

# An Investigation of Behavior and Public Opinion, Pros-Cons of Forest Encroachment Sustainability Issues In BBSNP of Tanggamus District, Indonesia

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**Abstract:** - The aims of this article are: 1) to analyze the behaviour of community in the environment of BBSNP, 2) to analyze the community opinion forming materials that create behaviours of the community. There is still encroachment caused by the perception of local community, so it affects their behaviours to keep encroaching. Bukit Barisan Selatan National Park (BBSNP) is spread in four districts, the biggest area is located in Pesisir Barat District (58.6%) of Lampung Province, in Kaur District (20.8%) of Bengkulu Province, Lampung Barat/West Lampung (16.5%) of Lampung Province, and Tanggamus (4.1%) of Lampung Province [1]. The study result shows the pros and cons opinion on occurring encroachment activity. Pros opinion is obtained from forest encroachers, former encroachers, and parties who support the encroachment. The understanding of community also has influence on the belief they have. The study result can be used by local government in applying policies that they enforce. The encroachment activity can be studied in multidisciplinary science and multi-method study.

**Key-Words:** Forest Encroachment, pros-cons, Tanggamus District, BBSNP

## 1 Introduction

Forest Encroachment is often harmful. However, it still exists in between community pros and cons. In some cases, the product of forest encroachment is used to fulfill their life necessities. This study is done in BBSNP of Tanggamus District, Indonesia where there are many encroaching activities in it, and by UNESCO, BBSNP is included in TRHS list. In Indonesia, there are five main islands that have the variety of plants and animals in it. Those islands are Sumatra, Java, Kalimantan, Sulawesi, and Irian Jaya. The Island of Sumatra has protected site known as TRHS. Tropical Rainforest Heritage of Sumatra consists of three national parks, which are: Mount Leuser National Park (MLNP), Kerinci Seblat National Park (KSNP), and Bukit Barisan Selatan National Park (BBSNP). This study is done in BBSNP which Unesco has put it in the list of endangered world heritage (TRHS), in accordance with Article 11 (4) Convention. The conclusion is the pros and cons are people continuing to encroach

on the forest and while Unesco is protecting it, and this goes on continuously [2,3].

Forests in Indonesia are disappearing into the alarming level. In certain cases, the poor people need for the continuity of their life. It gives the opportunity of conflict with local wildlife such as elephants. For example, the poor people living nearby Way kambas National Park in Sumatra compete with elephants for space [4].

The study about encroachment is located in Way Tenong Sub-district. The majority of encroachers are from Central Java, with the average age of 46 years old, which they are in productive age. They in average have the encroachment land which is two areas, and each area approximately is 1 ha. There are three types of land use, which are: 1) agroforestry farming, 2) intensive farming, 3) extension farming and bushes [5]. In brief, the definition of forest encroachment is taking forest products without the permission from the authority. Some ways of encroachment are by cutting down, planting, and burning the forest for the needs of group or individual. This

encroachment activity can cause the disappearance of animal habitats. The disappearance of this habitat related to the conversion of forest to be settlement, processing, and plantation has been the main threat for park and the life continuity of endangered species in it. The violation toward the rights on the plantation of coffee, pepper, and other farming gradually reaches the park and gives contribution to the disappearance of habitat substantially. Forest clearing in Bukit Barisan Selatan National Park also brings other serious threats to species which is illegal hunting. The definition of encroachment according to Article 50 paragraph (3) b of the Law No. 41, Year 1999 about Forestry is conducting forest area clearing without getting permission from the authority. The sanction of conducting encroachment in accordance with Article 78 Paragraph (2) of the Law No. 41, Year 1999 is imprisonment for at least ten years and fine of Rp 5.000.000.000,00 the most. Although the regulation of encroachment restriction has been determined, the case of encroachment is still occurring. Why does it happen? This study discusses on how the encroachment activity is from the concept of perception that they create. The conclusion is they continue to encroach on the forest even though there are regulations that prohibit it [6,7].

Actually, the prevention of this encroachment has been done by many organizations. The development of community forest is expected to be able to reduce the level of deforestation. Hisma, discuss deforestarsi, the life of harmony between nature and man: plants, animals and humans. Everything is expected to be a natural balance of this world. The impact will be enjoyed by all living things. This noble goal should be consciously shared as a common need [8]. For wider issues, these forest encroachment issues actually should lead to green intervention in order to promote the concept of preventive conservation. Nature conservation for green intervention keeps the preservation of the nature. The point is that the existence of this natural environment is for the importance of the living things. Thus, its preservation must be protected. Other way to love the environment is by involving people to be exposed to nature, in this matter the exposure toward nature that can increase the environmentally-friendly cooperation and behaviour. The participants who are exposed by nature video responded more cooperatively on the size of social value orientation and showed willingness more to be involved in environmentally-friendly behaviour. The environmental issues are considered as social

dilemma. This behaviour certainly is initiated by the attitude that cares for environment. The conclusion is the natural conservation and green interventions are useful for enhancing cooperation, harmony and eco-friendly behavior [9,10].

Moreover, the environmental managements are different in each country and national culture, from 28 countries involving in environmental managements show that the attitude toward environment is related to the environmental intention. Next, the control of behaviour partly can be felt because of the environmental intention [11]. A country in determining its policies certainly adjusts its geographical environment. As well as Indonesia, there have been policies in regulating forestry and environment. However, these regulations must be understood for the common good.

However, actually, encroachment cases occur not only in Indonesia. Some of effects are caused by forest encroachment, especially the extinct of plants and animals. Forest encroachment has significantly negative effect on diversity of birds and richness of species, that also affect specific farming land and Mediterranean shrub species. The other effect of encroachment in Northern Tanzania is the occurrence of human-wildlife conflict. It is a big problem for conservation because the plant damage and the depreciation of livestock by wild animals. It then causes economical disadvantage for local farmers so that it adds to poverty problems. Most of damages are done by elephants. The conclusion, the impact of forest encroachment is a conflict between humans and animals [12, 13]

However, there is also the case of forest management, for example in the Philippines, which is the interaction of community and the belief of local people with their natural environment and the macro environment of that country. The conservation and modern approach related to natural investigation, preservation, recovery, display, and appreciation of cultural heritage assets have been often discussed in important events and meetings in the field. The land management in a developing country and the management of community belief with natural environment should also be applied in BBSNP Indonesia, so the land management can maximally reduce forest encroachment. The point is that forest management can be utilized and adapted to local government policies. From the geografis state, the uniqueness of flora and fauna will create the uniqueness of a country. Of course this needs a comprehensive forest arrangement [14, 15].

The more encroachments, the more variety in

their opinion about empty land use. However, the difference in opinion is actually a common problem in community. Because community is a group of individual, individual is a part of a group. Therefore, community has the ability to think in accordance with what they are doing, including, the thought will be the 'right' or 'wrong' of an activity done. The issue in the form of encroachment basically is formed by community mindset relating to their belief, attitude, and perception.

The mindset crystallizes, so it forms opinion in community. Moreover, opinions on forest encroachment have been published on online media, for example in *republika.co.id* edition on Dec 6, 2011, in *Liputan6.com* edition on July 15, 2012, in *republika.co.id* edition on Dec 24, 2014. News on the online media is evidence that forest encroachment in Indonesia is worrying. These reports are assumed to lead to opinions of the local community. Why is the encroachment going on? Although actually the regulations in Indonesia already exist. However, in *ekuatorial* edition on June 18, 2015 discussing the encroachment in BBSNP, the Head of Bukit Barisan Selatan National Park Center explained that the encroachment in BBSNP is zero percent, but in further explanation, he stated, "there is no more citizen who builds shacks in the area of protected forest, but there is still coffee plantation found there". The existence of illegal coffee plantation in the area of BBSNP is an indicator that forest encroachment is still occurring. The conclusions are the next pro cons that the BBSNP chief says zero percent increment but there are still found coffee plantations in the region "it indicates that forest clearance continues [16-19].

The presence of opinions in online news or other media is the background of community opinion about forest encroachment through communication perspective. In the field of communication, news are communication media that generally have wide effect on their audience. Therefore, if encroachment becomes news/discussion topic, it means that it has the value of communication. The communication values among others are: personal values, relationship values, professional values, and cultural values [20]. *Many people who have the mindset that there is no choice to conduct encroachment as the fulfillment of daily needs.* That statement can be related to cultural values in communication, which is by discussing whether the encroachment is caused by dismissive attitude of community on the encroachment, so it make encroachers feel calmly to conduct encroachment. Therefore, it needs an effort to prevent existing

encroachment problem by previously reviewing opinions in the community. The urgency the study is to discuss comprehensively the community opinion about forest encroachment. The developing community opinion is formed by belief, attitude, and perception [21]. The belief meant is relating to someone's knowledge of something.

## 2 Methodology

The informant of study is as the following: three forest encroachers (one is an encroacher as well as a village chief), a former encroacher, a former Pekon chief (an encroachment provocateur), a forestry officer of BBSNP (partner of forest ranger), a secretary of sub-district. This study conducts a study using qualitative approach. The study informant selection uses snowball sampling technique from the population of 1,732 people spread in 6 hamlets. Data collecting technique uses interview, observation, and literature study. The data analysis is by: 1. Collecting data in a group (classification), 2. Giving name/attribute in the form of categories (categorization), 3. Interpreting by combining concepts and relevant theories (theory and concept are used to help understanding social action).

## 3 Result and Discussion

### 3.1 Formation of Community Opinion

Forest encroachment generally is defined as an incarceration of land illegally, both for plantation land or forest destruction by cutting down trees and animal hunting. And then the news in the mass media is assumed to influence public opinion. Although public opinion is not only obtained from the mass media Opinion can be stated through behaviour, action attitude, expression or body language or written symbols in the form of the clothes that they wear, or even the meaning of a colour. To understand someone's opinion and the public opinion, it is not an easy matter because it relates to its forming elements, which are belief, attitude, and perception of community. The following is the explanation of those elements:

#### 3.1.1 Belief

The belief mentioned here is not the one related to supernatural matters. that many individuals develop their belief based on the direction from their personal experience. Moreover, community tends to behave in accordance with their power and belief. Power or possessions meant are what we have (possession or ownership). In this matter, belief is actually included in individual's possessions. The result of the observation done by

Abelson, Robert P. & Prentice, Deborah also stated that various common linguistics expressions create a thought about belief: “we inherit or adopt opinions, we keep or hold on our belief, and when forced, we can give up on our principle or lose our belief” [22]. The belief of informants can be concluded that encroachment can increase community economic standard, and its result shows that most of informants believe that encroachment can increase income and economic of community, because the harvest is quite promising. However, we actually get belief not only from direct experience with the object, but also from others, institution, certain group, or reading material. It means that belief of community can be caused by community knowledge. There are some informants who have not understood the definition of encroachment activity mentioned. They believe that what they have done (gardening in the area) is not the form of encroachment. They understand that the meaning of forest encroachment is cutting down trees illegally. Although socialization has been often done, most of them have not understood and some did not pay attention to the socialization or assistance given.

This is the behavior of people who are pro and contra, some of them pro because they do forest encroachment because to add financial in their family. In addition, the forest encroachers say that they make encroachment because the land they use is the *tanah adat*. *Tanah adat* is the land of their ancestors.

### 3.1.2 Attitude

Attitude is a tendency to act. Attitude is built by belief obtained during their life, both from direct experience, information from outside and other conclusions/assumptions and from from self-development. Therefore, attitude can play as a determination of action. Moreover, attitude is a result of consideration from the following two matters: belief about advantage or disadvantage of the behaviour and belief of occurring consequence. The result of this study stated that there is a positive belief that encroachment can increase community economic standard (both from informants who consciously encroach and the ones who unconsciously encroach), so they have positive attitude toward encroachment. The positive attitude shown is in the form of action they do; support/defend that the land used in the forest area is still the property of community. who also stated that one factor that affects the occurrence of forest encroachment is social economic factor [23].

### 3.1.3 Perception

The root of opinion is perception. Perception is formed based on the influence of cultural background, experience in the past, and values believed / individual determination. Eventually, an opinion will be formed that later is supportive (pro), or contrast/opposite (cons). It includes how other people accept someone's behaviour/normative belief. However, perception actually has two forms, which are self perception and other's perception. If both are compared, there is difference. In this article, it also stated that some studies have confirmed that there is the difference between self perception and other's perception depending on the information, especially related to attitude, thought, and feeling. This study found the existence of experience in the past, about history of indigenous land disputes as community rights land, and government land which is protected forest/sanctuary currently in the form of National Park. Because indigenous culture is still strong, the community of Pekon Way Nipah that its population majority is Lampung tribe, they cling on the stance that the region that became the area of National Park is part of their indigenous land. Encroaching behaviour can be said to act aggressively, based on their knowledge for this long which is the area that is now the area of National Park is part of the indigenous land. Thus, basically, the encroachment is based on emotional process. The study of tendency to react aggressively, that is backgrounded by emotional process and knowledge or self-development is done by Rajchert [24]. Moreover, the perception also can change depending on the situational condition. The temporal shift in perception is for changing process. Stable change and perception shift of supporter from time to time differently affect the momentum that is felt related to the changing that is lead to the objective [25]. In The Chart No 1, it explains the belief of community that forest encroachment can increase their family economy. This condition and situation can affect the perception change. One informant explained that the cause of encroachment is that they do not have land to conduct farming activity. Thus, with the existence of wide land and not being planted, they think that this land can be planted as they might. “Because they do not have broad and wide land” (interview to one informant, February 2017). Generally, the main reason why they encroach forest because of the limited job for carrying on they life, and generally, they encroach forest because they have to. In fact, informants said that they are doing forest encroachment to improve their economy. In the case of certain

countries, indeed encroachment is a common thing done by the community. Availability of nature is still possible to be encroached. Encroachment behavior is called aggressive for reasons of poverty.

Behind the strong contention, there is an interpretation process. Interpretation is also obtained from environment satisfaction and environment comfort. The new theoretical framework for environment satisfaction and human comfort that highlights the role of human agent in interaction between human and environment and the context where the interaction occurs as the optimization [26]. The role of human agent in this case is the leader opinion, which there is a figure of local community who supports the encroachment. Interpretation is pushed by other factors, both knowledge and opinion from others. Opinions from leader or traditional leader in this matter give effect on most of community perception. It is meant as perception pushing factor in the form of believed values. As experience on the indigenous land disputes, the interpreting process is not missed. It is actually a big issue, if the community figure actually leads to negative matters. The community figure should lead to positive matter. For the needs of environment preservation, the leadership should be adjusted with the socio-institutional context, and its policy can affect behavioural aspect and process-designed aspect [27]. Certainly in this case, the community figure meant is only for special case. In certain matters, the opinion of the leader can affect the behaviour of others. Moreover, Kartika showed that there is a mass cultural pattern consisting of value, norms, and symbols that from someone's behaviour. The value owned by an individual will affect other's perception, if the person who influences is a trusted figure in community [28]. The social environment is their encompassing friends and facilitation (like a coffee grinder), the local culture is the habits of friends who come along, the perception is what they think about encroachment.

Moreover, it is caused by the border that is not clear. It means that community does not accept the government's attitude who determined main road in tens years ago as the border. Community expects the existence of reconsideration on the border because not satisfied with the decision of government about the border. From some opinions of informants, it is known that community perception about encroachment is mostly positive. It can be known from the response and understanding of community that the encroachment is an activity destructing forest such as illegal logging, not the land use for plantation.

Community has often obtained socialization from forest ranger about preservation, and has been often warned to not clear land in BBSNP. Thus, good or less good perception appears because the understanding and knowledge of community about the encroachment itself.

From various discussions above, it can be concluded that most of community who cling to custom show positive/pro opinion toward encroachment because they feel that the land they use is the indigenous rights land of community. Although there are some contra informants toward encroachment, it is because they work at government institution and have high education. Therefore, if we see from its process, then this opinion formation is through stages as the following:

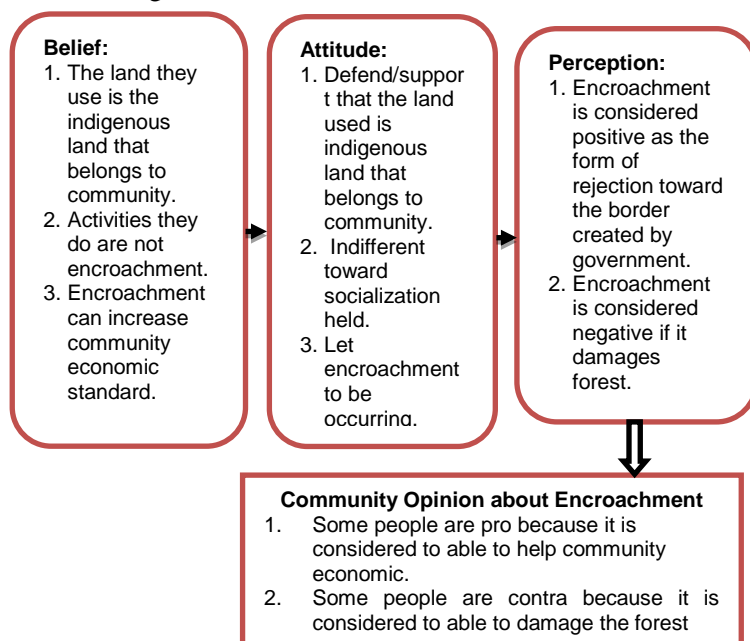


Chart 1. The Process of Opinion Formation, the study result in 2017

The description of Chart 1 is in line with the explanation of reasoned action theory, stating that individual belief becomes persuasion blocking stone. The stronger individual belief, the stronger to reject to be changed. In this theory, behaviour is formed from three important elements, which are belief, attitude, and intention. If belief describes the knowledge owned by an individual about an object, then attitude is his/her feeling toward the object. Thus, someone who believes that "Encroachment can increase community economic standard", he/she most likely will have the attitude of "I accept the existence of encroachment". Furthermore, the strength level of a behavioral intention is similar to the level of its possibility that someone will conduct a behaviour that is attached to the intention. Therefore, if in

order to know what will be done by a person, the best way is to know the intention/desire of that person.

There are several different behaviours when someone can conduct his/her behaviour relating to his/her belief and attitude. For example that someone who accepts the existence of encroachment, his/her behaviour might be among others: (1) not care with the existence of socialization, (2) providing supporting means for encroachment, such as coffee grinder equipment, (3) following to conduct encroachment. For more details, it can be seen on the chart below:

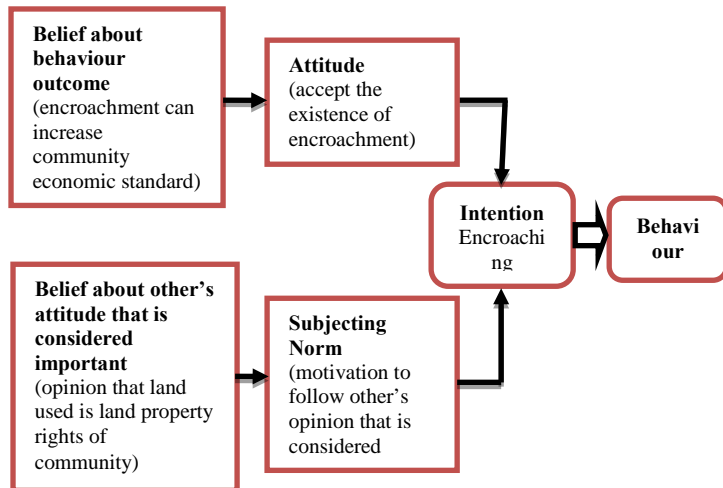


Chart 2. Study Application on Reasoned Action Theory, 2017. Modified from Fishbein and Ajzen in Baldwin [29]

Human is no longer viewed as an organism that reacts passively toward environment, but as an organism that always tries to understand its environment. Community has its thoughts on a problem and a solution that will be done. The problem exists when expectation and reality are not in line. As if there is a discrepancy between two cognitions (knowledge) of an individual, then he/she will try to reduce the discrepancy in many ways. If a dissonance appears, he/she tries to reduce the effort in avoiding situations and information that will increase the level of dissonance. In this study, there is cognition of "I know that I conduct forest encroachment", the dissonance with cognition is that "I know that forest encroachment is a violation". The result of an interview with 3 encroachers and 1 former encroacher found that if someone is put in a dissonant situation like that, then he/she will: (1) change the cognition about environment, for example by stating that only massive encroachment or illegal logging that harms the forest, (2) strengthen one of the dissonant cognitions by stating that other communities also conduct

encroachment, (3) reduce dissonance by deciding that one of the cognitions is not important, "it is not a problem to conduct forest encroachment because it is not private property, or because I do this in order to be more productive instead of letting the land empty". From the statements above, it is known that the response of the community on their environment depends on the cognitive factor (relating to the process of introduction and interpretation with reason and understanding), on the mental construction of the community. In this study, if someone supports others to conduct forest encroachment to form belief, attitude, and perception, then they become an idea that crystallizes so that it is called opinion. Opinion in the community can be support or rejection. Then, opinion in the form of support toward encroachment eventually also causes another forest encroachment.

### 3.2 Communication Value in Community Opinion Formation

#### 3.2.1 Relationship Values

The study result shows that there is relationship closeness among encroachers. It can be concluded from the quote of the interview result with informant 8, 18 February 2017, as follows: "Many of them are caught, there are also some of them who are grouped, when they are caught in the act, they support funds to be released. When they are still "on the top", pay them, because when they are taken to the office, they can not be able to pay". The statement explains that they, the encroachers, have homophile closeness (certain similarity degree), in this matter, they try to help each other in order to reduce risk. They help each other to reduce risks, that is in accordance with human motivation and interpersonal relationship concept. Its explanation is that personal change affects someone's perception on the self continuity [30]. The interpersonal relationship between encroachers when they are caught in the location of encroachment, they collect money to pay some money to the person who catches them. The interpersonal relationship between encroachers is built well by them, and they protect each other. This closeness is based on the common interest that is certainly for them to be safe in conducting the encroachment. However, from the other side, the relationship among encroachers will be very profitable for their life. They can work together for the continuity of the encroachment. In other words, they consider one for all, all for one. Because when being caught, all of them will experience loss, and to avoid it, all financial support will be given to be released.

Moreover, the relation among encroachers can be seen from their interaction. When there is a raid/control, they have the information. The agent informs other encroachers not to go up to the mountain/encroachment area. Based on the interview to Informant 8, 18 February 2017. The fellow encroachers who work as mentioned, it can be supported by other field findings, that encroaching activities are often discussed in group/fellow farmers' conversation. The continuity of forest encroachment has been supported by the good relationship between forest encroachers and people surroundings. In the case in the area of BBSNP of Tanggamus District, there are some comprehensive relationship between certain persons and encroachers (interview result to the forest encroachers, 2017), for example, when inspection will be held in the area of BBSNP, there is a person who informs "do not be in that area" because there will be an inspection. Because the information given, the encroachers are not in the area when there is an inspection due to the previous information. It becomes the cause of continuous forest encroachment. The result of field observation shows that there is the relationship community conducting encroachment and the one not conducting encroachment, so it causes the encroachment keeps occurring smoothly. It is known from the interview result that there are more than three coffee grinding places. Other informants explained that there is a hamlet similar to a village where the group of newcomer community housing is located. They also have their own equipments of coffee grinder. Figure 1 as coffee grinder machine. Figure 2 as temporary place of the local community, to cultivate the forest.



Fig. 1. Coffee grinder machine



Fig. 2. Temporary place of the local community

### 3.2.2 Cultural and Professional Values

The discussion about illegal fee habit as culture because this activity repeatedly occurs. Initially, it was only a coincidence, but gradually it becomes a habit. Why it happens? Because

from the party that receive it feels to have close relationship with the encroacher. It can be because they live in an area or have family relation, or even have similar degree in personality. It is similar to the statement stated by informant 2, 12 February 2017. That statement shows that the officer has pity on encroaching community, thus, there is sometimes an officer who releases them. However, it actually makes encroachment still exist because people who are responsible for this loosen it or have pity. It relates to the professionalism in the authority party. However, if it is reviewed professionally, law enforcement by officer is still not consistent. One of informants explained that "he conducts encroachment when there is no forest ranger (PPA), and conducts it at night" (informant 8, interview result in February 2017). Encroachment should not occur, but there are many kinds of occurring reasons and processes, for example forest encroachment by using quiet atmosphere such as night time. Night time allows someone to take something by force. It is done when the supervision is not available. As mentioned by the informant, the treatments toward the nature are different, depend on the local culture. It is affected by their perception. Other study explained two cultures that are different from different perception in the similar area. It was done by Criollo farmer and Wichis culture in comparing perception on extinction, conservation, and conflict of wild animals occurring in Argentina [31].

The opinion from other informant explained that they believe that if forest encroachment can make them rich. "We are now wealthy because of that". (Informant 3, interview result in February 2017). This perception lies behind their behavior.

From the pros and cons of understanding about encroachment in BBSNP of Tanggamus District, some informants understand and some others do not understand the meaning of encroachment. Someone's behaviour is influenced by perception they have. From that perception, they also will make decision. As well as in behaving, they adopt the practices of land conservation in local context. This localization also will affect the adoption way of land practice, as well as the farmer's decision making process that is very based on their perception on the power that encourages the degradation [32].

Actually, the prohibition of encroachment has already existed in Indonesia, but the poor still do the encroachment because of their perception. The study only discusses how the attitude of pros and cons of society background perception. And then, this perception affects people's behavior. In

this study, the existence of the relation between encroacher and village government such as village chief and pekon chief is found. The statement is stated by an informant who used to be an encroacher for 1 year. The explanation of informant 7, 16 February 2017. Based on the statement, it can be known that professionalism value of community and village government is also needed to be questioned.

#### 4 Conclusion

Pros and cons opinion about forest encroaching activity that occurs around the area of BBSNP is affected by perception, cultural background, experience in the past which is the history of land bordering, believed values, and developing news. Pro opinion is obtained from encroachers, former encroachers, and other parties that become the support for encroachment. Contra opinion is influenced by the background that forest encroachment can damage natural environment. Part of community still does not understand the meaning of encroachment. They assume that encroachment is a tree cutting activity and other destructions but not plants planting. The attitude is built from the community belief that encroachment can increase community economic level, both from direct experience and based on other's experience. The relation closeness of community and fellow encroachers, the relation of encroaching community with non-encroacher as the facilitator, inconsistency of law enforcement, or someone's political interest are also the part of the occurrence of encroachment.

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