,288.84
	Sustainable Production	389,524.22	719,018.85	1,108,543.07
	Restoration	26,120.43		26,120.43
Total Area (ha)		1,392,055.47	721,116.39	2,113,171.86

RTRW Zoning Revision

This review is based on the allocation of spatial patterns contained in the RTRW of Kapuas Hulu Regency for 2014-2034, which is currently in effect. The proposed area for RTRW zoning revision as No-Go Priority 1 in APL area is spread over several types of spatial patterns, namely settlement area, plantation, mining and agricultural areas, with a total area of 854.64 ha. The distribution of No Go 1 in the Cultivation Area (RTRW) includes 594.36 ha in the plantation area, 215.28 ha in the agricultural area, 40.99 ha in the mining area and 4.00 ha in the settlement area (Figure 18).

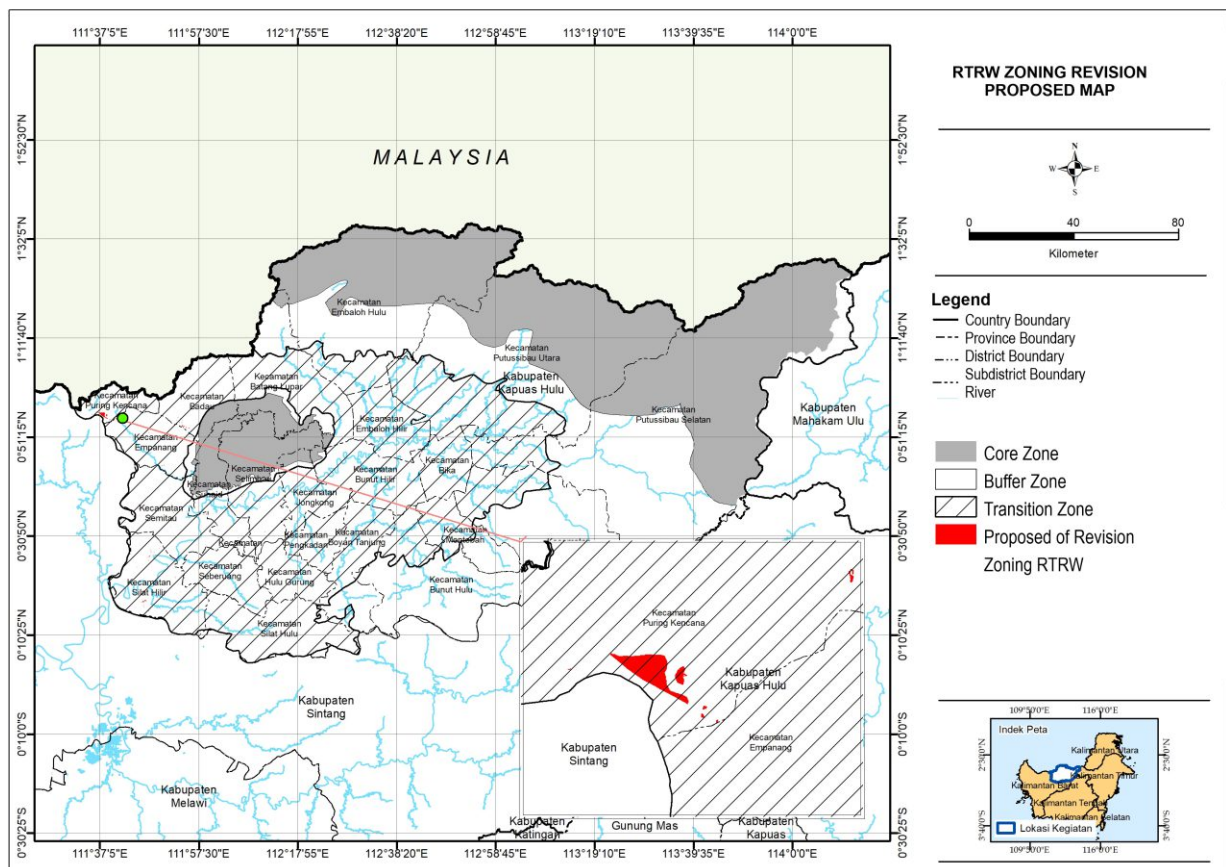


Figure 18. Map of proposed zoning revision of Kapuas Hulu Regency Spatial Planning 2014-2034

Adaptive Management

Area Distribution for HCV-HCS Adaptive Management

Considerations for the preparation of adaptive HCV-HCS management are species recommendations based on HCV-HCSA analysis and approached by Go No-Go Area analysis and management strategies. Go No-Go Area consists of No-Go Priority 1, No-Go Priority 2, Go Area. The resulting management strategy is conservation, restoration and sustainable production management (Table 4 and Figure 19)

Table 4. Area distribution for HCV-HCS adaptive management

Management Strategy	Biosphere Reserve Zoning	Go No -Go Area	Area (ha)
Buffer Zone	Conservation	No-Go Priority 1	456,448.20
		No-Go Priority 2	234,173.76
	Sustainable Production	Go Area	241.42
		No-Go Priority 2	166,531.84
		No-Go Priority 3	14,347.76
	Restoration	No-Go Priority 2	6,964.96
Transition Zone	Conservation	No-Go Priority 1	4,275.75
		No-Go Priority 2	77,013.09
	Sustainable Production	Go Area	155,852.39
		No-Go Priority 2	763,063.80
		No-Go Priority 3	189,626.88
	Restoration	No-Go Priority 2	2,838.79
		No-Go Priority 3	23,281.64
Total Area (ha)			2,113,171.86

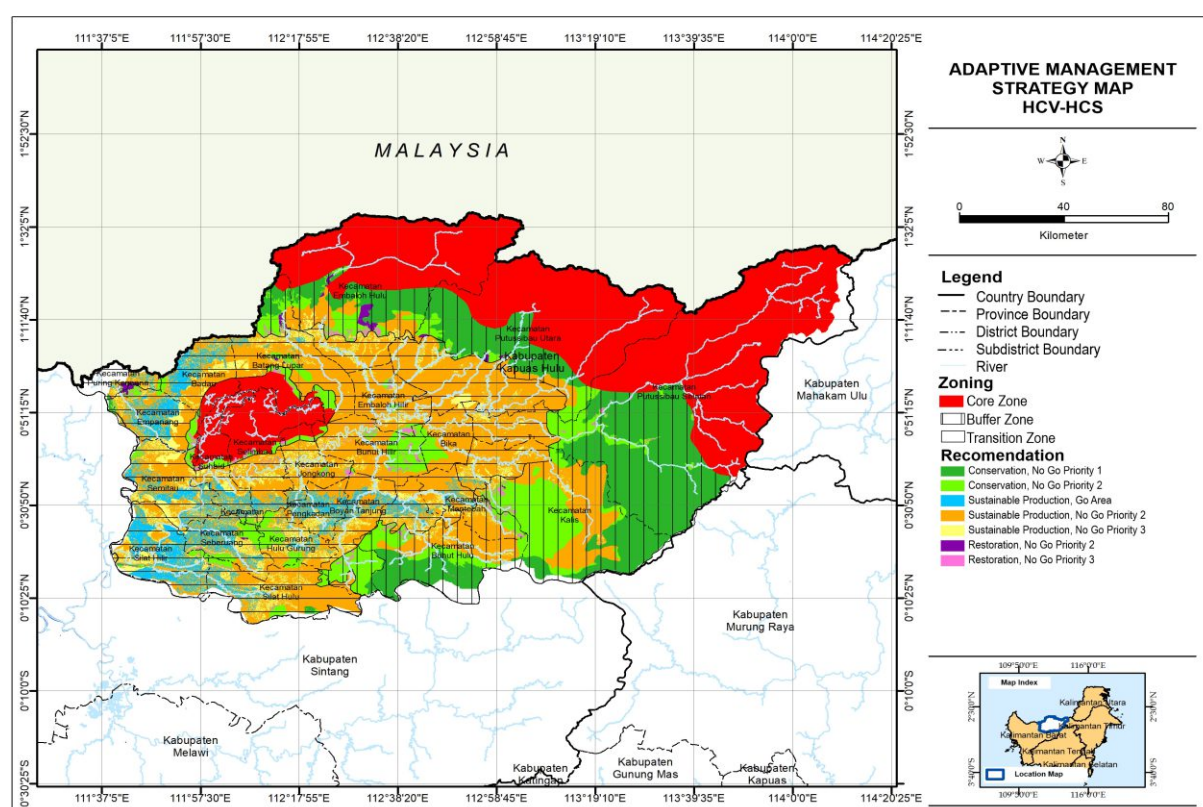


Figure 19. Area distribution for HCV-HCS adaptive management

Meanwhile, the distribution of Go and No Go Areas which are concession areas and are included in the APL area is presented in the following table (Table 5).

Table 5. Area distribution for Go and No Go Area (concession) at APL zone

Subdistrict	Status	Go No Go				Area (ha)
		No Go Priority 1	No Go Priority 2	No Go Priority 3	Go Area	
Badau	Concession	25.46	11,339.67	5,038.70	8,638.08	25,041.91
	Non Concession	12.75	14,787.97	2,638.82	6,331.19	23,770.74
Batang Lupar	Concession	0.45	13,675.77	5,367.49	848.30	19,892.01
	Non Concession	-	14,659.51	2,748.96	1,158.51	18,566.98
Bika	Concession	0.04	16,605.21	3,041.10	-	19,646.36
	Non Concession	-	19,212.26	2,443.88	0.93	21,657.06
Boyan Tanjung	Concession	0.09	6,646.25	2,273.06	3,771.05	12,690.45
	Non Concession	-	4,954.58	1,750.94	1,735.73	8,441.25
Bunut Hilir	Concession	0.09	13,009.09	3,269.27	4.70	16,283.16
	Non Concession	0.01	13,774.00	1,515.79	1.78	15,291.59
Bunut Hulu	Concession	4.20	10,413.04	4,395.62	4,190.41	19,003.28
	Non Concession	0.54	3,311.56	912.75	575.76	4,800.61
Embaloh Hilir	Concession	-	1,542.78	234.64	-	1,777.42
	Non Concession	0.22	24,952.64	5,392.74	0.32	30,345.92
Embaloh Hulu	Non Concession	4.86	17,992.21	8,642.43	97.79	26,737.28
Empanang	Concession	110.24	14,490.40	6,987.11	16,179.75	37,767.51
	Non Concession	5.76	8,863.39	1,388.12	510.12	10,767.40
Hulu Gurung	Concession	-	0.00	-	-	0.00
	Non Concession	1.18	6,289.32	5,301.71	1,836.49	13,428.71
Jongkong	Concession	1.06	5,370.14	4,534.56	571.73	10,477.50
	Non Concession	0.33	6,782.21	2,264.82	889.24	9,936.60
Kalis	Non Concession	15.47	16,658.78	4,156.49	802.38	21,633.13
Mentebah	Concession	-	2,392.63	1,044.75	102.61	3,539.99
	Non Concession	27.64	15,268.79	4,473.23	3,364.51	23,134.17
Pengkadan	Concession	2.58	6,220.45	2,671.51	8,527.71	17,422.25
	Non Concession	5.45	3,727.11	1,468.67	2,505.06	7,706.29
Puring Kencana	Concession	152.08	5,517.70	1,557.14	1,927.79	9,154.71
	Non Concession	215.37	8,142.10	1,469.22	2,766.80	12,593.50
Putussibau Selatan	Concession	-	140.97	-	-	140.97
	Non Concession	6.34	12,419.57	2,375.23	41.83	14,842.99
Putussibau Utara	Concession	-	147.72	116.30	-	264.02
	Non Concession	101.37	34,451.19	6,442.14	151.71	41,146.42
Seberuang	Concession	2.76	4,139.27	938.21	6,439.83	11,520.07
	Non Concession	-	8,167.11	3,436.23	9,521.50	21,124.84
Selimbau	Concession	0.75	5,588.30	2,071.23	2,281.93	9,942.21
	Non Concession	13.84	17,966.41	6,072.38	2,964.95	27,017.57
Semitau	Concession	17.39	14,676.19	11,521.14	9,707.63	35,922.34
	Non Concession	26.34	23,464.28	7,230.58	6,240.18	36,961.38
Silat Hilir	Concession	119.49	16,448.52	10,125.54	23,670.49	50,364.04
	Non Concession	43.06	10,470.79	4,749.03	9,441.17	24,704.05
Silat Hulu	Concession	0.10	3,928.85	1,108.42	4,108.38	9,145.75
	Non Concession	0.00	946.79	434.24	772.10	2,153.12
Suhaid	Concession	20.98	5,267.13	3,109.56	4,341.89	12,739.57
	Non Concession	3.38	4,530.46	1,840.69	942.67	7,317.19

Considerations for Developing HCV-HCS Adaptive Management: Species recommendations

Species recommendations are carried out as an effort to protect biodiversity in Indonesia by considering the results of the HCV-HCS analysis, recommendations for management strategies, land suitability, and projections of deforestation/degradation. The focus of commodities in Kapuas Hulu is natural rubber (*Hevea brasiliensis*) and oil palm (*Elaeis guineensis*).

Species Recommendations in the Conservation Management Strategy

The conservation management strategy is classified into No-Go Priority 1 and No-Go Priority 2. No-Go Priority 1 is an area that has a high HCV-HCS value, and conservation occurs naturally. Based on the Regulation of the Director General of KSDAE No: P. 12/KSDAE-Set/2015, natural succession depends on nature (without human action). For No-Go Priority 1 area that is under forest area concession permit and HGU, it is recommended to carry out several activities such as:

- 1) Increasing forest area cover to protect high HCV-HCS areas,
- 2) Application of forestry partnerships in production and protection forests, as well as conservation partnerships in conservation forests,
- 3) Monitor the fulfilment of certification requirements (PHPL and PHTL audits) in the work area, and
- 4) Promote the implementation of ISPO and RSPO by oil palm companies.

Meanwhile, in the No-Go Priority 1 area with APL status, it is recommended to carry out activities such as:

- 1) Increasing the forest cover to protect high HCV-HCS areas,
- 2) Application of forestry partnerships in production and protection forests, as well as conservation partnerships in conservation forests, and
- 3) Encouraging village regulations related to high HCV-HCS protection.

The No-Go Priority 2 area's conservation management strategy (shown in Figure 19) was further evaluated by referring to land suitability and classified into three types of land (mineral land, non-peat wetland, and peat land).

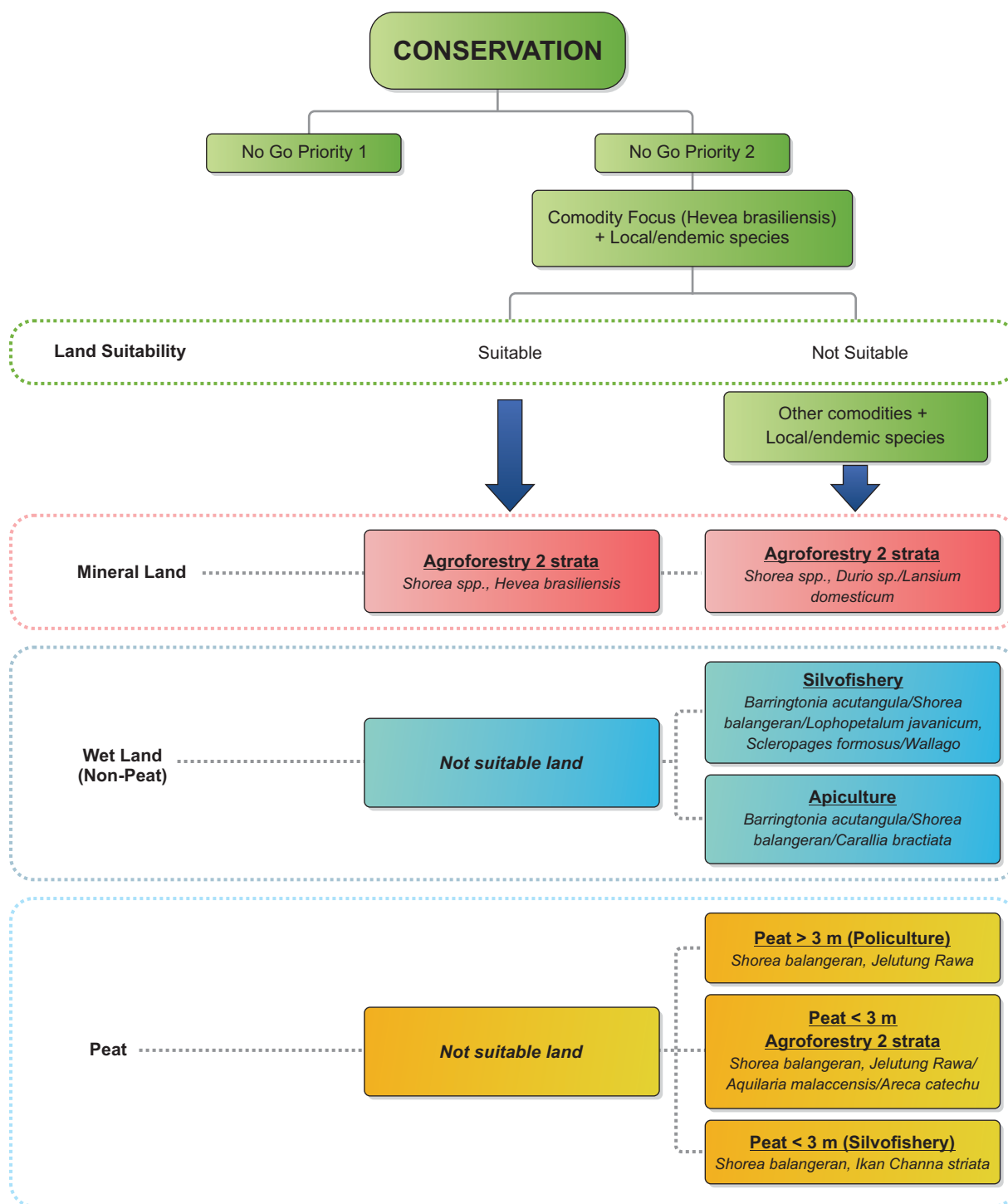


Figure 20. Species recommendations on conservation management strategies

Species Recommendations on Restoration Management Strategies

The restoration management strategy is classified into No-Go Priority 2 and No-Go Priority 3. No-Go Priority 2 is an area that has HCV-HCS values but is degraded, while No-Go Priority 3 is an area that has HCV-HCS values but has been converted (Figure 20).

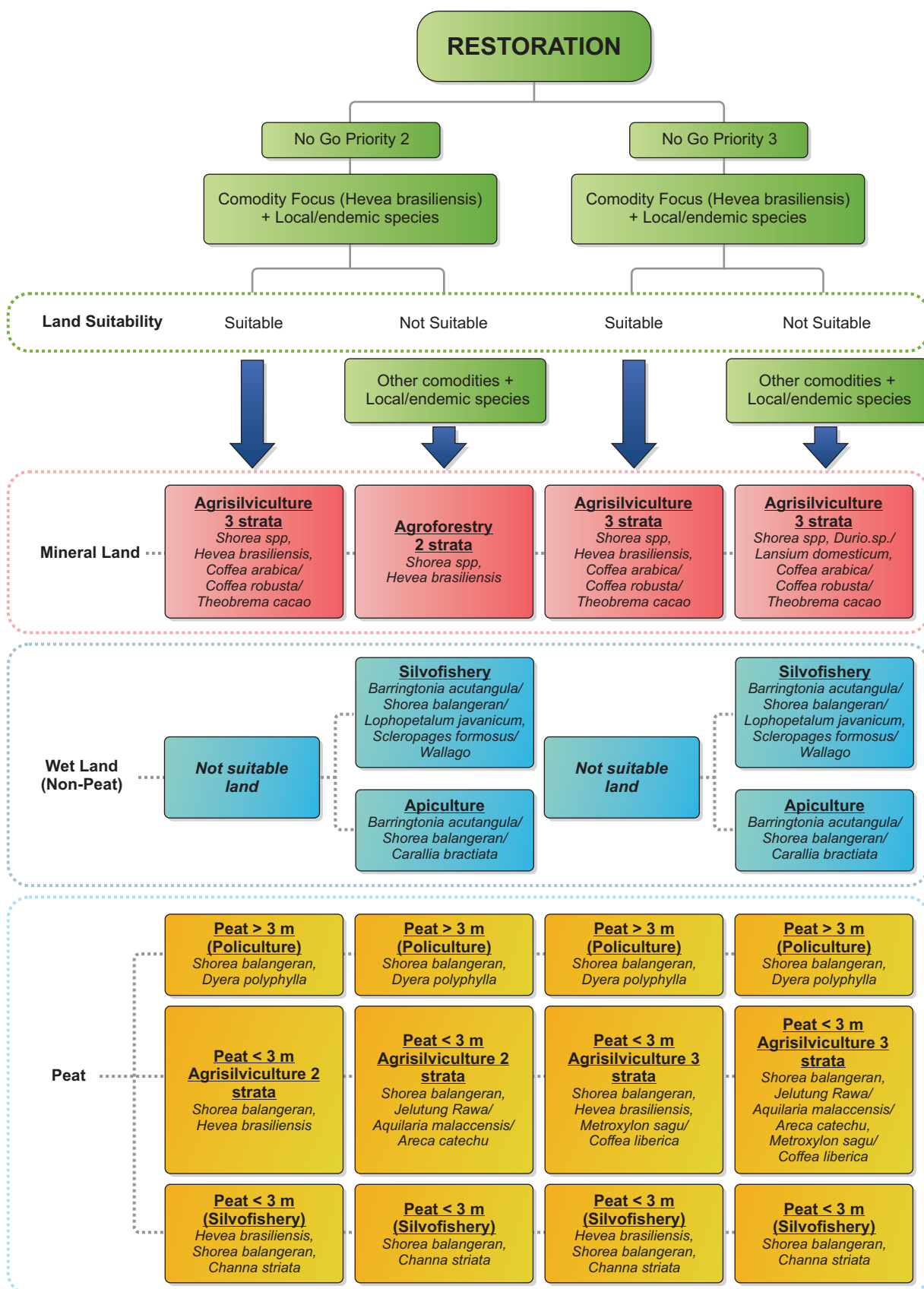


Figure 21. Species recommendations on restoration management strategies

Species Recommendations on Sustainable Production Management Strategies

The sustainable production management strategy is classified into No-Go Priority 2, No-Go Priority 3 and Go Area. A Go Area is an area that can, in accordance with community preferences, be converted (Figure 21).

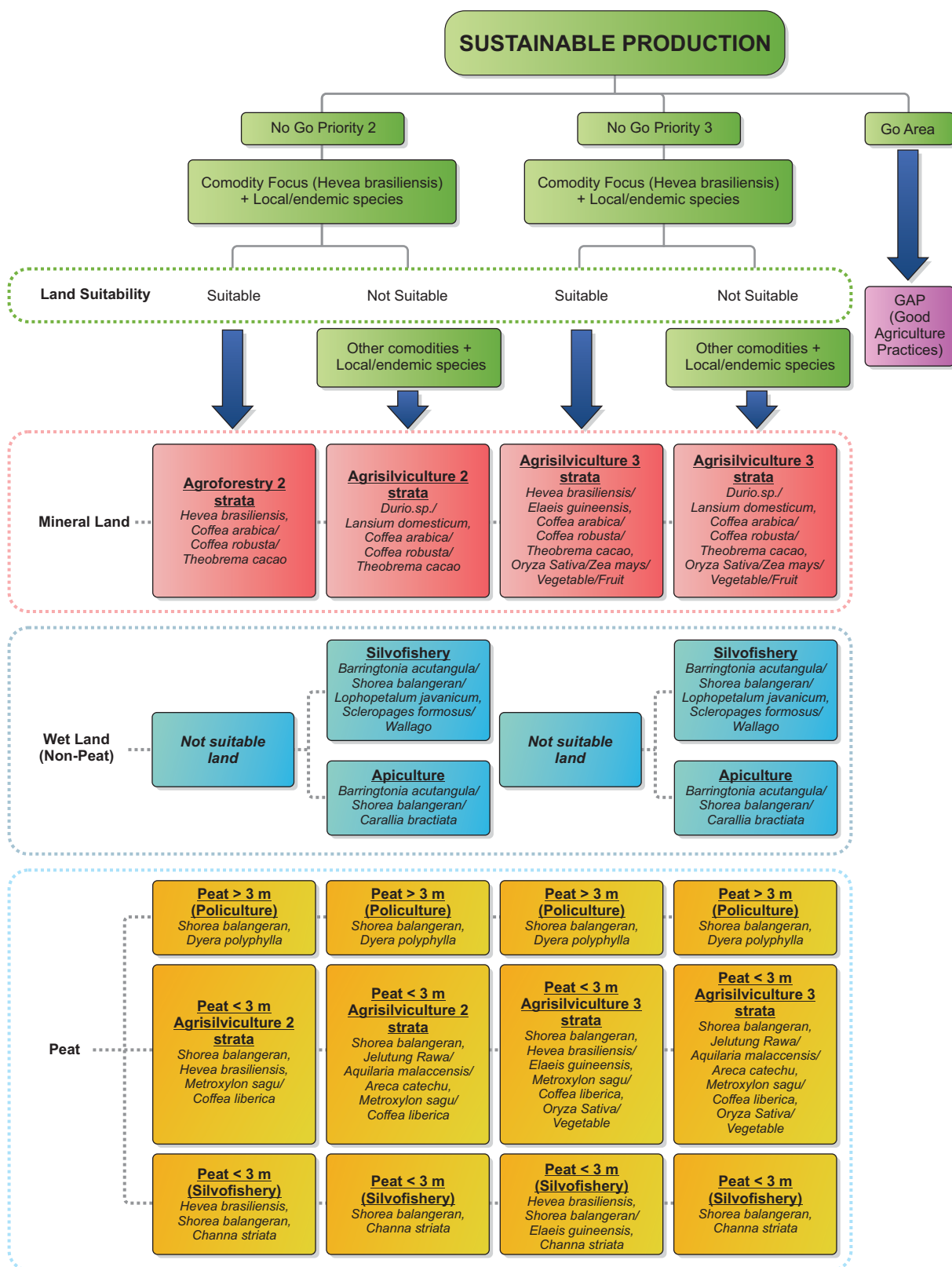


Figure 22. Species recommendations on sustainable production management strategies

Monitoring Strategy

The recommended monitoring strategy in BKDSKHBR is divided into three monitoring types: strategic, operational, and threat monitoring (shown on Table 6).

Table 6. Strategy for monitoring HCV-HCS in BKDSKHBR

Recommendation	Monitoring Recommendations		
	Strategic Monitoring	Operational Monitoring	Threat Monitoring
Sustainable Production	suitability, business feasibility, identification of RTE species populations,	Monitoring implementation management, collaborative monitoring	Monitoring threats to sustainable production, RTE species, smart patrol
Conservation	Monitoring of land area and cover, identification of RTE species populations,	Monitoring implementation management, collaborative monitoring	Monitoring of conservation area threats, RTE species, smart patrol
Restoration	Land cover monitoring, identification of RTE species populations, land cover monitoring	Monitoring implementation management, Collaborative monitoring	Monitoring of restoration area threats, RTE species, smart patrol
Cultural Site	Monitoring the use of the existence of cultural sites, monitoring land cover	Monitoring implementation management, collaborative monitoring	Monitoring the threat of cultural sites, smart patrol



diimplementasikan oleh:



**ASSESSMENT OF
HIGH CONSERVATION VALUE (HCV)
HIGH CARBON STOCK (HCS) AND
MANAGEMENT MONITORING STRATEGIES IN
BETUNG KERIHUN DANAU SENTARUM
KAPUAS HULU BIOSPHERE RESERVE
(BKDSKHBR)**