

Institutionalizing Interaction between Local People and Protection Forest: A Model Proposed

Akhmad Sruji Bahtiar¹, Kliwon Hidayat¹, Soemarno², Bagyo Yanuwadi²

¹PhD Student, Faculty of Agriculture, University of Brawijaya, Malang, East Java Indonesia

²Lecturers, Faculty of Agriculture, University of Brawijaya, Malang, East Java Indonesia

Abstract

The practice of fence-to-fine management on protected area by Perhutani, the authoritative state-owned company on forests area in Java, together with all its manpower limitations leads the protected area in Gunung Arjuna region as an open access area. This research is aimed at formulating institutionalisation model of local people-protection forest area interaction. To attain the objective, a case study was employed, and the research was conducted in two borderline villages in Mount Arjuna Region which is sited in the sub-district of Prigen in Pasuruan municipal in East Java. A proposal on institutionalizing the interaction between local people and protection forest in Mount Arjuna Region is urged to Perhutani in order to rehabilitate as well as to sustain the area.

Keywords: Local people, Protection forest, Interaction, Institutionalizing

Introduction

The interactions between local people with their forests, including protected forests, are mostly colored with conflicts, both those of the social system (Yonariza and Webb, 2007; Ascher, 1998; Taberero and Hernandez, 2012; Stern, 2008; Upton, Ladle, David Hulme, Jiang, Brockington, Adams, 2008), and the one that happens between social system and ecosystem (Pires and Moreto, 2011; Young, Richards, Fischer, Halada, Kull, 2007). Moreover, conflicts also happen to human versus the protected animals in the forests ((Nyhus, and Tilson, 2004; Riley, 2007). Those who are categorized as social conflicts, in addition, happen horizontally between indigeneous community with investors (Barber, 1998; Burgers, Permana, Tu, 2011), and vertically between indigeneous people and government (Ascher, 1998; Taberero and Hernandez, 2012; Upton, Ladle, David Hulme, Jiang, Brockington, Adams, 2008).

The factors of both horizontal and vertical conflicts are the lost of communities' rights and access to gain the advantages from the forests. The communities, as a matter of facts, are mostly dependent to the forest products to fulfil their livelihood (Mainka, McNeely, Jackson, 2008; Schroth, McNeely, 2011; Kubo and Supriyanto, 2010). Hence, in order to protect the multifuntions of forest and their biodiversity, as well, a lot of research recommend the accomodation and the involvement of local people's interests and participation on managing forests (Henley, 2008; Yonariza and Webb, 2007; Djamhuri, 2008; Kubo, 2008; Tien, Sodhi, Prawiradilaga, 2009; Nguyen, Rossier, Schaltenbrand, Sieber, 2007; Nepal, Spiteri, 2011; Shresta and Alavalapati, 2006; Budhathoki, 2004; Wadley and Colfer, 2004)).

In relation to this awareness, Indonesian government changes the way on managing the forests: from fence-to-fine forest management to community based forest management. The change is materialized by amending the Law Number 5 Year 1967 about Forest Main Stipulations into the Law Number 41 Year 1999 about Forest. In the considerance of Law Number 41 Year 1999 it is stated that the amendment is caused by the awareness that the Law Number 5 Year 1967 has not been appropriate anymore to the recent needs in managing forests.

In practical level, however, especially in Mount Arjuna Region, it is found that community based forest management is implemented only in the production forests; while that in the protection forest and conservation forest is absent. The absence is contradictory to the stipulation in Article 1 Paragraph 26 of the Law Number 41 Year 1999 about the chance to implement community based forest management in protection forest.

The consequence of the absence, therefore, the protection forest has become open access area--the ultimate impact of which is the existence of Hardis's tragedy of the Commons. Hardin (1968) has warned that open access area condition gives big chance of the existence of overexploitation upon resources. This what happens in protection forest in Mount Arjuna region: completely deforestrated forest!

Upon this condition, Kaliandra Sejati Foundation initiated rehabilitation upon protection forest. Through integrated reforestration program called Forest Stewardship Program that has been implemented in the protection forest of Mount Arjuna region since 2009, it is hoped that the protection forest is rehabilitated. Once rehabilitated, the forest can be kept sustainable, as well. Up to this date, the program has been implemented for three times, namely in 2009, 2010, and 2011.

This research is aimed at evaluating the impacts of the implementation of the program on the change of the local communities' attitudes when interact with protection forest in the region. From the evaluation, the

suitable institutionalisation model on local community and protection forest interaction is formulated. Later on, the model will be able to be idiographically used in the site of the research, and tentatively used in other sites.

Methods

To obtain the objective of the study, a qualitative research on case study was employed. This method is selected due to the fact that the answer of the problem pursuents holistical approach upon object and views the object as a unity to natural context. The absent of natural context may cause the separation of phenomena from the context. In connection to this decision, therefore, in collecting the data needed, human instrument is employed. This is done because of its flexibility and sensitivity on capturing culture and meaning. In addition, as the consequence of the speciality owned by each culture, the result of this research is idiographically interpreted, meaning that no pretension to generalize the results (Lincoln and Guba, 1985:124).

The research was conducted in two villages in borderline of Mount Arjuna forest, namely Jatiarjo and Dayurejo in Prigen subdistric, Pasuruan municipal, East Java. in depth interview was conducted to key informants, subjects, and supporting informants. Besides the interview, primary data was also collected through observation. Finally, to complete the data and for data triangulation fulfilment, secondary data in the form of documents, newspaper, and reports are used as secondary data.

Result And Discussions

There are four interactional attitudes done by local community when they interact with protection forest in Mount Arjuna region. The four attitudes that do exist till the day of the research are threatening the existence of protection forest. They are removing woods from protection forest illegally, changing land use of the forest, charcoal making in the forest, and forest fire.

Among the four attitudes, illegal wood removal is the most serious threat. In the household level, the removal is in the form of firewood or house construction. But in some cases, wood removals are for supplying furniture market. Unless for subsection branch, all kinds of wood removals are done in the absence of officers. As long as the actions are not caught in action, the removers are safe to do it next time. Once arrested in action, the removers will negotiate to the officers to release them. If not, their family or friends will burn the forest!

In relation to this problem, the main agenda to do is changing the pressing attitude upon protection forest for livelihood fulfilment into friendly attitude upon forest. This effort is conducted by Kaliandra Sejati Foundation through Forest Stewardship Program, even though it is still in the trial phase.

The second threatening attitudes is change the land use of the forest. Land use change is done by cutting the woods, sometimes by burning them and then change the land use into garden. Changing the land use can be done due to the absent of Perhutani's officers in the field.

The third attitudes is charcoal making in the protection forest. This activity has caused the lost of casuarina tree and pines in Mount Arjuna region. Due to the possible accessibility up to the tip of the mount, the lost of the species happen completely up to the top of the mount. In the future, this activity may still exist for the market of charcoal Indonesia is relatively large. It spreads all over the cities in Indonesia.

Finally, the most serious threat upon forest degradation is fire. Fire in Mount Arjuna region is fashionably caused by many reasons. To mention some, it might be caused by fire that happens in other subdistrict of other municipal. The careless attitudes of hikers, hunters who cast away their cigarettes or leave their campfire can also be other causes. The next there is charcoal making in the forest that can also be a potent of being one of the causes. The next attitude, as mentioned above, is the protests of the community to government (Perhutani) that are expressed by burning the forest. The last but not the least is changing the land use of forest by burning the wood.

The existence of the four kinds of threatening activities in Hardi's (1968) view is called tragedy of the commons, meaning the tragedy caused by common opinion that if they do not take advantages upon natural resources then other people will do that. Hence, before somebody else take advantages upon the resources, let the resources come to ours. This condition is the same with the concept of tragedy of open access area proposed by Henley (2008). In the site of this study it was found that wood removals from protection area are done due to the absence of Perhutani's officers. To the local people's opinion, the absence of Perhutani's officers means a void upon the protection forest possession. It means that nobody can forbid them on doing anything upon the forest.

Once the tragedy of the commons happens, other kinds of tragedies called tragedy of the future¹ will also happen: the local people do not care of the future generation rights upon the protection forest. To them, their recent livelihood fulfilment is the priority. About the fate of the next generation? Let God do the rest!

¹ Tragedy of the future is tragedy caused by the ignorance the interests of the future generation.

In other words, it was found that tragedy of the commons is caused by tragedy of desperation². This tragedy is then followed by tragedy of indifference³, and tragedy of ignorance⁴. The local people remove the woods, make charcoal in the forest, and change the land use are urged by their basic need fulfilment, and ignore all signs sent by nature related to the crisis or damage. The urgent fulfilment upon their livelihood also pushes them to ignore the interests of the future generation. This condition is called desperate ecocide, an ecological damage caused by poor people (Blaikie and Brookfield, 1987), a condition that invites tragedy of ignorance (Diamond, 2005).

To summarize, the success of the rehabilitation of protection forest as well as its sustainability are dependant on the changes of local communities-protection forest interactional attitudes which cause five kinds of tragedies. Efforts on rehabilitating and maintaining the sustainability of the protection forest have been initiated by Kaliandra Sejati foundation. Related to this concern, the implementation of Forest Stewardship Program I, II, III by Kaliandra Sejati Foundation are evaluated whether it can change those threatening interactional attitudes or not. The evaluation employs Diffusion of Innovation theory by Rogers (1983), and Rogers and Shoemaker (1971) since the programs are seen as innovations in rehabilitating and managing protection forest.

In order to have an understanding on the programs conducted by Kaliandra, the followings are the description of Forest Stewardship Program by Kaliandra Sejati Foundation. It can be described that Forest Stewardship Program by Kaliandra Sejati Foundation is a program with the following characteristics: 1) it has reforestation program on a piece of land agreed by Perhutani as the authoritative institution; 2) after plantation activities on the agreed land, there is stewardship activities conducted by some local people who are appointed by Kaliandra, and each of which an ox is given to as compensation for five-year-stewarding the plants. As an additional note, the oxen are provided by Corporate Social Responsibility (CSR) division of enterprises who are sponsoring the program. Up to the date of the study, there are two multinational enterprises who get involved in the program, namely a drinking water enterprise owned by Danone, and another one is a cigarette enterprise owned by Rothman. The earlier company has got involved in Forest Stewardship Program I in 2009, and the latter has its involvement in Forest Stewardship Program II, and III in 2010, and 2011. The analysis of the adoption of innovation both by local people and by CSR of companies are the followings.

Firstly, to the local people who are appointed as stewards of the plants in protection forest, this program gives relative advantages, namely an ox which has equal price of IDR 4,000,000.-. The program also has high compatibility to local people due to their daily activities have been in forest and their dry field. Nevertheless, this program is deemed expensive and therefore unaffordable for local people to adopt since providing an ox for each steward is out of their affordability. As consequence, this program is only affordable for participating in—not for adoption.

The next anaysis upon adoption of innovation by local people comes to integrated program to the reforestation and stewarding plants activities. The integrated programs are in form of local people's economical empowerment and suitable technology development, namely installation of distillation maschine for betel vine, bio gas installation and communal stable, and organic agriculture. The analysis upon these integrated programs is described as follows.

Installation of distillation maschine for betel vine is admitted as a failure by Kaliandra Foundation. The failure is caused by faulty choice in terms of society preparedness. Bio gas installation and communal stable, moreover, experience rejection since their uncompatibility to the communities' cultivation culture. On the one hand, the communities are accustomed to cultivate their oxen in their dry field that are sited far away from communities' dwellers. On the other hand, bio gas installation and communal stable need to be installed in nearby. The last integrated program is organic agriculture. This program also experinces failure because of its complexity on nurturing the plants. In short, all the integrated programs to rehabilitation program own such high complexity characteristic that the community cannot afford.

Secondly, the analysis of adoption of innovation comes to that by CSR of companies. In general, it can be adressed that the adoption of the programs proposed and initiated by Kaliandra Foundation is fashionably low. The fact that only PT. Tirta Investama—a multinational water drinking enterprise of Danone, and PT. H.M. Sampoerna—a multinational cigarette company of Rothman who adopt the program is the evidence. This reality is caused by the weak demand in the Law Number 40 year 2007 about Limited Company concerning ecological commitment. As mentioned in Chapter V Article 74 and elaborated in Government Regulation Number 47 year 2012 about Corporate Social and Ecological Responsibility, the existence of corporate social and ecological responsibility is to build harmony in the interaction between company and the surrounding society. It means that Mount Arjuna region that located in remote area to the companies in Pasuruan municipal will never be in high

² Tragedy of desperation is tragedy caused by today's livelihood fulfilment.

³ Tragedy of indifference is tragedy caused by the attitudes of those who know the consequence of the damage but they just let everything go as usual

⁴ Tragedy of ignorance is tragedy caused by the ignorance of the signs of the natural crisis or disaster

priority in CSR fund allocation. The priority in CSR fund allocation is the surrounding society. In other words, only those who have big fund on their CSR allocation who can adopt the programs proposed by Kaliandra Foundation; whereas those who have only little money in their CSR fund will allocate those money to build harmony with the surrounding society.

It is rational, therefore, that the programs by Kaliandra do not give impact on changing the interactional attitudes of the local people to protection forest in Mount Arjuna region. Land use change, forest charcoal making, woods removal, and fire do happen till the study is conducted in the site. The situation that remains the same as that before the implementation of the programs.

The failure of the programs from Kaliandra to change the local people's attitudes is addressed to three reasons. Firstly, the programs cannot cover up the weaknesses of Perhutani in managing protection forest, namely letting the protection forest as open access area. As mentioned above, the weakness of Perhutani's management upon protection forest is letting the forest as open access area. Forest Stewardship Program cannot cover up this weakness because of fund limitation. The program can employ only hundreds of local people while those who demand amounting to thousands. The lack of the ability to employ more people cause the programs cannot solve local people's high pressures upon the protection forest causing desperate ecocide in open access area of the protection forest.

Secondly, the programs are difficult to be adopted. All the programs experience a halt of adoption, both by local people and by CSR of companies. To the local people, the programs are beyond their ability to adopt due to the fact that those programs are expensive in terms of money, and difficult in terms of skill and knowledge. These prerequisites are unaffordable since they are poor and lack of knowledge.

Thirdly, the programs give little impacts on changing the local people's attitudes upon protection forest. There are so many people who are dependant to protection forest that the programs can accomodate due to the lack of fund. Those who are not be able to be accomodated remain pressure the protection forest in the region.

Ignoring all the weaknesses of the programs initiated by Kaliandra, it can be underlined that the programs have contributed on raising the local people's awareness on the importance of the multifunctions of the protection forest. This awareness can be used as basis on elevating them on keeping the forest and all its important functions. Also from the above explanation, however, in order to change attitudes, coercions and constraints through policy are needed to be set side-by-side with awareness raising and assistance to the local people (North, 1991). It means that law enforcement must be also the concern in managing protection forest. This prerequisite, unfortunately, is the main weakness, among other weaknesses owned by Perhutani in managing the protection forest.

To overcome this problem, Henley (2008) suggests Indonesian government to take lessons from community based forest management. Actually, this management has been implemented in production forest, but it has been reluctant to be implemented in protection forest. In protection forests, Perhutani prefers fence-to-fine forest management to community based forest management.

Indeed, once the local people are arranged in community based forest management as implemented in Perhutani's production forest, the security as well as the sustainability of the forest are guaranteed. The forest is secure from any illegal removals, and the land is completely covered in agroforestry system. This condition, as Marten (2008) stated, is caused by closed access area management, meaning that there is no space for those who have opinion can do anything with no harm.

As a conclusion, Indonesian government may take lessons from production forest management where community based forest management is implemented. In production forest, the forest region is safe and sustainable; while in protection forest the land is in crisis and degraded. Hence, it is proposed that the sustainability in protection forest can be achieved if government (Perhutani) can accomodate the local people's interests and law enforcement is conducted to ensure that purpose.

Conclusions

The interaction between local people and protection forest in Mount Arjuna region is colored with four threatening attitudes that have caused deforestation and therefore will remain threatening in the future. The addressed attitudes are illegal wood removals, land use change, forest charcoal making, and forest fires.

Upon these four threatening attitudes, Kaliandra Foundation initiated an integrated rehabilitation program named Forest Stewardship Program which is a collaborative program among government, NGO, CSR, and society. Replantation on degraded forest land is the main program that is accompanied by local people's economical empowerment, and suitable technology development programs as integrated programs. The integrated programs are communal stall and bio gas installation, machine distillation installation, and organic agriculture.

The study has found that because of the limitations of the programs the threatening attitudes of local people when interact with the protection forest cannot be changed. another finding from the study is that the

local people's attitudes upon forest can be changed when government (Perhutani) changes the condition of forest from being open access area into closed area. This can be seen in production forest where community based forest management that is characterized by closed access area is implemented.

Finally, the study proposes a model of institutionalizing interaction between local people and protection forest. It is proposed that government (Perhutani) needs to change the management used in protection area from fence-to-fine forest management into community based management. Such a change that can replace the open access area condition in protection area into closed area.

References

- Anonymous. 1967. Undang-Undang Republik Indonesia Nomor 5 Tahun 1967 tentang Ketentuan-Ketentuan Pokok Kehutanan. Departemen Dalam Negeri Republik Indonesia
- Anonymous. 1999. Undang-Undang Republik Indonesia Nomor 41 Tahun 1999 tentang Kehutanan. Sekretariat Kabinet Republik Indonesia
- Anonymous. 2007. Undang-Undang Republik Indonesia Nomor 40 tahun 2007 tentang Perseroan Terbatas Sekretariat Kabinet Republik Indonesia
- Ascher, W. 1998. From Oil to Timber: the Political Economy of Off-Budget Development Financing in Indonesia.
- Barber, C.V.1998. Forest Resource Scarcity and Social Conflict in Indonesia. *Environment*: 40, 4.
- Blaikie, P., and Brookfield, H. 1987. Land Degradation and Society. Methuen. London.
- Budhthoki, P. 2004. Linking Communities with Conservation in Developing Countries: Buffer Zone Management Initiatives in Nepal. *Oryx Vol 38 no 3*.
- Burgers, P., Permana, R.P., Tu, T.N. 2011. Fueling Conflicts: Overcoming Asymmetry between Global Interest in Vietnam and Indonesia. *Development*, 54 (1): 77-84.
- Diamond, J. 2005. Collapse: How Societies Choose to Fail or Survive. London: Penguin Books
- Djambhuri, T.L. 2008. Community Participation in a Social Forestry Program in Central Java, Indonesia: the Effect of Incentive Structure and Social Capital. *Agroforest Syst 74*: 83-96.
- Hardin, G. 1968. The tragedy of the commons. *Science*. 162, 1243-48. - See more at: <http://www.personal.umich.edu/~rdeyoung/tragedy.html#sthash.WSNsNLTv.dpuf> (Diakses Pada Tanggal 13 Juni 2013)
- Henley, D. 2008. Natural Resource Management: Historical Lessons from Indonesia. *Human Ecology 36*:273-290. DOI 10.1007/s10.745-007-91.37.-2.
- Jessup, T., Peluso, N.L.1986. Minor Forest Products as Common Property Resources in East Kalimantan, Indonesia. In: Proc.of the
- Kubo, H. 2008. Diffusion of Policy Discourse into Rural Spheres through Co-Management of State Forestlands: Two Cases from West Java, Indonesia. *Environmental Management 42*: 80-92.
- Kubo, H., and Supriyanto, B. 2010. From Fence-and-fine to Participatory Conservation: Mechanisms of Transformation in Conservation Governance at the Gunung Halimun-Salak National Park, Indonesia. *Biodivers Conserv 19*: 1785-1803.
- Lincoln, Y.S., Guba, E.G. 1985. Naturalistic Inquiry. London: Sage Publications.
- Mainka, S.A., McNeely, J.A., and Jackson, W.J. 2008. Depending on Nature: Ecosystem Services for Human Livelihoods. *Environment Volume 50 No 2*: 43-56.
- Marten, G. 2008. Human Ecology: Basic Concepts for Sustainable Development. London: earthscan
- Nepal, S. and Spiteri, A. 2011. Linking Livelihoods and Conservation: an Examination of Local Residents' Perceived Linkages between Conservation and Livelihood Benefits around Nepal's Chitwan National Park. *Environmental Management 47*: 727-738.
- Nguyen, N.T., Rossier, P., Schaltenbrand, H., Sieber, P. Safeguarding Multifunctional Forest Ecosystems in Viet Nam. *Mountain Research and Development*; 27, 3.
- Nyhus, P.J., Tilson, R. 2004. Characterizing Human-Tiger Conflict in Sumatra, Indonesia: Implications for Conservation. *Oryx Vol 38 No 1*.
- Pires, S.F., and Moreto, W.D. 2011. Preventing Wildlife Crimes: Solutions that can Overcome the 'Tragedy of the Commons'. *Eur J Crim Policy Res 17*: 101-123.
- Riley, E.P. 2007. The Human-Macaque Interface: Conservation Implications of Current and Future Overlap and Conflict in Lore Lindu National Park, Sulawesi, Indonesia. *American Anthropologist*: 109, 3.
- Rogers, Everett M. 1983. Diffusion of Innovations. New York: The Free Press, A Division of Macmillan Publishing Co., Inc.
- Rogers, Everett M., Shoemaker, F. Floyd. 1971. Communication of Innovation. Second Edition. The Free Press. A Division of Macmillan Publishing Co., Inc.
- Shresta, R.K., Alavalapati, J.R.R. 2006. Linking Conservation and Development: an Analysis of Local

- People's Attitude towards Koshi Tappu Wildlife Reserve, Nepal. *Environment, Development and Sustainability* 8: 69-84.
- Stern, M.J. 2008. Coercion, Voluntary Compliance and Protest: the Role of Trust and Legitimacy in Combating Local Opposition to Protected Areas. *Environmental Conservation* 35 (3): 200-210.
- Taberner, C. And Hernandez, B. 2012. A Motivational Model for Environmentally Responsible Behaviour. *The Spanish Journal of Psychology, Vol 15 No. 2, 648-658.*
- Tien, M.L., Sodhi, N.S., Prawiradilaga D.M. 2009. Determinants of Local People's Attitude toward Conservation and the Consequential Effects on Illegal Resource Harvesting in the Protected Areas of Sulawesi (Indonesia). *Environmental Conservation* 36 (2): 157-170.
- Upton, C., Ladle, R., Hulme, D., Jiang, T., Brockington, D., Adams, W.M. 2008. Are Poverty and Protected Area Establishment Linked at a National Scale? *Oryx Vol 42 No 1*
- Wadley, R.L. and Colfer, C.J.P. 2004. Sacred Forest, Hunting, and Conservation in West Kalimantan, Indonesia. *Human Ecology* ; 32, 3.
- Yonariza and Webb, E.L. 2007. Rural Household Participation in Illegal Timber Felling in a Protected Area of West Sumatra, Indonesia. *Environmental Conservation* 34 (1): 73-82
- Young, J., Richards, C., Fischer, A., Halada, L., Kull, T. 2007. Conflicts between Biodiversity Conservation and Human Activities in the Central and Eastern European Countries. *Ambio* 36 (7): 545-50.

This academic article was published by The International Institute for Science, Technology and Education (IISTE). The IISTE is a pioneer in the Open Access Publishing service based in the U.S. and Europe. The aim of the institute is Accelerating Global Knowledge Sharing.

More information about the publisher can be found in the IISTE's homepage:

<http://www.iiste.org>

CALL FOR JOURNAL PAPERS

The IISTE is currently hosting more than 30 peer-reviewed academic journals and collaborating with academic institutions around the world. There's no deadline for submission. **Prospective authors of IISTE journals can find the submission instruction on the following page:** <http://www.iiste.org/journals/> The IISTE editorial team promises to the review and publish all the qualified submissions in a **fast** manner. All the journals articles are available online to the readers all over the world without financial, legal, or technical barriers other than those inseparable from gaining access to the internet itself. Printed version of the journals is also available upon request of readers and authors.

MORE RESOURCES

Book publication information: <http://www.iiste.org/book/>

Recent conferences: <http://www.iiste.org/conference/>

IISTE Knowledge Sharing Partners

EBSCO, Index Copernicus, Ulrich's Periodicals Directory, JournalTOCS, PKP Open Archives Harvester, Bielefeld Academic Search Engine, Elektronische Zeitschriftenbibliothek EZB, Open J-Gate, OCLC WorldCat, Universe Digital Library, NewJour, Google Scholar

