

Conflict resolution efforts through stakeholder mapping in Labanan Research Forest, Berau, East Kalimantan, Indonesia

C B Wiati^{1*}, S Y Indriyanti^{1,2}, R Maharani¹ and Subarudi³

¹Dipterocarps Forest Ecosystem Research and Development Center, Samarinda, East Kalimantan, Indonesia

²Master Student of Forestry Faculty, Mulawarman University, Samarinda, East Kalimantan, Indonesia

³Center for Research and Development on Climate Change and Policy, Bogor, West Java, Indonesia

Corresponding author: caturbudiwiati@gmail.com

Abstract. Conflict resolution in Labanan Research Forest (LRF) by the Dipterocarps Forest Ecosystem Research and Development Center (Balai Besar Penelitian dan Pengembangan Ekosistem Hutan Dipterokarpa – B2P2EHD) needs support from other parties that are also interested in such forest management. This paper aimed to presented conflict resolution in LRF through stakeholder mapping for its engagement. This research was conducted for seven months (June to December 2015) with interviews and literature study as its data collection. Collected data were analysed by a stakeholder analysis and matrix based on their interest and power levels. Two important findings were: (1) There are 19 parties having interests in the existence of LRF should be engaged; (2) Conflict resolution of LRF can be achieved: (a) ensuring key stakeholders which have high interest and high power level has same perception in existence and management of LRF, (b) establishing a partnership with primary stakeholders which have high interest and high power levels; (c) building partnerships between primary stakeholders which have high interest but low power levels, (d) building partnerships between key and secondary stakeholders which have low interest but high power levels and (e) gaining support from primary and secondary stakeholders which have low interest and low power levels. Stakeholder mapping is an important tool for tenure conflict resolution through mapping the power and interest of the conflicted parties and finding the proper parties to be approached.

1. Introduction

Conflicts of natural resource uses or tenure conflicts are often happening in Indonesia. Conflicts were becoming more frequent after Indonesia shifted to reformation and decentralization era. Wulan et al [1] reported that there were 359 evidences of conflicts in forestry sector from January 1997 to June 2003. Five main factors caused the conflict are: (i) the boundary or restriction of forest access (36%), (ii) deforestation (26%), (iii) illegal logging (23%), (iv) environmental or forest damage (12%) and (v) forest lands conversion (3%).

Conflicts also occur in Labanan Research Forest (LRF), Berau District, East Kalimantan Province, Indonesia. LRF is one of state forest area with special purpose (Kawasan Hutan Dengan Tujuan Khusus/KHDTK) belongs to the Forestry and Environment Research, Development and Innovation Agency of Ministry of Environment and Forestry (FOERDIA–MEF) and managed by the Dipterocarps



Forest Ecosystem Research and Development Center (Balai Besar Penelitian dan Pengembangan Ekosistem Hutan Dipterokarpa/B2P2EHD) as stated in Decree of the Director General (DG) of FOERDIA [2]. In the recent year, LRF has faced many conflicts in the form of illegal logging and land encroachment by local communities. In 2013, LRF security patrols in cooperation with Police Resort Berau, Section of Region I of East Kalimantan Natural Resource Conservation Agency (Balai Konservasi Sumber Daya Alam /BKSDA Kaltim) and Forestry Services of Berau District have found the encroachment in LRF area reach 2.5 Ha [3]. In 2014 also found a wood pile of mixed wood in size: 10 x 12 m (46 pcs), 5 x 20 m (43 pcs), 6 x 16 m (23 pcs), 10 x 10 m (9 pcs), 5 x 10 m (8 pcs) and 5 x 7 m (13 pcs) [4]. This finding indicates that there are conflicts between LRF management with local communities.

Although the B2P2EHD is responsible for LRF management, the resolution of conflicts cannot be achieved without supporting from other stakeholders that are also interested in LRF existence. The existence of LRF is very important asset because of the presence of STREK (Silvicultural Techniques for the Regeneration of Logged Over Area in East Kalimantan) plots as a data series collected over 25 years (1990–2015). The LRF is also useful for other parties in its surrounding area. The sustainable management of LRF can be achieved by building a common understanding of all parties about the importance of LRF. This paper aimed to find conflict resolution efforts through stakeholder mapping in LRF.

2. Materials and Methods

2.1. Time and Location Research

This research was conducted for seven months (from June to December 2015) in Berau District, East Kalimantan Province, Indonesia, especially in around LRF area.

2.2 Method of Data Collection and Analysis

The parties/stakeholders were generally defined by Mitchell et al [5] as an individual or group that is able to influence the achievement of a goal and have a relationship correlated, while mapping the parties (stakeholder mapping) was defined by BSR [6] as a collaborative process that includes research, debate and discussion on determine the list of the main stakeholders of the spectrum of the parties as a whole. Mapping of the parties in this study was used as a tool to identify and assess the influence and role of a party or a group of the existence of LRF.

This study used a qualitative approached which data collected was conducted through interviews with key respondents and combined with literature study. Research stages were carried out by: (a) Parties identified and listed; (b) Parties classified based on the importance and authority; (c) Stakeholder analyzed, and (d) Priorities stages engagement of parties established in conflicts resolution of LRF. This study analysis was used a matrix of influence and interests of parties or stakeholders power – interest matrix/grid [7]. While determination of parties position in matrix was based on the authority and relevant parties views of LRF.

3. Results and Discussions

3.1 Overview of Labanan Research Forest and Surrounding Villages

LRF originated from government cooperation project between Indonesian Government and France Government in 1989–1990. STREK Plot has been developed in this project in order to found balances between benefits of tree production (wood) and its environment through tree increment measurement, annually. After this project finished, STREK Plot continued with cooperation project between Indonesian Government and European Union Government through Berau Forest Management Project (BFMP) in 1996–2001. BFMP Project was intended as a pilot project for sustainable forest management at operational level in Labanan Unit of INHUTANI I Concession (136,000 ha) to encourage Sustainable Forest Management (SFM) Certification, implementation of Reduce Impact

Logging (RIL) and Information System of Tree Topography (Sistem Informasi Topografi Pohon/ SIPTOP). Then, STREK Plot activities followed up with concession area of Labanan Unit of INHUTANI I established with covering $\pm 142,691$ ha as research and operational activities of BFMP by Decree of Ministry of Forestry and Plantation [8]. In order to ensure legal certainty of STREK Plot research and its sustainability researches, then this area is appointed become LRF by Decree of Ministry of Forestry [9] with an area of 7,900 ha. Furthermore, according to Ministry of Forestry Decree Number: 64/Menhut-II/2012 (February 3, 2012) [10], the area was designated as KHDTK Labanan/LRF with an area of 7,959.10 ha based on definitive boundaries [11].

The administration of LRF in Berau District including 3 sub-districts namely: Teluk Bayur, Sambaliung and Kelay. There are 5 villages of 3 districts nears to LRF. From the villages bordering with LRF, the village which already have clear boundaries only Labanan Makmur and Labanan Makarti villages. This is understandable due to these two villages originated from transmigration villages. Maps of LRF can be seen in this following figure 1.

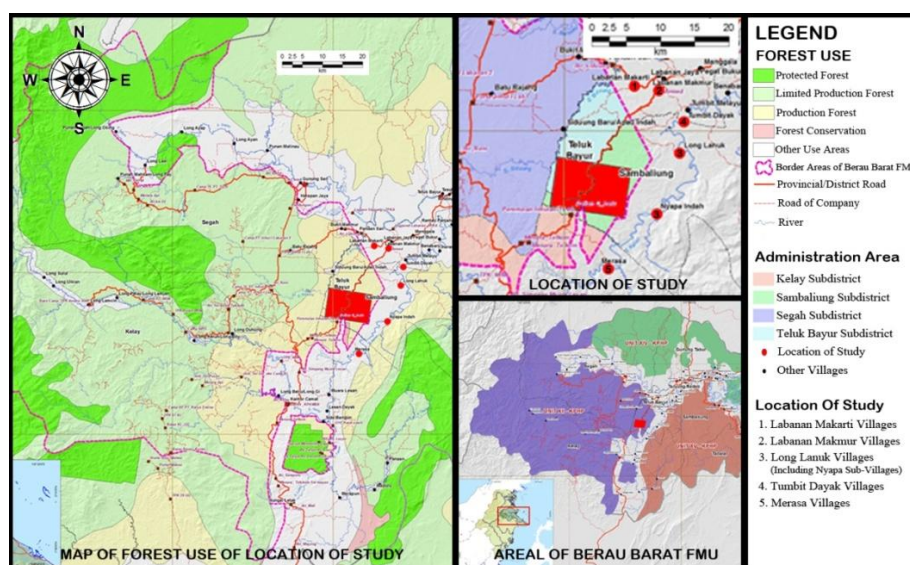


Figure 1. Map of Location Study

The profile of the villages shown in following table.

Table 1. Profiles of Villages in around Labanan Research Forest [12-19]

Sub District	Village	Position from LRF	Established year	Large (Km ²)
Teluk Bayur	Labanan Makarti ^a	North	1984	14.31
	Labanan Makmur	North	1982	9.26
Sambaliung	Long Lanuk ^a (including Nyapa Indah Subvillage)	East	Naturally	427.11
	Tumbit Dayak	Northeast	Naturally	81.19
Kelay	Merasa ^a	Southeast	1968	345.99

^aThe village directly bordering with LRF

3.2 Interest Conflicting Occured in Labanan Research Forest

Generally, LRF disallowance by village communities around before this area was designated as LRF, precisely since 2005, followed with BFMP activities finished in this area. This is evidenced by destruction of STREK camp (Km 37) and claiming of land developed by Merasa village community.

Unfortunately, B2P2EHD was not investigated the perpetrators yet due to authority limited, but it has been widely reported.

LRF disturbances by personal attacked from Merasa Village begins on July 2013. Some seasonal crops such as bananas and others were planted in that area. Land clearings massively happened on May 2015 by Merasa villagers followed by Nyapa Indah sub-village resident. Land clearings in LRF effected lost in some assets including research plots (STREK Plot and others), facilities and infrastructure that had been built. The research plots in LRF that destroyed by land clearing can be seen in following table.

Table 2. Research Plots Damaged in LRF due to Land Clearings by Local Community [20]

No	Plot Impacted	The Extent of Impact (Ha)	Total Area (Ha)	Percentage Impacted (%)
A	Merasa Village Community Group	49.19	349	
1	Bina Pilih	7.37	24	30.71%
2	Watershed Rehabilitation (Rehabilitasi DAS)	25.79	285	9.05%
3	Intensive Silviculture (Silvikultur Intensif/SILINT)	15, 07	36	41.86%
4	STREK RKL I Plot 2 Square 3 & 4	0.96	4	24.00%
B	Nyapa Indah Sub-village Community Group	15.42	104	
1	In-Situ Keruing	2.03	12	16.92%
2	Seed Orchard of Keruing	7.71	25	30.84%
3	Seed Orchard of Meranti	4.15	50	8.30%
4	Seed Orchard of Tengawang	1.12	5	22.40%
5	SILINT	0.41	12	3.42%
Total damaged area		64.61	453	14.26%

Wiati and Indriyanti [21] reported some causes of the conflict in LRF as follows LRF less well known by local people around, there are some company's activities around LRF, land claims and land clearing by local people around LRF and weakness of law enforcement. The dominant conflict causes is motivation of land claims by local people and land clearing by Merasa villagers that motivated other villages to do the same also. The cause of the conflict in LRF briefly shown in the following figure.

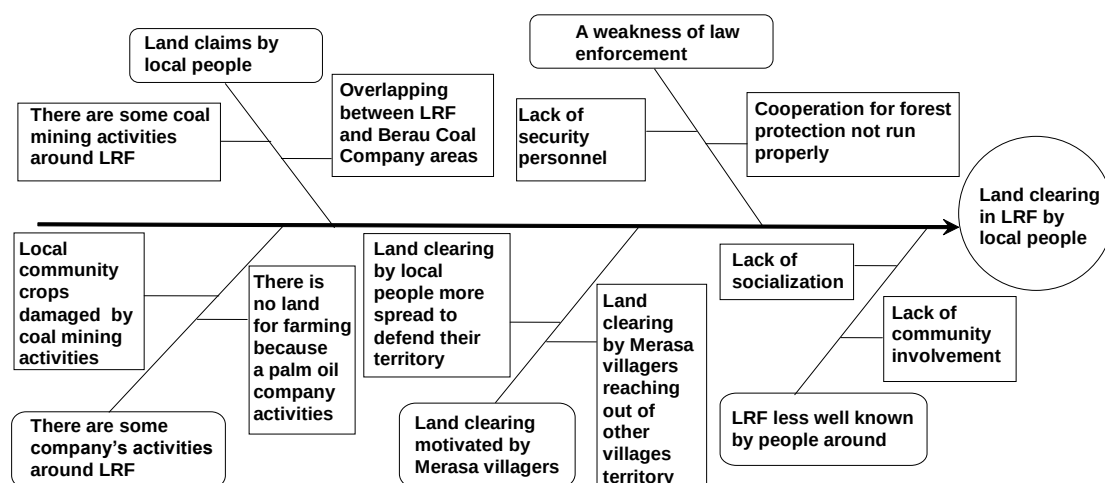


Figure 2. Diagram *Fishbone* causes of conflict in LRF

3.3 The Stakeholders in Labanan Research Forest

To better understand the conflict in LRF and find ways of conflict resolution, it is necessary to analyze all of parties to map relationship between parties and conflict between parties. However, because this research has not yet conduct Focus Group Discussion (FGD) between parties who concerned on existence of LRF, then this article just will disclose information about the parties who potentially can work together to support B2P2EHD for the resolution of conflicts in LRF. For ease of analysis, then stakeholders associated with presence and management LRF divided into 3, namely: (i) Primary Stakeholders, who having interests directly with a policy, program or project; (ii) Secondary Stakeholders (supporting), who have no direct interest, but participate and have influence on public attitudes and decisions; and (iii) Key Stakeholders, which lacks legal authority in decision-making as shown in Table 3.

Table 3. Clasification of Stakeholders Involved in the Tenurial Conflict in Labanan Research Forest

Primary Stakeholders	Secondary Stakeholders	Key Stakeholder
1. Dipterocarps Forest Ecosystem Research and Development Center (B2P2EHD)	1. Berau District Regional People Representative Assembly (Dewan Perwakilan Rakyat Daerah/DPRD Berau)	1. Ministry of Environment and Forestry (MEF)
2. Berau Barat Forest Management Unit (Kesatuan Pengelolaan Hutan Produksi/KPHP Berau Barat)	2. Forest and Climate Change (ForClima) Programme	2. Forestry and Environment Research, Development and Innovation Agency of Ministry of Environment and Forestry (FOERDIA–MEF)
3. Hutan Sanggam Labanan Lestari (HLL) Company	3. Bestari Foundation	3. Ministry of Energy and Mineral Resources (MEMR)
4. Berau Coal (BC) Company	4. East Kalimantan Natural Resource Conservation Agency (BKSDA Kaltim)	4. Berau District Government
5. Local People around LRF	5. Sub-District (Teluk Bayur, Sambaliung and Kelay)	
6. Center for Orangutan Protection (COP)	6. Rimba Anugerah Kaltim (RAK) Company	
7. Mahakam Berau Watershed Management Agency (Balai Pengelolaan Daerah Aliran Sungai/BP DAS Mahakam Berau) – Nusantara Berau Coal (NBC) Company	7. Kaltim Jaya Bara (KJB) Company	
	8. Armed Battalion of 18/105 Tarik Buritkang	

Table 3 shown that key stakeholders which have legal authority for existences and management of LRF were FOERDIA–MEF, MEF and Berau District Government. Meanwhile, stakeholders related to LRF management (primary stakeholders) were included 7 parties e.g. B2P2EHD, KPHP Berau Barat, HLL Company, BC Company, local people around LRF, COP, and BP DAS Mahakam Berau – NBC Company.

3.4 The Parties Participation in Conflict Resolution in Labanan Research Forest

In order to determine the parties which may be involved in the conflict resolution of LRF, each stakeholder was divided into 4 groups based on its interest and power levels as shown in Figure 3. Group A showed stakeholder groups that have a high interest towards to LRF but have a low power on policy-making, including members of institution or person responsible for the implementation of activities but not as policy makers. Group B was a group of stakeholders that have a low interest and a low power on existences and management of LRF. Group C shown stakeholder groups that have a high degree of interest and power related to the existences and management of LRF. While group D showed a group of stakeholders that have a low interest but have a high power on the existences and management of LRF.

Interest	High	Group A - Local People around LRF - COP	Group C - MEF - FOERDIA–MEF - MEMR - B2P2EHD - KPHP Berau Barat - HLL Company - BC Company
	Low	Group B - BP DAS Mahakam Berau – NBC Company - BKSDA Kaltim - Sub-district (Teluk Bayur, Sambaliung and Kelay) - RAK Company - KJB Company - Armed Battalion of 18/105 Tarik Buritkang	Group D - Berau District Government - DPRD Berau - ForClime Programme - Bestari Foundation
		Low	High
		Power	

Figure 3. Matrix grouping of stakeholders based on its interests and impacts

Figure 3 indicated that although the stakeholders can be divided into 3 groups: primary, secondary and key stakeholders, they can also be divided by their degree of interest and power levels. This division is useful because some parties have a high interest and a low power should be involved in conflict resolution. Grouping through this matrix would much help for conflict resolution because the stakeholders would increase their understanding about the position of other parties based on their difference levels of interest and power. Level differences in interest and power should be addressed through building of common perception about management and existences of LRF in order to achieve its conflict.

Related to parties involvement, Figure 3 showed there are several steps for conflict resolution that can be performed by B2P2EHD i.e. (1). First step, to ensure that key stakeholders included in Group C (MEF, FOERDIA–MEF, MEMR) had been common perception in existences and management of LRF. Its common perception was related to policy authority including area identity changes and area permit that can be greatly impacted on management of LRF, in the future; (2). Second step, to develop cooperation between primary stakeholders were included in Group C (KPHP Berau Barat, HLL Company, and BC Company) had payed attention to the problem happened. In this steps, B2P2EHD was received fund and human resources from Group C to carrying conflict resolution. On the other hand, this cooperation can be informed to the public that LRF management activities being carried out by the B2P2EHD and other party; (3). Third step, to develop cooperation with primary stakeholders from Group A (local people around LRF and COP). In this step, B2P2EHD needs to ensure that local people around LRF and COP interest in accordance with B2P2EHD, especially LRF utilization. Important perception, although B2P2EHD has legal authority to manage LRF, its management will be considered to other parties interest, and (4). Fourth step, to develop cooperation with key and secondary stakeholders that were in group D (Berau District Government and DPRD Berau). This cooperation was very important due to LRF is forest area included in the administrative area of Berau District. This condition causes local communities around LRF more obey with Berau District Government and DPRD Berau than B2P2EHD. Besides, B2P2EHD also need to develop cooperation with For Clime Programme and Bestari Foundation that also included in Group D. Both institutions are carrying out their activities by developing a strong interaction with local people around LRF, so that they can give a mindset influences for local people. This cooperation will helped B2P2EHD can be accepted by community around LRF. Last, when the support of secondary stakeholders in Group D

was considered insufficient, then next step required B2P2EHD will supported from primary and secondary stakeholders in Group C (BP DAS Mahakam Berau–NBC Company, Sub–district (Teluk Bayur, Sambaliung and Kelay), RAK Company, KJB Company, BKSDA Kaltim and Armed Battalion of 18/105 Tarik Buritkang). It was due to their work location relatively close to LRF, so it can covered B2P2EHD weaknesses, especially related to lack of funding and human resources in LRF management, particularly in security activities.

4. Conclusion

Nineteen parties have interested in existences of LRF. They can be put in the stakeholders group (as primary, secondary, and key stakeholders) and the stakeholders matrix based on their own position determined by their interest and impact to the use of LRF. This position has to be considered and addressed by the management of LRF for its conflict resolution agenda. Another agenda is to socialize the important of LRF for both the sustainable forest management program and the prosperity of local people living in surrounding LRF area. Five steps can be carried out by the B2P2EHD for conflict resolution namely: (a) ensuring key stakeholders which have high interest and high power level has same perception in existence and management of LRF; (b) establishing a partnership with primary stakeholders which have high interest and high power level; (c) building partnership between primary stakeholders which have high interest but low power level; (d) building partnership between key and secondary stakeholders which have low interest but high power level and (e) gaining support from primary and secondary stakeholders which have low interest and low power level. However, the stakeholder mapping is important tools for solving the tenure conflict and finding the parties to be approached.

Acknowledgements

The authors gratefully acknowledge to Dipterocarps Forest Ecosystem Research and Development Center (B2P2EHD); Forestry and Environment Research, Development and Innovation Agency of Ministry of Environment and Forestry (FOERDIA–MEF); Forestry Faculty of Mulawarman University and also all interviewed related parties.

References

- [1] Wulan Y C, Yasmi Y, Purba C and Wollenberg E 2004 *Analisa Konflik Sektor Kehutanan di Indonesia 1997 – 2003* (Bogor: Center for International Forestry Research (CIFOR))
- [2] Surat Keputusan. 2007 Badan Penelitian dan Pengembangan Kehutanan SK No. 90/Kpts/VIII/2007 tentang Penunjukan Penanggung Jawab Pengelolaan Kawasan Hutan Dengan Tujuan Khusus (KHDTK) Lingkup Badan Penelitian dan Pengembangan Kehutanan
- [3] B2PD 2013 Laporan KHDTK. Balai Besar Penelitian Dipterokarpa p 7
- [4] B2PD 2014 Laporan KHDTK. Balai Besar Penelitian Dipterokarpa p 9
- [5] Mitchell R K, Agle B R and Wood D J 1997 Toward a theory of stakeholder identification and salience: defining the principle of who and what really counts *Academy of Management Review* **22** p 853–86
- [6] BSR 2011 *Stakeholder Mapping. Business for Social Responsibility*. Diakses dari <http://gsvc.org/wp-content/uploads/2014/11/Stakeholders-Identification-and-Mapping.pdf> tanggal 30 Juni 2015
- [7] Slaba M 2014 Stakeholder Power – Interest Matrix and Stakeholder Responsibility Matrix in Corporate Social Responsibility *Proc. The 8th International Days of Statistics and Economics* (Prague) p 1366–74
- [8] Surat Keputusan 1999 Menteri Kehutanan dan Perkebunan SK No. 866/Kpts–II/1999 tentang Penetapan Areal Konsesi PT. Inhutani Unit I Labanan Seluas ± 142.691 Hektar Sebagai Areal Penelitian dan Kegiatan Operasional BFMP

- [9] Surat Keputusan 2007 Menteri Kehutanan SK No. 121/Menhut-II/2007 tentang Penunjukan Kawasan Hutan Produksi Tetap seluas $\pm$ 7.900 (Tujuh Ribu Sembilan Ratus) Hektar di Kabupaten Berau Provinsi Kalimantan Timur sebagai Kawasan Hutan Dengan Tujuan Khusus untuk Hutan Penelitian Labanan
- [10] Surat Keputusan 2012 Menteri Kehutanan SK No. 64/Menhut-II/2012 tentang Penetapan Kawasan Hutan Dengan Tujuan Khusus untuk Hutan Penelitian Labanan yang terletak di Kabupaten Berau, Provinsi Kalimantan Timur seluas 7.959,10 (Tujuh Ribu Sembilan Ratus Lima Puluh Sembilan dan Sepuluh Perseratus) Hektar
- [11] BPKH Wilayah IV. 2009. Berita Acara Pembuatan Tata Batas Definitif Kawasan Hutan Dengan Tujuan Khusus Untuk Hutan Penelitian Labanan, Kabupaten Berau, Provinsi Kalimantan Timur. Balai Pemantapan Kawasan Hutan Wilayah IV
- [12] BPS Kabupaten Berau 2015^a *Kecamatan Sambaliung Dalam Angka* (Badan Pusat Statistik Kabupaten Berau) p 31
- [13] BPS Kabupaten Berau 2015^b *Kecamatan Teluk Bayur Dalam Angka* (Badan Pusat Statistik Kabupaten Berau) p 32
- [14] BPS Kabupaten Berau 2015^c *Kecamatan Kelay Dalam Angka* (Badan Pusat Statistik Kabupaten Berau) p 35
- [15] BFBP – Yayasan Bestari 2003^a *Profil Desa Labanan Makarti; Laporan Survey Sosial Ekonomi Masyarakat Sekitar Hutan* (Berau Forest Bridging Project – Yayasan Bestari) p 1–3
- [16] BFBP – Yayasan Bestari 2003^b *Profil Desa Labanan Makmur; Laporan Survey Sosial Ekonomi Masyarakat Sekitar Hutan* (Berau Forest Bridging Project – Yayasan Bestari) p 1–3
- [17] BFBP – Yayasan Bestari 2003^c *Profil Kampung Long Lanuk; Laporan Survey Sosial Ekonomi Masyarakat Sekitar Hutan* (Berau Forest Bridging Project – Yayasan Bestari) p 1–5
- [18] BFBP – Yayasan Bestari. 2003^d. *Profil Kampung Merasa; Laporan Survey Sosial Ekonomi Masyarakat Sekitar Hutan* (Berau Forest Bridging Project – Yayasan Bestari) p 1–4
- [19] BFBP – Yayasan Bestari 2003^e *Profil Kampung Tumbit Dayak; Laporan Survey Sosial Ekonomi Masyarakat Sekitar Hutan* (Berau Forest Bridging Project – Yayasan Bestari) pp 1–3
- [20] B2PD 2015 *Studi Pengembangan Model Kemitraan Kehutanan di KHDTK Labanan Kabupaten Berau* (DIREC Penelitian Dipterokarpa: Laporan Hasil Penelitian) p 25
- [21] Wiati C B and Indriyanti S Y 2015 Upaya Penanganan Konflik Di KHDTK Labanan Kabupaten Berau Melalui Pembangunan Kemitraan Kehutanan *Makalah dalam Seminar Solusi Penanganan Konflik Masyarakat Hutan Melalui Upaya Pengelolaan Kawasan Hutan Secara Partisipatif* pp 9–12