

## CONFLICT OF FOREST RESOURCES AND ECOLOGICAL ADAPTATION STRATEGY

Rita Rahmawati<sup>1\*</sup>, Arya Hadi Dharmawan<sup>2</sup>, Rilus Kinseng<sup>3</sup>, Dudung Darusman<sup>4</sup>

<sup>1</sup>Dr, Djuanda University, INDONESIA, [rita.rahmawati@unida.ac.id](mailto:rita.rahmawati@unida.ac.id)

<sup>2</sup>Dr, IPB University, INDONESIA, [adharna1963@yahoo.com](mailto:adharna1963@yahoo.com)

<sup>3</sup>Dr, IPB University, INDONESIA, [rilus\\_kinseng@hotmail.com](mailto:rilus_kinseng@hotmail.com)

<sup>4</sup>Prof, IPB University, INDONESIA, [ddarusman@yahoo.com](mailto:ddarusman@yahoo.com)

\*Corresponding Author

### Abstract

This study is focused on the adaptation strategy of the local community who has the problem of land rights. In Indonesia, all natural resources are subject to control and to manage by the state. As a ruler of the resources, the Government published any policy which provided revenue for the state, such as giving the right to industrial extraction of logging companies in the forest area. Whereas, many communities' lives depend on the forest. Forest resources are important for the Indonesian economy, as well as for the livelihood of communities who depend on the forest. It finds themselves in situations of conflict. The aim of the study is to analyse adaptation strategy of local community which is in the forest resource conflicts. The study used mix methods. A qualitative method with a focus on ecological adaptation and livelihood strategy, while the quantitative approach stresses defining the meaning of findings or facts that are deconstructed based on the subjective perspective of the researcher. The research held in two site, namely Sungai Utik Forest which Dayak Iban Community and Halimun Salak Mountain National Park which Kasepuhan community live. The result of the research showed that conflict of the forest resources have improved the adaptation strategy of the local community. Although various problems is already attacking them, local community still have loyalty to their tradition. They have own regulation to manage and utilize land, especially for managing forest and rice planting. Faithfulness in carrying this cultural tradition out are their ecological adaptation strategy.

**Keywords:** Adaptation Strategy, Ecological Adaptation, Conflict of Forest Resources, Dayak Iban Community, Kasepuhan Community

### 1. INTRODUCTION

Forests are a very important resource for humans, besides having ecological value, also social and economic value. There are many people who work in the forest. Human and forest resources are equally better as a result of the hard work of all those who have contributed to understanding changes in world forest resources (Macdicken, 2015). Forests are now the result of the hard work of all parties, the tug of war, conflict, and cooperation have been stain the development of the forest. Therefore all parties care to make the forest stay sustainable.

Sustainable forest management (SFM) is a lot of things for many people - but the common thread is the production of forest goods and services for present and future generations. The promise of sustainability is rooted in two places; firstly that ecosystems have the potential to renew themselves and secondly that economic activities and social perceptions or values that define human interaction with the environment are

choices that can be modified to ensure the long-term productivity and health of the ecosystem. (Macdicken et al., 2015). For the sake of forest preservation, there are times when placing the forest in the midst of a conflict of interests of all parties. In Indonesia, forests are natural resources that are controlled by the state and are used maximally for the prosperity of the people.

Forest resources are important for the Indonesian economy, as well as for the livelihoods of communities that depend on the forest. In 1960, the Indonesian government declared that all natural resources are subject to control and management of state (Basic Agrarian Law, Statute 160, Number 104, Law Number 5). Based on these regulations, the government may establish an area for a conservation area or for the utilization of natural resources.

In the late 1960s, Suharto (President of Indonesia, 1966-1998) has partitioned the outside island's territory of the Sumatra Island, Kalimantan (Indonesian Borneo) and Irian Jaya, and given the right to industrial extraction of logging companies in nearly 80% of forest area (Broad & Cavanagh, 1994); (Curran et al., 1999). Logging companies are given leases for a period of 35 years, after which time they could renew the contract or leave the ground. Over time, with an abandoned lease, the barren area has been transformed into industrial plantations, especially oil palm monocultures. Nearly 25% of land in West Kalimantan, for example, is allocated for the plantation industry in 2002. (Curran et al., 2004). The government policy has put local communities in conflict with the government including concession holders.

In other cases, government policy on forest conservation also lead to conflict, for example, the issuance of the decision of the Minister of Forestry No.175/Kpts-II/2003, which is a function of changes in the ex-corporate (Perum Perhutani) or protected forests and limited production forests around Halimun Salak Mountain National Park (TNGHS) into a single entity as the national park (conservation area). This policy aims to preserve forests, but putting the local community in conflict. Because this policy has eliminated the rights of local communities to utilize forest land.

Land use issues among many parties, including concessions, plantations, protected areas, subsistence communities, and transmigration, always find themselves in situations of conflict. Traditional customary rights of resource rights are determined and controlled by people without a formal title. It is only recognized to the extent they do not conflict with national law. Under the Basic Agrarian Law, all of the lands should be registered, and land without a title is assumed to belong to the state (MacAndrews C., 1986). Both in the concession area as well as conservation, a number of local communities retain land rights. However, these rights are rarely enforced (Barber CV, 1998), and the public is left to negotiate more concrete about the protection of their own land. Local residents are not allowed to cut timber in block logging, this right is provided solely for the concession or government, while land claims by indigenous people without proof of ownership correspondence could not be justified. Even, Indigenous people could be expelled from his own land that has been claimed for decades and became a source of their livelihood.

Indigenous Peoples in Indonesia are currently facing various problems, such as the seizure of homelands and natural resources, poverty, criminalization, conflict, human rights violations, and others. In various regions occur practices of violating the rights of indigenous peoples, even if there is no freedom for embracing the origin of religion (AMAN, 2010). Traditional law enforcement and traditional art and culture improvement are often violated, ignored and criminalized (Rahmawati, 2012).

However, the conflict between government including concession and the community has caused the great shock for the community where, on one side, the anger some people had led to the deforestation and, on the other side, it has caused changing of livelihood, institutional, and cultural norms and thought to change the order of population. Indicators of this changing can be seen from changes in the food system, livelihood systems, capital, social, and patterns of population distribution, improved rate of migration from rural to urban areas, and other changes in social structures.

There are inconsistencies in the Indonesian forestry policy which Government is a more pro-rich businessman and negated the local poor communities. It has become a source of conflict in the forestry sector. CMO Connor sees any inconsistency between the policy of the official land use and the actual results in the forest areas has been around for several decades. These inconsistencies may represent conflicting priorities, lack of information or poor communication, but in practice they allow the government to claim the forest as long as it's really keeping the forest and its people, while For elite profit business, Government has put the local communities and the environment as a victim.

The view that society as a cause of deforestation has caused the government's policy on forestry is not always sympathetic to the local community, the local community is negated without thinking that the local community has great concerns to the forest to remain sustainable because the forest is a source of livelihood

for local communities. Changing of the forestry policy will impact to change of local community livelihood adaptation strategies.

The question is then whether different societies have the same reactions to various institutional changes in the management of forest resources which have caused conflict and threaten the livelihood of the local community, especially if the community itself has a typical livelihood system based on local culture.

## **2. RESEARCH METHODS**

Paradigm of Study is done by referring to the constructivism paradigm (NK & Lincoln, 2000). Ontologically, constructivism is built over three main propositions. First, structures that form the behaviour of actors, individuals and institutions consist of material, normative, and idealistic aspects. Second, interest does not describe a standard series of preferences but products of the actors' identity. Third, structures and agents define one another.

The study uses a qualitative approach with a focus on ecological adaptation and livelihood strategy. The quantitative approach stresses defining the meaning of findings or facts that are deconstructed based on the subjective perspective of the researcher. A history analysis is conducted to define description, understanding and to explain a complex phenomenon in factorial relation, pattern, and configuration.

This paper is the result of the research taking on the case in two locations, namely:

1. Mount Halimun Salak National Park in Bogor Regency, Sukabumi Regency, and Lebak Regency, West Java Province and Banten Province. There is Kasepuhan traditional community in this location.
2. Sungai Utik Putussibau Forest, Kapuas Hulu Regency, West Kalimantan Province. There is Dayak Iban traditional community in this location.

## **3. RESULT OF THE RESEARCH**

### **3.1. The Phenomenon of Conflict**

According to (Dharmawan, 2007) that the phenomenon of conflicts of natural resources (natural resources, conflict) is the ecological issues instrumentally become "field of study" of the human ecology, which is difficult to replace by other disciplines (Buckles, 1999). In the study of conflicts of natural resources, it is involved in the analysis of the normative ethics of human ecology which has been used as instrumental to understand it. There are many other agendas and still being finalized by the scholars of human ecology at this time, such as the ethnic survival problems, cultural survival, local knowledge against the exploitative capitalist paradigm of nature. Also, the transformation of the thinking problem from natural rationalism-utilitarianism toward to the eco-social Rationality (Rahmawati, Pradidina, & Muarif, 2011).

In understanding the survival mechanisms of the community, the evolutionism concept of Darwinian has led to human ecology at the level of intense attention on the mechanics of engineering and technology infrastructure of social organization (Dharmawan, 2007). The two most important pillars of the adaptation mechanism are to fill the cultural dimensions (way of thinking on nature) in the human ecological system. Theoretical investigation continues and touches the problems of logical consequence of the convergence and intensive intersection of the dimension of "culture" and "nature" in an ecological system. At this point, a theoretical investigation is aimed at searching for answers about the "social roots of ecological change" or "ideational factors affecting the nature" (Brosius, 1999). The idea for finding a pragmatic solution to the critical issues of the interaction result between "culture" and "nature" has led a number of ecological thinkers in politics area.

By taking the exemplary case of Kasepuhan community and Dayak Iban community, it is described that the local community (indigenous people in Indonesia) is currently facing various problems, it is not only about the seizure of homelands and natural resources, but also about poverty, criminalization, conflict, human rights violations, and modernization. The main problem is a conflict between the local community and government including the company.

The problems come from the seizure of natural resources. Sungai Utik is a rich area for timber. The tribal area of the Sungai Utik is home for 67 plant species, mostly meranti, kelasau, resak, tekam, and kelampai. Logs from these species are of very high commercial and economic value. Because of this condition, the central government has established forest utilization permits namely Business License Timber Management (IUPHHK) on behalf of PT. BRW by the policy of Minister of Forestry number 268/Menhut-II/2004 for 45 years period with TPTI pattern for an area of 110 500 hectares. Even if the condition of the company is not active, but has not revoked its business license until now. Local governments of Kapuas Hulu issuing

plantation business license (IUP) to PT. MKA, PT. BSA, PT. RU, PT. BTJ within 20 years periods. The location for IUP is located at the same location for IUPHHK. So at the same time, there are 2 kinds of business licenses in local communities' land. The conflict between community and government including company are unavoidable.

Differences with the Dayak Iban community, Kasepuhan community has a conflict problem with the government. Actually both government and community have the same aim for conservation and the same ideology of environmental conservation. However, the applied of preservation government concept has negated local community livelihood. Since the issuance of Decree of the Minister of Forestry Number 175/Kpts-II/2003 about the Appointment of National Park Mountain and Change the Function of Protected Forest Area, Permanent Production Forest, Limited Production Forests in Mount Halimun Salak Forest with an area coverage of 113.357 hectares in West Java and Banten Provinces has become the Mount Halimun Salak National Park. Since then the area coverage of Mount Halimun Salak National Park has expanded approximately to 113,357 ha. Since this regulation law was issued, there were approximately 300 villages being entered into the National Park territory, including settlements and arable land of Sinar Resmi Village. The consequences of this expansion of the National Park have caused loss of access rights of local communities including the Kasepuhan community to work on agricultural land where they have been living for a long time. This condition puts Kasepuhan community in conflict with Mount Halimun Salak National Park (TNGHS), mainly because the local communities have lost access to land rights and they require to adapt to the new policy in terms of livelihood, while the traditional institution does not justify other types of livelihood rather than farming on the land appointed by traditional institution in a customary manner.

Table 1. Characteristic of Conflict in Sungai Utik Forest

Cause	Process of Reconciliation		Type of Conflict
	Community	Government	
Value system The status of indigenous territories boundaries and access uncertainty the status of farming land	Alliance Local Regulation Documentation Custom Status	Stop activity Letting conflict between community and concession holder	Latent Manifested alliance Confrontation

Sources: Data, 2017-2018

In the Sungai Utik forest, the conflict happened between the local community and government (central and local government) including concession holders. In this case, to resolve the problem, the government stopped the activity and letting conflict between community and concession holders. Finally, the concession holder walks out from this area, but the license is still belonging to them.

Actually, the characteristic of conflict in Halimun Salak Mountain National Park is the same with the Sungai Utik Forest, but in this area, the conflict happened between the local community and National Park (central government), while the local government has given support to the local community to gain the National Park. In this area, there is a company utilizing forest for gold mining and tea plantation companies. But in this case, local community has no direct interest to the company. The conflict happened because the local community has no longer access to utilize their land claimed by the government as national park areas.

Table 2. Characteristic of Conflict in Halimun Salak Mountain National Park (HSMNP)

Cause	Process of Reconciliation		Type of Conflict
	Community	Government	
Value system The status of indigenous territories boundaries and access uncertainty the status of farming land	Alliance Local Regulation Documentation Custom Status	Stop activity Letting conflict between community and Central Government (body of HSMNP)	Latent Manifested alliance

Sources: Data, 2017-2018

The impact of conflict to local communities (Kasepuhan community and Dayak Iban community) has shown 2 (two) level, namely: group level and individual level. Both group and individual level has shown the positive and the negative impact.

Table 3. The Impact of Conflict at The Group Level in Kasepuhan Community and Dayak Iban Community

Positive	Negative
Defines issues	Increase bitterness
Leads to resolution of issues	Leads to destruction and bloodshed
Leads to alliances with other groups	Leads to intergroup tension
Keeps groups alert to member's interest	Disrupt of the normal channel of cooperation

Sources: Data, 2017-2018

Table 4. The Impact of Conflict at The Individual Level in Kasepuhan Community and Dayak Iban Community

Positive	Negative
Learning	Inactive
Energy	Passiveness
Creativity	Confusion
Change	Stress
Growth	Violence
	Diversion

Sources: Data, 2017-2018

One expression of their negative impact on young people in Dayak Iban is shown by the appearance of drinking habits. Usually, they only drink wine on "Gawai day" (harvest festival), now they drink wine every night. It not only traditional wine but also other alcoholic beverages that are sold installs.

### 3.2. Ecological Adaptation Strategy

Although various problems is already attacking them, Kasepuhan community and Dayak Iban community still have loyalty to their tradition. They have own regulation to manage and utilize land, especially for managing forest and rice planting. Faithfulness in carrying this cultural tradition out is their ecological adaptation strategy.

In forest management, They have local wisdom which dividing forests in some zonation. Dayak Iban community confesses that they have the forest. As Kasepuhan community, Dayak Iban community is arranging the forest-based on local knowledge. The community forest land is divided into 4 (four) areas. Firstly, a closed, protected area, functioning as a water conservation site. Secondly a forest preserve or a limited production forest area. Thirdly, a production forest area. This forest is for villagers collecting timber for house building and furniture. Fourthly, a forest site for community planting. Wisely, they plant rice cultivation by the specific pattern. This pattern is similar to Nomad planting plots where villagers would be back doing the same plot of land after an interval of 10-15 years. By the time they yet back to the plot they used to till. It would normally have become a fertile forest land again. Despite the utilization by the timber company will give them lots of money, but Dayak Iban community has chosen to maintain the forest by themselves, not for getting profit.

Also, Kasepuhan community has a zoning of forest management. The Kasepuhan community confesses that they have the forest. Arranging of this forest is based on local knowledge about zoning, namely core zone, jungle zone, reserve zone, and utilization zone (Rahmawati, 2012). They have rules for allowing or prohibition to do in the forest area. But, the government also confess that this forest is a government forest, consisting of production forest and national parks. Production forest located at the utilization zone of kasepuhan community forest. Kasepuhan community and government companies utilize this area together. Government company plant timber, while kasepuhan community uses this area as farmland.

In rice planting, they have local wisdom, such as the act of prohibiting the community to sell the rice until they are ordered to move on to a new place is still conducted continuously. All these traditions are always associated with the presence of the ancestor's command (wangsit), which continued to be maintained by the chieftain and his followers. The denial of wangsit will give impact in the form of punishment from Kabedon (in Kasepuhan community) or Tulah (in Dayak Iban community). The community still believes that a breach of customary law will be subject to customary sanctions called Kabendon/ Tulah, like a form of the disease which cannot be cured medically.

Basically, even if ecological conditions and local policy changes, but not very much affect the livelihoods of its inhabitants. Kasepuhan community has a history of involvement with the historical forest. This community has a primary livelihood as rice farmers. Generally, the public has a plantation area in a national park. When changing the status of forest (becoming a national park) in 2003, Some people have lost access rights to the

land. But some of them still remain working at the National Park area. National Park is still giving allowance to the community to utilize the land for planting rice in the same place, but there are some prohibitions: cutting the trees, although in their land and breaking new ground. Adaptation strategies undertaken by the community in this area are planting other commercial crops than rice which can be sold, such as kapulaga or crops. Another adaptation is shown by empowering family members (wives and children) to work for generating revenue.

The main Kasepuhan tradition is in a livelihood tradition which is based on rice farming. The main livelihood of the Kasepuhan community is farming in both the fields and paddies (Rahmawati, 2012). Agricultural patterns of the Kasepuhan community rest on a hereditary knowledge about farming methods that rely on the existence of trust in nature. Traditional farming patterns of the Kasepuhan community have shown a very close relationship between agricultural practices, social institutions, belief systems and natural elements including soil, water, air, sunlight, weather, and others. The basis of the agricultural model is based on local knowledge. It is based on traditional principles as the core of their knowledge including 'beuteung seubeuh, baju weuteuh, imah pageuh, pamajikan reuneuh' (a full stomach, new clothes, sturdy house, and fertile wife). It means that the result of working on farmland does not need to show high productivity that may damage caused the land, but the important thing is the result of farming could supply all the necessities of life, and even make life feel at ease as indicated by the concept of "pamajikan reuneuh" ( it means that they can still produce offspring and food needs are met.). Also, they have the ways of local knowledge in determining the time for preparing the land and the practice of processing the land for rice farming only once in a year, even in paddy fields would be so contrary to the modern agricultural knowledge with principles of intensification, where the principle of agricultural land can be tilled more than once even if you need three times a year in order to pursue productivity. (Rahmawati, 2012).

In the Dayak Iban community, they have 2 (two) kinds of livelihood, namely rice farming and rubber plantation. Also, they have tengkawang plantation, but it is not the main livelihood. In rice farming, they have the same custom with the Kasepuhan community. They use traditional knowledge to plant rice. They conduct traditional rituals. This rice should be enough for 1 (one) year or until the next harvesting. To support their life, they sell rubber, every day or in a week. Most of them have 500-10.000 rubber trees. They can get a rubber 10 kg per day. It means they will get at least around Rp. 150.000,- (15 dollars). Rubber becomes the main pedestal to support their lives. Other adaptations for some of them, especially young men have sought some jobs in Malaysia.

Patterns of ecological adaptations and strategies both of the Kasepuhan community and the Dayak Iban community are still living around the farm. But their struggle to gain recognition of customary rights of forest access never stopped.

The model of ecological adaptation in favor of human welfare and nature conservation is a model of local adaptation of it. Most of them relatively still survive in well-being, even if there are various ecological problems, both from natural (such as natural disasters), infiltration of modern knowledge and technology and institutional change. These conditions obviously affected people's livelihoods that leads them to seek new livelihood strategies. There are some situations putting them in difficult conditions (poverty), but because of institutional support and social support (food security system concept), they could solve the difficult conditions (Rahmawati et al., 2011).

Thus, it can be said that the adaptation strategies of the Dayak Iban community and the Kasepuhan community are having zoning pattern for forest management which setting forest land for the benefit of agriculture, utilization of wood for the house building in the conservation and sustainability concept. Forest has been a basis of the local community's livelihood for long. Forest as a place for developing agricultural systems that provide almost all food in the world has been occurring for millions of years and still going on until today.

However, it could not be ignored, that there are many factors which influenced the adaptation strategy. There are government policies, conflicts, natural disasters, population density, forest damage, seasons, technology, resource ownership, capacity/ economic opportunities and lifestyle (culture) (Rahmawati et al., 2011). All factors generally affect ordinary people's income. If all these factors are positive, they have a good strategy for facing problems. It showed by the economic effort growing to progress and income levels would also be nice.

#### **4. DISCUSSION**

The basic assumption for studying about the social and political aspect in environmental management, in this case, forest management, that environmental change is not only technical, but it is also a form of politicized

environment involving the interested actors, both at the local, regional and global (Bryant & Bailey, 2000). A situation of competition in which the parties are aware of the incompatibility of potential future positions (including incompatibility between ideologies) and in which each party wishes to occupy a position that is incompatible with the wishes of the other (Boulding k., 1963).

In the context of forest management institutions, the forest management systems cannot be taken away from the existence of the governmental regulation institution and traditional institutions hold by the community living around the forest long before it is claimed as a state forest. The overlapping of forest ownership and management gets clearer and becomes a problem when an institution is found to negate the existence of other institutions. A state, in this context, is a collection of organizations that, by making regulations and applying force, take over and control certain areas (Hall & Ikenberry, 1989). Various state organizations are competing and fighting in fulfilling their needs. Community, in this context, is a group of people sharing common identity and norms (Migdal, Kohli, & Shue, 1994). As in a state, the components of a community can be competing and conflicting one to another. A state and a community are forming each other through governance and refusal in various arenas (Migdal et al., 1994). The arena related to forests covers ownership rights, sharing benefits from forest, utilization, and protection of forest resources, job opportunity, political assurance, infrastructure, knowledge, and access to information. A state and a community possess different influential lines (Moeliono, Wollenberg, & Limberg, 2009).

However, a state and a community may compete and conflict with each other in fighting for forest management and utilization. In its development, a community institution may undergo changes in line with changes occur in other institutions including state or international institutions. The ability of a community to make various rules adapt to existing conditions shows the strength of an institution (Ostrom, E., 1990); (Wollenberg, 1998); (Buck, Wollenberg, & Edmunds, 2001).

The governmental hegemony over traditional community seen as the introduction of central governmental policies related to forest management and utilization have caused traditional community being negated from the land they have been claiming and put traditional community in conflicts whether against the government and businessmen over the rights for access to resources or against the community itself as commonly triggered by the introduction of new knowledge that impinges local knowledge represented in local traditional culture. Nevertheless, conflicts among various parties (government, businessmen, and community) have resulted in great shock in the community threatening their livelihood and causing deforestation on the other side. Meanwhile, changes in earning of living, institutions, norms, culture, and social order also occur concurrently. However, as a condition of each traditional community is different, the way they respond to various stimuli is also different.

## 5. CONCLUSION

In the framework of ecological complex, environmental degradation always originates from population problems. The dense population with an increasing population growth rate has caused various environmental degradations. But in this case, some of the destruction came from the government which has established a new institution. A term with this problem contain social and political aspect.

By taking the exemplary case of Kasepuhan community and Dayak Iban community, it is described that conflict in these areas are social conflict which is a struggle over values or claims to status, power, and scarce resources, in which the aims of the conflict groups are not only to gain the desired values, but also to neutralize, injure, or eliminate rivals.

In conflict situations, it is required many prerequisite conditions that must be achieved to support the adaptation of ecological communities. It is formed as a political ecology which making in favor of nature and society. For solving problems, it should be established collaborative management between government and communities, putting the community as a partner and local government intervention to provide a way poverty out. Many poverty alleviation programs should be conducted integrating with the environmental conservation program.

## REFERENCE LIST

- AMAN. (2010). *Reporting of Seminar and Workshop on the legislation plan of the Rights of Indigenous Peoples*. Retrieved from [http://www.aman.or.id/beritaaman/7/218.html?lang=en\\_GB.utf8](http://www.aman.or.id/beritaaman/7/218.html?lang=en_GB.utf8). 2010.
- Barber CV. (1998). Food Resource Scarcity & Social Conflict In Indonesia. *Environment*, 40, 4–20.

- Boulding k. (1963). *Conflict and Defense*. New York: harver and Rows.
- Broad, R., & Cavanagh, J. (1994). Borneo on the brink: Of rainforests and robber barons. *The Amicus Journal*, 16, 18–21.
- Brosius, J. (1999). Green Dots, Pinks Hearts: Displacing Politics from Malaysian Rain Forest. *American Anthropologist*, 101(1), 36–57.
- Bryant, R. L., & Bailey, S. (2000). *Third World political ecology*. Routledge: Taylor an Francis Group.
- Buck, L. E., Wollenberg, E., & Edmunds, D. (2001). Social learning in the collaborative management of community forests: Lessons from the field. In E. Wollenberg, D. Edmunds, L. Buck, J. Fox, & S. Brodt (Eds.), *Social Learning in Community Forests*,. CIFOR, Bogor, Indonesia.
- Buckles, D. (1999). *Cultivating Peace. Conflict and Collaboration in Natural Resource Management*.
- Curran, L. M., Caniago, I., Paoli, G. D., Astinani, D., Kusneti, M., Leighton, M., ... Haeruman, H. (1999). Impact of El Niño and logging on canopy tree recruitment in Borneo. *Science*, 286, 2184–2188.
- Curran, L. M., Trigg, S. N., McDonald, A. K., Astiani, D., Hardiono, Y. M., Siregar, P., ... Kasischke, E. (2004). Lowland Forest Loss in Protected Areas of Indonesian Borneo. *SCIENCE*, 303(13, Februari 2004).
- Dharmawan, A. H. (2007). Dinamika Sosio-Ekologi Pedesaan: Perspektif dan Pertautan Keilmuan Ekologi Manusia, Sosiologi Lingkungan dan Ekologi Politik. *Sodality: Jurnal Transdisiplin Sosiologi, Komunikasi Dan Ekologi Manusia*, 1(1).
- Hall, J. A., & Ikenberry, G. J. (1989). *The State*. Milton Keynes, UK: Open University Press.
- MacAndrews C. (1986). *Land Policy In Modern Indonesia: A Study Of Land Issues In The New Order Period*. Boston, MA: Oelgeschlager, Gunn & Hain.
- Macdicken, K. G. (2015). Global Forest Resources Assessment 2015 : What , why and how ? *Forest Ecology and Management*, 352, 3–8. <https://doi.org/10.1016/j.foreco.2015.02.006>
- Macdicken, K. G., Sola, P., Hall, J. E., Sabogal, C., Tadoum, M., & Wasseige, C. De. (2015). Global progress toward sustainable forest management. *Forest Ecology and Management*, 352, 47–56. <https://doi.org/10.1016/j.foreco.2015.02.005>
- Migdal, J. S., Kohli, A., & Shue, V. (1994). *State Power and Social Forces: Domination and Transformation in the Third World*. Cambridge: Cambridge University Press.
- Moeliono, M., Wollenberg, E., & Limberg, G. (2009). *Disentralisasi Tata Kelola Hutan: Politik, Ekonomi, dan Perjuangan Untuk Menguasai Hutan di Kalimantan, Indonesia*.
- NK, D., & Lincoln, Y. S. (2000). *Handbook Of Qualitative Research*. USA: Sage Publications.
- Ostrom, E. (1990). *Governing the Commons: The Evolution of Institutions for Collective Action*. Cambridge, Kerajaan Inggris.: Cambridge University Press.
- Rahmawati, R. (2012). A Study of the Kasepuhan (Sundanese) community. *International Journal on Social Science Economics & Art*, 2(2012)(3 (ISSN: 2088-5342)).
- Rahmawati, R., Pratidina, G., & Muarif. (2011). STRATEGI ADAPTASI EKOLOGIS DAN PENGENTASAN KEMISKINAN PADA MASYARAKAT SEKITAR TAMAN NASIONAL GUNUNG HALIMUN SALAK. *Sosial Humaniora*, 2(1 Oktober 2011).
- Wollenberg, E. (1998). A selective framework and typology for explaining the outcomes of local forest management. *Journal of World Forest Resource Management*, 9, 1–35.