



Access Restrictions Analysis in Protection Block of Bukit Rimbang Bukit Baling Wildlife Reserve, Riau, Sumatra.



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Implemented by:



Executive Summary

Bukit Rimbang Bukit Baling Wildlife Reserve (BRBB WR/SM BRBB) in Riau Province, Indonesia is managed under the Block Management System, and the reserve is divided into: Protection Block, Utilization Block, Rehabilitation Block, Special Block and Religious, Cultural and Historical Block. About 3,278.67 Ha of mixed-rubber plantations are located in the Protection Block, and access restrictions in the current Protection Block has affected more than 90% of communities in five villages inside SM BRBB (In Batu Sanggan, Tanjung Beringin, Gajah Bertalut, Aur Kuning and Terusan villages) as village communities are still using and depend on the mixed-rubber plantation areas in the protection block.

To understand the impact of access restrictions in the Protection Block of SM BRBB, an analysis of access restrictions was performed adopting the IUCN Guideline for mitigating impacts of access restrictions. Analysis of access restrictions findings include:

Impacts of access restrictions, especially in utilizing mixed-rubber plantations in the Protection Block include 1) potentially decrease communities' income, especially in five villages where part of their mixed-rubber plantations are within the protection block, 2) Reduce/loss of access for village communities in utilizing other natural resources, 3) social conflicts between village communities with the Wildlife Management Authority, and 4) High transaction and management costs to local communities associated with establishing community projects.

The effectiveness of access restrictions in the Protection Block, which objectives are to protect the remaining population of Sumatran Tiger and other wildlife as well as to protect water resources, is limited to existing spatial data analysis which does not include participatory mapping, and limited compliance of management and monitoring activities on the ground.

Adaptive strategies to mitigate the impact of access restrictions include but are not limited to Reviewing/adjusting Protection Block Boundaries, optimizing rubber plantation in Special and Utilization Blocks, inclusion of customary law, developing compensation and alternative livelihoods and developing inclusive stakeholder management and partnerships, especially with BBKSDA Riau as management authority of SM BRBB.

Based on the above findings, some recommendations have been drawn as follows:

To ensure the effectiveness of access restrictions in the Protection Block of SM BRBB, participatory mapping and management and monitoring compliance need to be conducted; and adaptive strategies to mitigate the impacts of access restrictions need to be implemented, including: Reviewing/adjusting Protection Block Boundaries, optimizing rubber plantation in Special and Utilization Blocks, inclusion of customary law, developing compensation and alternative livelihood, and developing inclusive stakeholder management and partnerships.

To develop compensation schemes for the affected communities, an economic valuation needs to be conducted based on a valuation of expected losses, and socio-economically and culturally suitable and consider a range of options for in-kind, non-monetary and monetary compensation, as appropriate.

Development of alternative livelihood needs to be carefully tailored to improve communities' income as well as to reduce local threats to species, habitats or resources of conservation concern.

Formal agreement between the community (village) with BBKSDA Riau through a conservation agreement/partnership to accommodate community needs and compensation. The conservation partnership can be developed based on the Director General of Natural Resources and Ecosystem Conservation Regulation Number P.6/KSDAE/SET/Kum.1/6/2018 concerning Technical Instructions for Conservation Partnerships in Natural Reserve Areas and Nature Conservation Areas.

Table of Content

Executive Summary.....	ii
Table of Content	iv
I. Introduction	1
1.1. Background and Context.....	1
1.2. Objectives.....	2
1.3. Method	2
2. The Nature and Scope of Access Restriction	3
2.1. Block Management System in SM BRBB.....	3
2.2. Rubber Plantation in Protection Block.....	5
2.3. Communities Affected by Access Restrictions.....	7
3. Challenges in Implementing Access Restrictions Policy	9
4. Impacts of Access Restrictions and Mitigation Measures	10
5. Effectiveness of Access Restrictions	11
5.1. The Objective of Access Restrictions	12
5.2. Protection Block Boundaries.....	12
5.3. Management and Monitoring Compliance	12
6. Strategies to Adapt Access Restrictions.....	13
7. Conclusions and Recommendations	16
7.1. Conclusions	16
7.2. Recommendations	16
References:	17

I. Introduction

1.1. Background and Context

Protected areas are designated geographical spaces that are recognized, dedicated and managed through legal or other effective means to achieve the long-term conservation of nature with associated ecosystem services and cultural values. Properly managed protected areas are the epicentre for sustaining the very ecosystem services on which mankind is dependent for survival.

Fundamental characteristics that determine a region's inherent conservation value are vulnerability, irreplaceability, and contribution towards global ecosystem services. Protected areas are the main tool for nature conservation and have rapidly grown during the last few decades. They provide the core efforts to protect the world's threatened species and are increasingly recognized as essential providers of ecosystem services and biological resources. However, the establishment of protected areas can conflict with human rights, equity, development needs and poverty reduction, if local people are displaced or their access to natural resources of livelihood is restricted by protected area regulations.

Bukit Rimbang and Bukit Baling Wildlife Reserve (BRBB WR/SM-BRBB) is a protected area in Riau Province, Sumatra with an area of 141,226.25 hectares that has unique characteristics, namely lowland rainforest with high biodiversity. SM BRBB is managed by the Ministry of Environment and Forestry (MoEF) through the BKSDA Riau as the management authority/technical implementation unit of the conservation area. This area is an important habitat for several endangered wild animals, including the Sumatran Tiger (*Panthera tigris sumatrae*) which is in the Critically Endangered category according to the IUCN Red List and is protected by the Government of the Republic of Indonesia. The Bukit Rimbang Bukit Baling Wildlife Reserve area is unique as there are communities and villages in the area that existed before the designation of this area.

The management of SM BRBB is divided into five management blocks: (1) protection blocks covering 117,897.37 hectares (83.48%); (2) utilisation blocks covering 157.73 hectares (0.11%); (3) rehabilitation blocks covering 5,822.32 hectares (4.12%); (4) religious, cultural, and historical blocks covering 0.33 hectares (0.0002%); and (5) special blocks covering 17,348.50 hectares (12.28%). The Special block is to accommodate the presence of villages and settlements within the wildlife reserve. However, many people in Bukit Rimbang Bukit Baling Wildlife Reserve depend on rubber for their livelihoods. Some community-owned rubber plantations (about 3,000 Ha) are located in protection block where community economic activities are prohibited by present regulations. As a result, the community's movement and access to their rubber plantation are restricted, and this situation might impact the locals' livelihoods. Ignoring political factors, socio-economic demands and the well-being of the people within and adjacent to protected areas can erode progress towards biodiversity and sustainability targets.

Access restrictions in these protected areas is a complex issue that requires a comprehensive and participatory approach that considers the impacts of access restrictions on local communities, the effectiveness of the access restrictions, and alternative approaches to achieving the objectives of the protected area. The IUCN Environmental and Social Management System (ESMS) has developed a Guidance Note on involuntary settlement and access restrictions. The Guidance note includes: 1) Access Restrictions Mitigation Process Framework and Guidelines and 2) Action Plans to Mitigate Impacts from Access Restrictions. This access restrictions analysis follows the IUCN Guidance for access restrictions, especially for rubber farmers in utilizing natural resources in Bukit Rimbang and Bukit Baling Wildlife Reserve (SM-BRBB), in Riau Province, Sumatra.

1.2. Objectives

This report provides restrictions analysis especially for rubber farmers in utilizing natural resources in Bukit Rimbang and Bukit Baling Wildlife Reserve (BRBB WR/SM-BRBB), with the objectives as follows:

1. To identify the impacts of access restrictions especially on rubber farmers where their rubber plantations are within the protection block,
2. to evaluate the effectiveness of access restrictions, and
3. to find alternative approaches to access restrictions that may be more effective in achieving the objectives of the protected area while minimizing negative impacts on local communities.

1.3. Method

The framework of restrictions analysis for rubber farmers in utilizing natural resources in Bukit Rimbang and Bukit Baling Wildlife Reserve (SM-BRBB) adopts IUCN Guidelines for Access Restrictions Mitigation¹, as follows:

¹ 2019. IUCN Access Restrictions Mitigation Process Framework. IUCN.

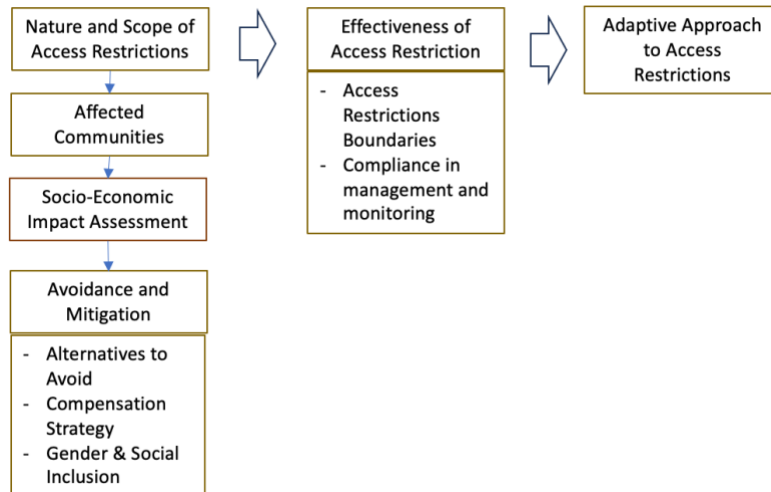


Figure 1. Framework Analysis of Access Restrictions

Access restrictions analysis for rubber farmers in utilizing natural resources in Bukit Rimbang and Bukit Baling Wildlife Reserve (SM-BRBB) was conducted through desk study and FGD with relevant stakeholders. The current analysis does not use the IUCN Natural Resource Matrix because it is not relevant to the access restriction issues. Therefore, we use the IUCN Guideline as mentioned above.

2. The Nature and Scope of Access Restriction

2.1. Block Management System in SM BRBB

The Bukit Rimbang Bukit Baling Wildlife Reserve (SM BRBB) had an area of 136,000 Ha when it was designated as a wildlife reserve based on the Riau Governor's Decree No. Kpts 149/V/1982 dated June 21, 1982. The area has changed to 141.226,25 Ha since 2014 based on The Ministry of Forestry Decree No. SK.3977/Menhut VII/KUH/2014. In addition, to ensure a better management of the ecosystem function, the area has also been designated as a Conservation Forest Management Unit (KPHK) based on the Ministry of Forestry & Environment No. SK.468/Menlhk/Setjen/PLA.0/ 6/2016. SM BBRB is located in the regencies of Singigi and Kampara, Riau Province.

SM BRBB is an important habitat for several endangered wild animals, including the Sumatran Tiger (*Panthera tigris sumatrae*) which is in the Critically Endangered category according to the IUCN Red List and is protected by the Government of the Republic of Indonesia. The Wildlife Reserve is also part of the Tiger Conservation Landscape. The habitat for Sumatran Tiger in SM BRBB varies from secondary and primary forests with various elevations.

The Bukit Rimbang Bukit Baling Wildlife Reserve area is unique as there are communities and villages in the area that existed before the designation of this area. The local and traditional communities have been inhabiting the area for hundreds of years. In general, they strongly

depend on the forest for their livelihood and adhere to customary (*adat*) law and system which has many complementarities with wildlife protection and natural resources management.

There are 14 villages bordering and/or within the SM BRBB, namely Pangkalan Kapas Village, Ludai Village, Dua Sepakat Village, Sungai Santi Village, Kota Lamo Village, Tanjung Belit Village, Muara Bio Village, Batu Sanggan Village, Tanjung Beringin Village, Gajah Bertalut Village, Aur Kuning Village, Tarusan Village, Subayang Jaya/ Salo Village and Pangkalan Serai Village. Communities in and around the SM BBRB area generally earn a livelihood that is closely related to natural resources in their environment. One of the main livelihoods is collecting rubber products from semi-natural rubber plantations located both in and around the wildlife reserve.

SM BRBB has been affected by anthropogenic threats that tend to escalate such as habitat degradation and conversion to agricultural plantations, mainly oil palm and/or extension of rubber plantations. To some extent, the poaching of tigers and prey species persists over time. Illegal logging has massively been occurring in the area due to the impact of limited livelihood alternatives and awareness of locals meanwhile, deteriorating rubber prices as the main commodity for locals forced the community to search for other resources from the forests

To ensure sustainable management of the SM BRBB and concerning the Directorate General for Natural Resource and Ecosystem Conservation Decree No. P. 11/KSDAE/SET/ KSA.0/9/2016 on Technical Guideline for Zonation and Block Management Planning in Conservation Area, The Nature Conservation Agency (BBKSDA) Riau in 2017 adopted a Block Management System in SM BBRB. This block management system is designed based on two criteria: 1) ecological sensitivity i.e. regarding the ecological function and animal habitats of a protected area; and 2) Social sensitivity i.e., regarding the vulnerability of communities. There are five blocks in SM BBRB:

1. Protection blocks covering 117,897.37 hectares (83.48%);
2. Utilisation blocks covering 157.73 hectares (0.11%);
3. Rehabilitation blocks covering 5,822.32 hectares (4.12%);
4. Religious, cultural, and historical blocks covering 0.33 hectares (0.0002%); and
5. Special blocks covering 17,348.50 hectares (12.28%). The Special block is to accommodate the presence of villages and settlements within the wildlife reserve

Access restrictions, especially in the Protection Block include restriction to access natural resources, physical access and access to social services. The current Protection Block includes mixed-rubber plantations and some NTFPs that are commonly utilized by local village communities. In addition, based on participatory land-use planning facilitated by KERABAT consortium, some customary village boundaries also overlap with the protection Block²

² KERABAT Consortium. 2023. Report on Participatory Land Use Planning.

2.2. Rubber Plantation in Protection Block

Rubber is the main economic activity of all the villages adjacent to and inside the SM BRBB. almost 95% of rural communities depend on the revenue generated from the sales of natural rubber³. Rubber is managed at a household level and main source of income in at least 7 villages as the target of the program: Tanjung Belit, Muara Bio, Batu Sanggan, Tanjung Beringin, Gajah Bertalut, Aur Kuning and Terusan.

Rubber trees grow in hilly places with steep slopes, widely distributed among the forests in SM BRBB. Rubber was planted and allowed to grow naturally with minimum spacing and maintenance and most rubber trees are 20-30 years old. Each family in the community along the Subayang River has 1- 2 hectares of rubber agroforest in their village areas on the forest's border and areas of the protection block of SM BRBB. However, the existing rubber plantation still does not have an optimum production because it has been managed conventionally with low material genetic (seedling) sources, limited maintenance and limited post-harvest treatment. This condition is reflected in seven key villages of the Integrated Tiger Habitat Conservation Program (ITHCP) (See *Table 1* and *Figure 1* below).

Table 1. Villages with Rubber Plantation in SM BRBB.*

Village	No. of Household	Size of customary village land (Ha)	Customary village land in Special Block (Ha)	Customary village land in Utilization Block (Ha)	Customary village land in Protection Block (Ha)	Rubber Plantation inside the Protection Block (P), Utilization Block (U), and Special Block (S) in Ha	Percentage of community depending on mixed rubber plantation
Tanjung Belit	241	2,748.43	1,253.29	-	-	7,348.50 (S)	40% of 241 Households
Muara Bio	45	867.89	225.39	8.84	-	5,930 (U)	95% of 45 Households
Batu Sanggan	118	2,370.41	1,321.97	26.01	1,767.142	984.06 (P) 1,612.02 (U) 4.0 (S)	95% of 118 Households
Tanjung Beringin	162	2,370.41	1,321.97	26.01	1,013.98	619.70 (P) 5.85 (U) 1,187.67 (S)	95% of 162 Households
Gajah Bertalut	137	2,283.53	2,189.74	16.63	678.65	548.71 (P) 1,246 (U) 2,055.26 (S)	95% of 137 Households

³ YAPEKA. 2023. Final Report Rubber Feasibility Study to Support Improving Community Livelihood in Bukit Rimbang Baling Wildlife Reserve.

Village	No. of Household	Size of customary village land (Ha)	Customary village land in Special Block (Ha)	Customary village land in Utilization Block (Ha)	Customary village land in Protection Block (Ha)	Rubber Plantation inside the Protection Block (P), Utilization Block (U), and Special Block (S) in Ha	Percentage of community depending on mixed rubber plantation
Air Kuning	164	2,388.61	1,862.34	35.57	482.52	361.82 (P) 9,806 (U) 1,496.64 (S)	90% of 164 Household
Terusan	97	2,480.35	1,202.65	20.95	1,242.26	764.38 (P) 6.81 (U) 761.44 (S)	95% of 97 Households
Total						3,278.67(P) 18,606.68 (U) 12,853.51 (S)	

Note: * These seven villages are key villages selected for ITHCP project.

A total of around 3,278.67 Ha or 9.4% of rubber plantations occur in the Protection Block of SM BRBB. However these rubber plantations are located in customary village land, and there are also overlapped areas between protection block and customary village land (See Figure 1).

The rubber commodity was a superior product for farmers. A few years ago (in 2021), when the selling price of rubber was high, ranging from IDR 18,000 to IDR 20,000/Kg and IDR 8,000-9,000. But currently, the price of rubber sap/latex has greatly decreased ranging from IDR 6.000,00 - IDR 7.000/kg. Each family can produce 150-240 kg/HH/month, however, the rubber production can drop by up to 50%. During the rainy season. As a result of the declining price of rubber sap/latex, communities have started looking for alternative economic income in the forest, such as picking up seasonal forest fruits such as *petai*/bitter bean, *jengkol*, and durian and agarwood. The value of the agarwood is relatively high, with the lowest price is IDR 200 K up to the highest with super quality reach IDR 10 M per Kg. In addition, extractive activities by local communities, included *illegal logging* and hunting of animals also occur to fulfil their needs as a result of a declining economic level.

In Tanjung Belit, as a village that is the entry point to SM BRBB and community are more complex, while the price of rubber continues to decline and the price of basic household necessities continues to rise, many people have switched to rubber as their original commodity and are now starting to open up new land to become oil palm plantations. There are at least 145-169 HH clearing land for oil palm with an area of 1-3 hectares/HH. There has been a significant increase in oil palm plantations from 40% (2021) to 60%-70% (2023) and it has become a conservation issue as Tanjung Belit Village is adjacent to SM BRBB.

2.3. Communities Affected by Access Restrictions

Five (In Batu Sanggan, Tanjung Beringin, Gajah Bertalut, Aur Kuning and Terusan)of the seven villages in SM BRBB have mixed rubber plantations in the Protection Block, and only two villages (Tanjung Belit and Muara Bio) which have mixed rubber plantation only in the Special Block. The total population of the five villages is 2,424 individuals (1,244 male and 1,180 female) or about 678 households⁴. About 90% of the population of the five villages depends on mixed rubber plantations, including the rubber plantations that occur in the protection block that is subject to access restrictions.

⁴ Source: *Kampar Kiri Hulu Subdistrict, Feb.2023*

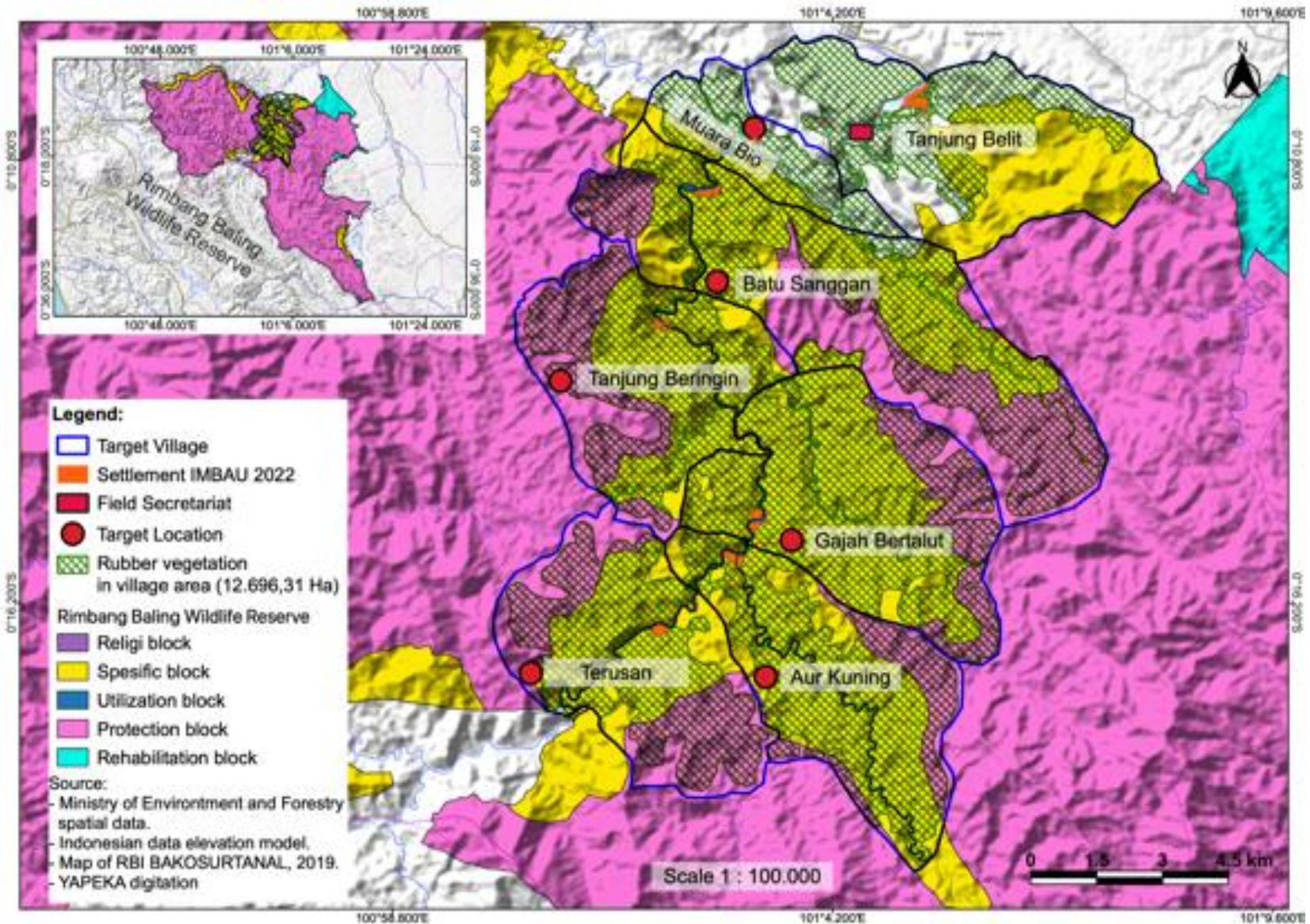


Figure 2. Rubber Plantation near 7 villages in Bukit Rimang Bukit Baling Wildlife Reserve.

3. Challenges in Implementing Access Restrictions Policy

Utilization of natural resources by communities, particularly the existing rubber plantations that occur within the Protection Block and are still being utilized by rubber farmers is subject to access restrictions since in the protection block of SM BRBB only some activities are allowed, as follows⁵:

1. Inventory and monitoring activities of biological natural resources and their ecosystems, especially important endangered animals, Sumatran tigers and other important animals as well as animals that are their food source;
2. Research and scientific development activities, especially on the potential for biodiversity and its ecosystem as well as the potential for environmental services found in the area;
3. Area protection and security activities, especially activities that can pose a threat to the preservation of endangered animals and their habitats, such as illegal hunting, land clearing and forest fires as well as illegal logging activities;
4. Habitat and population development and improvement activities to maintain the existence of wildlife populations;
5. Installation of forest protection signs, protection of animals and plants and their ecosystems;
6. Non-permanent construction of facilities and infrastructure that are limited to education, research and management activities;
7. Carry out boundary maintenance for protection block locations bordering area boundaries;
8. Educational activities and increasing awareness of nature conservation through various activities with strict and consistent regulations and supervision and assistance from managers so as not to have an impact on the habitat of protected animals and flora. In this case, education and increasing awareness of nature conservation can be collaborated with the objectives of research and monitoring of animals and plants in this protection block.

The Protection Block in SM BRBB is designated based on the following considerations:

1. Representativeness of the natural lowland rainforest ecosystem which has a protective function, especially as a concentration area for Sumatran tigers (*Panthera tigris sumatrae*) and other protected animals including Wild Boar (*Sus scrofa*), Sambar Deer (*Rusa unicolor*), Sumatran Serow (*Capricornis sumatraensis*) and Southern Pig-tailed Macaque (*Macaca nemestrina*).
2. The area has a low level of threat and human activity.
3. The area has a slope of more than 25% (steep - very steep). Steep slopes are the reason why protection blocks are needed as a fortress to protect springs whose sustainability needs to be fostered as a means of regulating water management, and preventing the dangers of flooding, landslides and erosion.

⁵ BBKSDA Riau. 2023. Block Management of Bukit Rimbang Bukit Baling Wildlife Reserve.

Implementing access restrictions policies in protected areas can be challenging due to various factors:

- Human activities within the Protection Block make it difficult to implement access restriction policies without negatively impacting local communities. Local communities still need access to maintain and harvest the rubber plantation in the Protection Block.
- Other challenges of access restrictions also can conflict with human rights, equity, development needs, and poverty reduction, if local community access to natural resources of livelihood is restricted by protected area regulations, they may oppose the Protection Block concept and management staff, provoking conflicts at the expense of achieving conservation goals.
- In addition, Block Management Systems often have limited resources, including funding, staff and equipment. This can make it difficult to implement access restriction policies that require significant resources to enforce.

4. Impacts of Access Restrictions and Mitigation Measures

While access restrictions in the Protection Block of SM BRBB has positive impacts on natural ecosystems and biodiversity - including the populations of the Sumatran Tiger and other wildlife habitats, protected water resources and improved law enforcement in the SM BRBB, the Protection Block also cause some negative impacts, especially for village communities who are utilizing natural resources in the Protection Block. The table below describes negative impacts and mitigation measures to minimize the impacts.

Socio-Economic Impact	Mitigation	Note
<p>Decrease communities' income. With the assumption of the price of rubber between IDR 5.000,00/kg in low quality and one family/household can produce 150 kg/HH/month, each household might loss:</p> <p>➔ 150 kg/month x 12month x Rp 5,000 = Rp. 9,000,000 gross income/Household annually.</p> <p>Higher cost compared to revenue from rubber production as only communities can only utilize rubber trees within utilization and special blocks.</p>	<ul style="list-style-type: none"> - Rubber tree regeneration to increase rubber productivity and production. - Train communities/rubber farmers to enhance community capacity in rubber harvesting and post harvesting techniques to increase rubber productivity. - Develop rubber farmers-trader association for rubber commodities and connecting to microfinance scheme (e.g. BUMDES/KUR) - Strengthen rubber farmers organizations and value chain i.e. through cooperatives/ BUMDES, rubber-trader association. 	<p>BBKSDA has encourage villagers to optimize rubber plantation within the special and utilization blocks (total of 17,000 Ha). However, the communities' desire to increase rubber productivity and quality depends on the price of rubber in the market.</p>
<p>Limited support for rubber farmers from the local government since the rubber plantations are considered</p>	<ul style="list-style-type: none"> - Facilitate discussion between BBKSDA, local government and other stakeholders for better 	<p>BBKSDA has initiated some discussions with the local government</p>

Socio-Economic Impact	Mitigation	Note
within the conservation area and protection block, while the conservation area and protection block are managed under BBKSDA.	coordination of support for rubber farmers.	about the block system and possibility to review the block system.
Reduce/loss access for village communities in utilizing other natural resources such as agarwood and meranti mix-planted with rubber trees that they have planted or other non-timber forest products (TNFP) such as rattan, forest fruits, and bee honey for alternative income; and this situation can lead to impact to livelihoods and well-being of village communities who depend on these resources.	- Develop a compensation scheme and alternative livelihoods such as NTFPs, and Ecotourism.	Limited mitigation measure has worsen the situation that more illegal encroachment to the forest area.
Sense of injustice felt by community when local villagers are being arrested when entering/conducting prohibited activities in the Protection Block; Access restrictions may also cause conflicts between village communities with the Conservation Forest Management Unit as community may oppose the Protection Block concept and management staff.	- Provide awareness and clarity on the law and regulation on access restrictions to village communities. - Improve capacity of Conservation Forest Management Unit staff on conflict resolution techniques, and - Develop Grievance Redress Mechanism (GRM) to ensure that grievances from communities and stakeholders are well responded and managed in a transparent and timely manner.	- Principle on Free Prior and Informed Consent (FPIC) need to be applied in providing awareness and clarity on the law and regulations.
High transaction and management costs to local communities associated with establishing community projects, which becomes an issue when, as is all too often the case, they fail.	- Ensure efficiency and effectiveness of community projects, as well as its sustainability and support to conservation objectives.	High transaction and management cost can be caused by elite capture and/or bias in the distribution of benefits of community projects.

5. Effectiveness of Access Restrictions

The effectiveness of access restrictions in the Protection Block is measured qualitatively by reviewing the objectives of access restrictions, the process of designating the Protection Block and management and monitoring compliances.

5.1. The Objective of Access Restrictions

The objective of access restrictions particularly in the Protection Block of SM BRBB is to protect the remaining population of Sumatran Tiger and other wildlife as well as to protect water resources. This objective is stated in the Block Management System of Bukit Rimbang Bukit Baling Wildlife Reserve.

Below are some issues that can be a baseline of measurement of the effectiveness of access restrictions in the Protection Block:

5.2. Protection Block Boundaries

Access restrictions particularly for village communities in utilizing existing mixed rubber plantations may occur as a result of imposing the Protection Block in SM BRBB. The Protection Block is delineated based on two criteria: ecological sensitivity and Social sensitivity; and by conducting spatial multi-criteria analysis based on existing spatial data and buffering some data including 'community management space and land use'⁶. However, one of the limitations of the method is that there is no ground checking and participatory mapping process recorded during the delineation of the Protection Block, especially to assess the 'community management space and land use', which causes there be mixed rubber plantations that are still utilized by village community are mapped within the Protection Block. This condition may lead to impacts of access restrictions.

5.3. Management and Monitoring Compliance

Compliance with monitoring is essential to ensure that access restrictions are effective. This may involve regular patrols, surveillance cameras, or other monitoring techniques. Limited human resources is one of the challenges in managing the SM BRBB, as BBKSDA Riau is not only responsible for the management of the SM BRBB but also responsible for other 21 protected areas and conservation of biodiversity in the whole province. Currently, only a few (2-4 personnel) of BBKSDA staff manage the wildlife reserve, and visit the villages/communities occasionally, this condition also cause low interaction and coordination between communities and BBKSDA staff, and the role of NGOs is more dominant in coordination between communities and BBKSDA field staff.

One of the efforts that has been initiated by BBKSDA to strengthen the access restrictions is to promote the utilization of about 17,000 potential mixed-rubber plantations in the Special and

⁶ BBKSDA Riau. 2023. Block Management of Bukit Rimbang Bukit Baling Wildlife Reserve.

Utilization Blocks, especially near Batu Sanggan and Aur Kuning. However, further discussion on the management and technical support for this potential is still limited.

Currently, there is no regular or participatory monitoring or surveillance system of the protection block. Limited monitoring and surveillance activities make the effectiveness of the Protection Block more challenging. This condition is reflected as there is still illegal logging, forest encroachment in the SM BRBB, and limited law enforcement to prevent such illegal activities. The extractive activities of the community, especially men and youth, such as illegal logging and hunting for animals are increasing as a result of a declining economic level.

6. Strategies to Adapt Access Restrictions

Revisiting the access restrictions policy in SM BRBB is required to ensure effective implementation of the access restrictions policy. Implementation of access restrictions in the Protection Block can be challenging, but there are some possible strategies to mitigate the impacts, as described below:

Adjusting the Protection Block Boundaries.

Adjusting the boundaries of the Protection Block area can be a possible approach to mitigate the impacts of access restrictions. As discussed in the previous section, the Protection Block has been delineated based on two criteria: ecological sensitivity and Social sensitivity, and the limitation of this method, particularly for SM BRBB is that there is no ground checking and participatory mapping process recorded during delineation of the Protection Block, especially to assess the 'community management space and land use', which causes that there are mixed rubber plantations that are still utilized by village community are mapped within the Protection Block.

Participatory Land Use Planning facilitated by KERABAT consortium and supported by KfW/IUCN in September 2023 produced village land use maps including patterns of village land use temporally and spatially, and potential problems of current land use⁷. Such participatory land use mapping can be an approach to adjust the Protection Block boundaries.

Data from the participatory land use mapping can be used to discuss with BBKSDA Riau (DG of Conservation on Natural Resources and Ecosystem) and involve the DG of Forestry Planning and Environmental Governance related to adjusting the boundaries of the protection block process.

Optimizing the Mixed-Rubber Plantation in Utilization and Special Blocks

The mixed-rubber plantation in SM BRBB occurs not only in the Protection Block but also in the Special and Utilization Blocks. To improve the productivity of mixed-rubber plantations, efforts need to focus on rubber plantations in Special and Utilization Blocks, which can mitigate the

⁷ KERABAT Consortium. 2023. Participatory Land Use Planning.

impacts of access restrictions on communities. However, optimizing the mixed-rubber plantations not only requires technical and financial support but also depends on the price market of rubber. Therefore, strengthening the rubber farmers-trader association for rubber commodities and connecting to microfinance schemes (e.g. BUMDES/KUR), as well as the value chain is required.

Accommodating Customary System.

Accommodating existing customary systems in a Block Management System can be useful in ensuring the effectiveness of access restrictions. This approach can help to reduce the friction between human activities and can help in determining the Protection Block. The Law No 41, 1991 on Forestry, accommodates the role of customary law communities in forest management.

Local communities who have lived in the area for hundreds of years are generally very dependent on the forest for their livelihoods and adhere to customary systems that have a lot to do with wildlife protection and natural resources management. In SM BRBB, the Dubalang Adat is a village community group that has a role as guardian of customary laws. Personnel of the Dubalang Adat group are tribal representatives and are selected through a deliberation process. Dubalang operates under the direction of *Ninik Mamak*, who is the highest customary leader in the social structure of the villages around the SM BRBB areas. The main duties and responsibilities of *Dubalang Adat* include the protection of customary forest areas managed by the village. In the Integrated Tiger Habitat Conservation Program (ITHCP), *Dubalang Adat* became the main target of capacity enhancement due to its role in protecting the reserve including the Sumatran tiger. e.g. navigation and wildlife survey/monitoring training had been conducted for the *Dubalang Adat*.

Compensation and alternative livelihoods.

Providing compensation and alternative livelihoods to affected communities can be a possible approach to mitigate the impact of access restrictions. This can be done by developing a fair and adequate strategy for compensation and provision of benefits for livelihood restoration or enhancement, that the strategy must ensure that affected people are provided with at minimum the same level and quality of livelihoods and security that they had before. In addition, Compensation measures need to be based on a valuation of expected losses, be socio-economically and culturally suitable and consider a range of options for in-kind, non-monetary and monetary compensation, as appropriate.

Existing livelihood practices that are potential to be developed in SM BRBB include NTFP products such as *Petai* /bitter bean *cocoa*, coconut, rattan, forest fruits, rattan, honeybee and agarwood. However, understanding the seasonal calendar of each NTFP product is important when developing NTFP as an alternative livelihood.

SM BRBB has the potential of natural resources as environmental services for ecotourism. With its high biodiversity, SM BRBB has become the favourite ecotourism in Riau Province, and some

interesting areas include the Subayang River, Sidhu River, Batu Bolah, Batu Dinding waterfall and hilly forest areas. Not only its natural potential, but people's lives with their culture are also a tourist attraction. Ecotourism activities such as the development of homestays and the production of handy crafts by local communities can be potential alternative livelihood activities for local communities. The Integrated Tiger Habitat Conservation Program (ITHCP) has initiated the development of 6 homestays in Tanjung Belit Village as the location for ecotourism.

Inclusive Stakeholder Engagement and Partnership

Engaging stakeholders including local communities, and other affected groups can be a possible approach to mitigate the impacts of access restrictions. This approach can help to ensure that the concerns and needs of affected groups are taken into account in the decision-making process.

YAPEKA and its consortium have been working in SM BRBB since 2015 under the Integrated Tiger Habitat Conservation Program (ITHCP) Phase I (2015-2018) and Bridging Phase (2019-2020). During this period, the project succeeded in mobilizing stakeholders to support tiger conservation and its habitat through the implementation of the Conservation Forest Management Unit (CFMU). Phase III of the ITHCP will especially focus on the collaborative management of conservation areas to further advance local communities' role, link village livelihood with the sustainable market and improve linkage with policy regulation at different levels (i.e. village, district/provincial and national) to improve sustainability beyond the project lifetime. YAPEKA and its consortium have also facilitated discussions with BBKSDA Riau, the local (provincial and district) governments, NGOs, and local communities, and ensured women and affected communities take part in discussions to ensure inclusive engagement of stakeholders. The partnership/collaborative management approach can be developed as a formal agreement between the community (village) with BBKSDA Riau through a conservation agreement. KERABAT consortium could facilitate the discussion process at the village and BBKSDA levels.

7. Conclusions and Recommendations

7.1. Conclusions

- Access restrictions in utilizing mixed-rubber plantations in the Protection Block of SM BRBB has impacted up to 95% of communities in five villages: In Batu Sanggan, Tanjung Beringin, Gajah Bertalut, Aur Kuning and Terusan villages.
- Impacts of access restrictions, especially in utilizing mixed-rubber plantations in the Protection Block include 1) potentially decrease communities' income, especially in five villages where part of their mixed-rubber plantations are within the protection block, 2) Reduce/loss of access for village communities in utilizing other natural resources, 3) social conflicts between village communities with the Wildlife Management Authority, and 4) High transaction and management costs to local communities associated with establishing community projects.
- The effectiveness of access restrictions in the Protection Blocks, which objectives are to protect the remaining population of Sumatran Tiger and other wildlife as well as to protect water resources, is limited to existing spatial data analysis which does not include participatory mapping, and limited compliance of management and monitoring activities on the ground.
- Adaptive strategies to mitigate the impact of access restrictions include but are not limited to Reviewing/adjusting Protection Block Boundaries, optimizing rubber plantation in Special and Utilization Blocks, inclusion of customary law, developing compensation and alternative livelihoods and developing inclusive stakeholder management and partnerships.

7.2. Recommendations

- To ensure effectiveness of access restrictions in the Protection Block of SM BRBB, participatory mapping and management and monitoring compliance need to be conducted; and adaptive strategies to mitigate impacts of access restrictions need to be implemented, including: Reviewing/adjusting Protection Block Boundaries, optimizing rubber plantation in Special and Utilization Blocks, inclusion of customary law, developing compensation and alternative livelihood, and developing inclusive stakeholder management and partnerships.
- To develop compensation schemes for the affected communities, an economic valuation needs to be conducted based on a valuation of expected losses, and socio-economically and culturally suitable and consider a range of options for in-kind, non-monetary and monetary compensation, as appropriate.
- Development of alternative livelihood needs to be carefully tailored to improve communities' income as well as to reduce local threats to species, habitats or resources of conservation concern.
- Formal agreement between the community (village) with BBKSDA Riau through a conservation agreement to accommodate community needs and compensation. This

agreement can be developed based on a conservation partnership as stipulated in the Director General of Natural Resources and Ecosystem Conservation Regulation Number P.6/KSDAE/SET/Kum.1/6/2018 concerning Technical Instructions for Conservation Partnerships in Natural Reserve Areas and Nature Conservation Areas. Conservation partnership, in this regulation, is interpreted as collaboration between unit heads area managers or permit holders in conservation areas with local communities based on the principles of mutual respect, mutual trust and mutual benefit.

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