

How does Social Capital Matter in Managing Protected Forest? A Case of Indonesia¹

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Abstract: *This paper discusses the role of social capital in the implementation of community-based forest management in protected forest in Lampung province, Indonesia. In this study, social capital includes the social networks and interactions within communities between different interests and stakeholder groups in forest management.*

The study area has a complex settlement and forest management history. Local people live surrounding the protected forest in West Lampung as a result of government-sponsored resettlement programs and spontaneous migrations, particularly from Java island. Coffee was the preferred crop because of international and domestic demand. High coffee price during 1970 -1980 resulted in a large opening of forest tract for coffee production. Since the area is a water source for hydro-power, conflict between Forest Department and villagers could not be avoided. In 1990s, coffee plantations were uprooted and the 'squatters' were evicted from State forests-on the grounds that a coffee-monoculture is unsustainable. The fall of the Soeharto regime in 1998 and the birth of Reform era signaled the re-opening of forest tract.

A participatory approach was introduced in 1999. It aimed at involving local people in managing and utilizing the protected forest. A 'win-win' situation was proposed: old coffee stands could be maintained, but forest trees should be planted and funded by farmers. An official Reforestation Movement was initiated in 2003, requiring yet more forest trees to be planted. One impact was increased distrust to the Forest Department. Farmers saw the requirements as imposed and simply another way to re-evict them from protected forest areas. Traumatic prior experience together with inconsistent application of regulations were among the factors contributing to this distrust, although forest officers' attitudes have adopted a more 'down-to-earth' approach and meetings between Forest Department and farmers are frequently held. Another impact of Reforestation Movement was distrust within the farmer groups. The reason was unequal distribution of funds from Reforestation project, where some of fund is managed by the heads of farmer groups.

The study reported here explores the features of positive and negative aspects of social capital within the communities. Positive aspects of social capital are indicated by learning from other farmer groups on tree species, exchanging information on the involvement in community-based forest management, and group cohesiveness in

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preventing old forests from being cut by outsiders. Negative aspects of social capital included migration of labour during coffee harvesting.

Social capital is considered as an indicator of community cohesiveness; and its decline may implicate forest management. Possible impact include continuing expansion of the farming frontier into the old forest and copying of forest clearing practices for coffee by other farmers which is officially prohibited.

Key words: social capital, community-based forest management, win-win situation, distrust, down-to-earth approach, positive aspects, group cohesiveness, negative aspects.

Introduction

The concept of social capital which gains popularity for the last decade is associated with literature on collective actions. It makes a useful contribution to the study of social policy relating to sustainable development e.g. concerned with the environment and incorporating socio-economic aspects (Serageldin & Grootaert, 2000). Serageldin and Grootaert (2000) note however, that although it has been recognized as a necessary function within the social order together with cultural identification, social capital has not been well accepted as a capital.

There are many definitions of social capital proposed by different authors. However, Bourdieu, Coleman, and Putnam argue that social capital is a metaphor about advantage (Burt, 2001). Bourdieu (1993) understands it as 'connections'. Social capital as understood in the idea of 'connecting' links important social facts and ways of operating. Meanwhile, it often shows important social facts. According to Bourdieu (1993), capital is not only economical as in neo-classical economics. He argues that 'capital' covers economic capital, cultural capital, and social capital. In addition, non market social interactions have roles in determining individual and collective behaviour and shaping economic and social structures (Bourdieu, 1993). Bourdieu's concept of social capital is usually used for studying inequality and hierarchical social structures (Nuijten, 2005; Vihemaki, 2005). He focuses on the implications for individualism (Quibria, 2003).

Coleman's approach to social capital is based on its function. He defined social capital as "a variety of different entities, with two elements in common: they all consists of some aspect of social structures, and they facilitate certain actions of actors-whether persons or corporate actors-within the structure" (Coleman, 2000). This definition broadens the concept, giving it both vertical and horizontal interactions. Vertical interaction is identified by inequality. According to Coleman (2000), "social capital which is valuable in facilitating certain actions may be useless or even harmful for others" (p16). Furthermore, he argued that social capital is most likely to be formed in a closed community where informal norms and sanctions are particularly strong. He identified three forms of social capital: obligations and expectations, which depend on trustworthiness of the social environment, information-flow capability of the social structure, and norms accompanied by sanctions.

Putnam(1993) focused on civic engagement and the complexity of trust and participation to pursuit collective goals. According to Putnam, Leonardi, & Nanetti (1993) p167, social capital is "a feature of social organization such as trust, norms, and networks that can improve the efficiency of society by facilitating coordinated actions." He recognized the social network as the core of social capital. Dense networks of social interaction help to resolve dilemmas of collective actions, encouraging people to act in a trustworthy way when they might not otherwise do so (Putnam & Kristin, 2002) p7. Trustworthiness lubricates social life. It makes society work better compared to a distrustful society. In his later work (2002), Putnam acknowledged that social capital is not always a good thing. Some forms of social capital are good for democracy while others may be destructive. In other words, social capital is not always conducive to democratic governance (ibid: 9).

Putnam differentiated between “*bridging and bonding ties*” in our understanding of how social capital operates (Putnam and Kristin, 2002: 11). ‘Bonding ties’ refers to homogeneity, while ‘bridging ties’ refers to social networks across different aspects of society i.e. ethnic, age, gender and social class (Putnam & Kristin, 2002).

While the concept of social capital is increasingly recognized to contribute to sustainable development besides natural capital, physical or produced capital, and human capital (Grootaert, 2001), the concept of social capital also invites critiques. The concept of social capital and its application can be ambiguous since different authors use different definitions (Halpern, 2005; Quibria, 2003; Servon, 2003). It is difficult to judge the overall impact of social capital across multiple case studies since there are multiple definitions. Components of social capital are multidimensional, so its contribution to prosperity and good government depends on the characteristics of the components (Uslaner & Dekker, 2001). In addition, the discussion of social capital usually highlights positive outcomes and often undermines undesirable outcomes or ‘dark’ side of social capital (Birner & Wittmer, 2000; Quibria, 2003). Maloney, Smith, & Stoker (2000) criticizes Putnam’s neglect of the role of public authority in the creation and destruction of social capital. In addition, the concept of social capital may be used simplistically, not recognizing the challenge of governing in modern complex societies. Servon (2003) argued that participation might be a scarce resource for a low-income group. The argument is that the motive for participation of a low-income group may link to a real outcome e.g. money. Therefore, we should be aware by using participation as a social cure-all.

Another critique of social capital is whether it can be considered as ‘capital’ at all, since as a capital, it should fulfill a time dimension, it should be oriented to future benefit, and its ownership could be transferred from one person to another. But social capital as we currently conceive it could not be transferred to another person or in other words, it has no material reality (Quibria, 2003). Therefore, Quibria (2003) suggests using another term instead of ‘capital’.

In this paper I refer to social networks and social interactions as reflecting the concept of social capital. Social networks and interactions within communities and among stakeholders groups are among the factors which play a significant role in protected-forest management to achieve both development and conservation objectives. Servon (2003) argues that in dealing with equity and community development, the focus should be on bridging social capital structures where social capital is built among various groups instead within groups and the conditions which could bridge divergent groups are described and acted on. In relation to the idea of bridging social capital, Currie-Alder (2006) argued that social challenge for the management of protected areas is to negotiate new arrangements to share power and responsibilities.

I will argue that social interactions and networks within the forest communities contribute to positive and negative outcomes for these communities and for the department agenda associated with conservation effort and sustainable development. The discussion also includes the reasons which lead to the creation of social capital and the outcomes which result from the creation of social capital. In the first section, the historical context is

discussed. The second section will discuss devolution of forest management, which includes current interaction between forest department and communities. The third section will discuss the role of social capital within the communities. In conclusion, the relevance of social capital to the management of protected area is discussed.

The Historical context

Forest status and history

The study area is a protected forest in Sumberjaya subdistrict of West Lampung. That forest was classified as *Boschwezen* by the colonial Dutch in 1939. It covers an area of 8,295 ha (Agus, Gintings, & van Noordwijk, 2002). Most of Sumberjaya is protected forest and only a small part is the National Park of Bukit Barisan Selatan. This area is located upstream of Tulang Bawang watershed where Tulang Bawang watershed covers four districts in Lampung province (Pasya, Fay, & van Noordwijk, 2004). Based on the Indonesian forestry law, protected forest is a forest area which is designated for watershed management objective and for the protection of soil erosion (Forestry Basic Law no. 41 of 1999 which replaced Forestry Basic Law no. 5 of 1967). The Dutch regulations on nature conservation were replaced by the Indonesian government's law on natural resource and ecosystem conservation in 1990 (Hardjasoemantri, 1993). In the same year, the boundaries of State-forests were re-demarcated, including the protected forest in Sumberjaya subdistrict of West Lampung (Verbist & Pasya, 2004). Demarcation of its boundary was merely a restoration of the maps produced by the Dutch administration and earlier Indonesian authority towards land use.

Land use history

Until the end of 19th century, the area was still forested. At the end of the 19th century, the first tribal group (*Semendonese*) arrived in Sumberjaya from the North part of South Sumatra. Based on *adat* law, the first tribal group who came to the area may claim the land as theirs or *marga land* (Verbist & Pasya, 2004). They built the first village called Sukaraja in 1891, claimed the land and established community of Way Tenong. They further migrated to the south in 1920s. *Semendo* tribe introduced coffee plantation in the area which was called jungle coffee. The system used was slash and burn associated with shifting cultivation. The land was cultivated around 3-5 years. Then, the area was left, it reverted to secondary forest. After 7-20 years they replanted the previous area. Because of the isolated location, large scale forest clearing had not taken place. It took place after the opening of new roads in 1918 and 1925 and the introduction of the cultivation of *Robusta* coffee in the area (Schalenburg, 2004).

In 1951, government-sponsored resettlement programs who are the ex- Indonesian army arrived mostly from West Java (Heeren, 1979; Sutarman & Mustari, 1995). As a reward to the ex-Indonesian army, they were allocated the most fertile soil of ex-*marga* land. The transfer of land was done by the village head of Way Petai, sub-district head and *adat* head of Way Tenong (Sutarman & Mustari, 1995). In 1952, the area was named as Sumberjaya by the first President of Indonesia. The construction of other roads to the area in the early fifties made the market connection with the outside areas easier (Schalenburg, 2004).

Spontaneous migrations came later, as the second and third generations mainly from Java and Bali arrived. Today there are others from other parts of Sumatra. They were interested in coming to Sumberjaya because of coffee plantation. In the period of 1970-1980 the coffee price was high and more spontaneous migrants came to Sumberjaya. They utilized lands which were not used by *Semendo* tribal group for coffee and transferred it into irrigated-rice fields. Because of the dense population, *Semendonese* were forced to leave the area. Land degradation occurred very rapidly after 1976, in areas where protected forest was converted into coffee plantation.

During 1960-2000, there was the conversion of state forest into other uses i.e. coffee plantation and irrigated-rice fields. Although the Dutch administration system has been abandoned, many local people and migrants built settlements and practiced agriculture within the protected forest (Fay, Sirait, & Kusworo (2000), citation in Verbist & Pasya, (2004)). Previous Dutch administration system gave rights to *Lampungnese* elite to allow people to open land and charged them with tax. After the Indonesian's independence, Dutch administration system was no longer valid and has been replaced by Basic Agrarian Law No. 5 of 1960 (Verbist & Pasya, 2004). However, according to some villagers the previous government had officially transferred some parts of land to them (Schalembourg, 2004).

The conflict between forest department and farmers was resulted from different perceptions on conservation and the changes of watershed management. According to the Forest Department, the changes within forest landscape resulted in the decrease of conservation functions within the protected forest. Sumberjaya is the source of some major watersheds in Lampung province (Agus et al., 2002; Agus & van Noordwijk, 2005; Schalembourg, 2004). In addition, the changing landscape resulted in the decrease of water debit for hydro-power dam downstream. A hydroelectric power plant funded by the World Bank started in the mid 1994. Therefore, the Forest Department insisted that 50% of the protected area should be maintained as forested. Reforestation of protected forest in critical watersheds has started since the mid 1970s. To support the construction of hydro-power dam of Way Besai downstream, villagers were displaced to other areas e.g. North Lampung in the end of 1980s.

This classical approach which was implemented during the New Order regime (1966-1997) was rooted in the Dutch colonial. At that time, the government used "heavy handed" tactics to protect forest. They evicted farmers from the forests. This action was coupled with an environmentalist orthodoxy which emphasizes the impacts of forest incursion on the environment and does not acknowledge the impact of removal on the people-it protects the environment first (Warren, 1993). This suggests that to protect the environment, people have to be separated from nature (Vihemaki, 2005) and this philosophy has been the impetus for increased demand for fully "protected areas"-in other words, forests in which there are no people living or producing crops. In this case, the eviction of people from the protected forest was part of the politicization process around water issue, where water as a resource was needed for the operation of hydro-power dam downstream.

The eviction of communities from state-forest in fact led to a more unproductive forestland since the areas were left as grassland after farmers were not allowed to utilize forestland anymore.

The devolution of forest management

Reform era in 1998 which came after the New Order regime stepped down heralded a massive re-opening of forest tract. It occurred between 1998 - 2000. After the New Order regime stepped down, the power of the central government was dismantled. This created a new atmosphere for the liberation of actions and claims for rights which was absent during the New Order regime. Other factors included economic crisis and high coffee prices. High coffee price during the economic crisis was described to be able to make coffee business farmers rich. So, there were interrelated factors which drove the devolution of forest management in Sumberjaya.

Farmers who were not 'opportunistic' at that time, mentioned that Reform Era enabled them to participate in state-forest management. Previous head of district allowed farmers to continue to manage protected forest if previously they have utilized protected forest for coffee farms. In addition, the head suggested not to open a new forest tract and suggested farmers to plant forest replacement trees voluntary. Such approaches helped to reduce criminals in the areas and created job, particularly for landless farmers.

The involvement of farmers in managing protected-forest was proposed by farmers with support from NGOs starting from 1998. The role of the NGOs was to facilitate the process of negotiation. In addition, the NGOs helped farmers for local capacity building e.g. facilitating the formation of farmer group and a system for shared-planting within the group. Some groups have already been given written access to the protected forest while others were still in the negotiation process through self-empowerment or facilitated by the NGOs. In some areas, where the areas were relatively flat, the villagers hoped that the government would release the areas as privately owned for irrigated-rice fields.

The devolution of forest management which started in 1999 aimed primarily to rehabilitate forests that had been degraded. The involvement of communities in the conservation effort for land rehabilitation was done by allowing community to maintain coffee plantation but in the same time they were advised to plant trees. The prescribed trees included fruit trees and timber trees. In addition, the farmer groups were given rights and responsibility to manage the protected forest which was divided into 3 zones, namely: old growth, where no tree cutting was allowed; control zone where young forest regenerated; and utilization zone, where farmers could benefit from the products. Farmers were suggested to prevent the old growth and control zone from being cut.

Finally, decentralization took place in 2001 and regional government was given more authority from the central government. It included the management of state-forest.

Trust

Although devolution of forest management has taken place, trust between forest department and communities could not be built easily. It was because the government had lost the credibility as a consequence of the policy of the previous government. Farmers who experienced the eviction from protected forests in the past saw that eviction from protected forest caused traumatic experiences for them. The eviction from state forest took place during the New Order regime in 1995. Uprooting coffee plantation took place several months before 'peak harvesting' time. 'Peak harvesting time' occurred once only for the productive life-time of coffee plantation (7 years). Many farmers had great expectation for the coffee harvesting. Although forest department warned them to leave the forests prior to the forced evictions, there was no compromise or negotiation about leaving the protected forest when it occurred at harvesting time. Some farmers mentioned that the Forest Department promised them not to uproot coffee if farmers participated in reforestation program. In fact, although some farmers joined reforestation program, uprooting coffee still occurred. Coffee was uprooted by using elephants, the army, and people from other locations-leaving many farmers landless and depressed. Communities were offered to transmigrate to other places if they wished. Many farmers joined the transmigration schemes. However, many came back as the results of an inability to adapt to a new environment and land conflicts with *adat* (customary) communities in the new locations. Although lands in new locations had been transferred from *adat* communities for transmigration schemes, acceptance of new comers in new environment had many barriers. This situation is common when the outsiders came into a new area.

At that time the hydro-power dam project took place downstream in Sumber Jaya. It was built to provide electricity for the sub-district and surroundings. This project therefore became an alternative income for farmers who did not migrate to other areas. It helped release farmers from depressions since it could provide alternative income.

The issue of trust from farmers to state/government was not merely because of the relationship between the Forest Department and these communities, but was rather deeper than that. Various experiences faced by the older generations of farmers were recounted in this research project, with the acknowledgement that this is how the farmers became a disadvantaged group.

Even after the devolution of forest management through the acknowledgement of communities in managing protected forest, the changing regulations made them distrust forest department and they suspected eviction may occur again. Trust began to be built when the devolution of forest management took place. Previously, they thought that the devolution of forest management would give them certainty in managing protected forests. However, after 6 years of the devolution of forest management, many of them started to distrust government. The reason was that changing regulations which did not appear to be 'pro-people'. They interpreted the returning of reforestation program in the area, which ever occurred before the New Order regime stepped down in 1998 (the

reforestation program occurred more than once before the New Order regime stepped down).

When devolution of forest management took place, farmers were allowed to maintain coffee. However, they were advised to plant trees both timber and fruits for conservation and their tree planting were to be self-funded. The regulations evolved into ever more trees they were obligated to plant and the number was considered irrational. In 2003, more timber was requested to be planted through Reforestation projects. The underlying rationale adopted was based on technical responses for soil conservation, reaffirming an environmentalist ideology: conservation of protected forest would be defined by the amount of timber which should be planted. It is because of the forest status as a protected forest which provides water, particularly for hydro-power dam downstream. As the consequence, it resulted in the non-fulfillment of what the farmers considered a social obligation-the social aspect of collaboration, and more seriously impact was that it led to distrust from farmers to the government. This situation was interpreted by farmers as the possibility to re-evict them from protected forest – based on their previous learning from the evolution of the policy and history of the relationship between the government and communities. As consequence, farmers became uncertain in managing protected forest. The farmers' argument was that if all trees grow then coffee plantation would not survive anymore. Reforestation project did not allow farmers to negotiate the numbers of trees being planted. Instead, they were 'pushed' to plant certain amount of trees where the numbers of timber trees were higher compared to fruits recently. The follow-up of negotiation with several farmer groups was to continue planting trees, so not merely coffee in their fields. Farmers were not willing to plant fruit trees since they considered fruit trees unable to grow well because of the climate. Another consideration was market. Meanwhile, unwillingness to plant timber trees is resulted in the farmers' perception on forest status as a protected forest. In protected forest, timber trees may not be allowed to be cut. In fact, district regulation which regulates benefit sharing from timber has been issued. However, not all farmers know about that information.

The pessimistic opinion was mentioned by the farmers since they were always in a weak position in regards to changing policies. This situation made them uncertain and distrust the government even after the devolution of forest management took place. Legal written right has been given to farmer groups. However, uncertainty was still felt by farmers since there is no guarantee for sustained access even with written right. Therefore, written rights did not lead to a certainty to manage state forest. In other words, theoretically written access will increase the certainty. But, it is not always the case in a reality.

Changing policies did not only result in farmers' distrust to the government, but a feeling that the government did not trust them as well. The government's distrust to farmers was felt by the farmers, which was reflected from the requirement to plant more trees by the government. If the government trusted them, they would have been given autonomy to be self-funded in the forest rehabilitation activities.

The worse situation which may be expected if co-management of protected forest keeps insisting top-down approach on reforestation is fatalism. Such kind of solidarity distrusts

all forms of co-operation, in particular which deals with the government. The argument is that whatever farmers are trying to do, they have a little space for a negotiation. As a result, they are always on in the disadvantaged position. This position takes a social struggle which is often manifested as a silent struggle. However, this situation might not be realized by the government instead of relying only on one fact or reductionism way of thinking: a slowing progress of forest rehabilitation-giving emphasis on a slow changing of planting pattern without trying to understand the processes and the factors behind such situation.

Historical experiences really matter for building trust. Although present situation has indicated more deliberation or democracy atmosphere between the government and communities, the relationships in the past plus forest policies at present made trust difficult to be built from the farmers to the government. Past experiences i.e. eviction from state-forest, broken promises to sustain access to state-forests by the previous government, other incredibility done not only by the government, but also by people within communities could not be easily forgotten by farmers. Although proverbs said: not look back to the past, but look for future, in reality frequent bad experiences made people traumatic. While a more pro-people environment was just felt by farmers for a while, changing conservation policies which emphasized more conservation objectives added to longer lists of distrusts from farmers to the government. Accumulative distrust may result on the resistance to change even though it does not always lead to fatalism solidarity. Worse condition may be expected more from older generations who experienced more bad stories in the past compared to the youngsters.

Historical experiences also influence how farmers perceived trust. Younger generations who never experienced bad experience in the past have a more optimistic view on the co-management of the protected forest. As the reaction of changing regulations and reforestation project, some farmers saw that the regulation might evolve because of the progress of forest rehabilitation. Therefore, the changing regulations were the impact of limited progress of planting pattern where coffee monoculture still dominated. Compared to the previous opinion which mentioned that trust from farmers to the government was hard to be built based on past experiences and changing regulations after the devolution of forest management, this group mentioned different point of views. Although they did not ignore the past experiences with the government, they mentioned that the situation has changed after the New Order regime stepped down. At present, for co-management in protected forest the mechanism of trust should be as “take and give”. It means that not only the government should try to build trust to the farmers, but also how farmers should prove that they could be trusted by the government. In other words, trust did not come from one side but both sides between the government and farmers. The view reflected by the younger generation of farmers indicated that the reform era actually has led a power shift. Trust is not something that is impossible to be built between the government and communities where the government represented the domination in the past.

These optimistic farmers take a position as egalitarians. Egalitarians see that:

Many worldview concerns should be seen as common-pool resources. The non-renewability (or slow rate of renewal) of common-pool resources, in combination with their non-

excludability, will make their depletion imminent. The only solution is voluntary constraints on the part of all the domestic and foreign organizations and individuals involved. This reduced consumption will inevitably diminish the difference in wellbeing and status between people, which is the ultimate aim of egalitarians (Verweij, 1999) p31.

What has to be noted for conservation policy was that although decentralization has taken place, in relating to reforestation project the regional government has no sole authority for the management of protected forest. It included authority for the implementation of reforestation project. Reforestation project was supported by the central government and the regional authority should take a part in the reforestation program. Therefore, even though regional government's approach to communities has been 'down to earth' or takes an egalitarian approach, it did not help to change the policy of reforestation program anyhow. Hierarchical relation between the central government and regional government made regional government unable to take its own decision on reforestation program by considering local characteristics. The absence of independent decision making at regional level became an obstacle for the regional forestry office to build trust with communities-a factor which is significant for the collaboration on protected forest. Meanwhile, by not participating to the reforestation program organized by the central government, it might be described that regional forestry office has no loyalty to the central government. This situation showed a broader picture of decision-making process within forest department which has not been totally decentralized.

Frequent interactions between forest department and farmers were facilitated to re-establish trust, which was lost as a result of reforestation policy. So far negotiation process on how many trees should be planted was mediated by the NGOs. Here, farmers build a network with the NGOs to enable negotiation take place. The decision taken was that for the utilization zone, where farmers relied on coffee, the numbers of trees planted were based on the space available. Meanwhile on the steep slope which is a protection zone, more trees were required to be planted.

Social capital

Trust

The case also represented the impact of reforestation policy to the social capital within the communities, which is bonding tie or a horizontal relationship between people (Putnam et al., 1993). The impact of reforestation project was the decreasing trust within the communities. Reforestation project involved a large amount of money. The mechanism of this project was that for certain activities, money was distributed through the farmer group leaders and they were responsible for the fulfillment of reforestation activity. As the impact of this mechanism, a gap within communities was built. The issue was the transparency of the distribution of money from the elite farmers to the group members. In other situations, although group leaders have tried to be transparent in distributing money, it was quite often that the group members did not trust the leaders as being transparent.

Out of the willingness of the group members to plant trees, the real problem laid on the breaking down of group cohesion because of the project or the fragmentation within the groups. Farmers who were not involved in managing money felt that they were excluded

from the group of exclusive farmers since they were not involved in the decision making in relation to the money. Therefore, within the communities there was separation between farmers who were involved in managing reforestation project and farmers who were just the followers. Distrust among farmers created a wider gap within the communities. In other cases, some farmers who distrusted the farmer group leaders for the management of money and did not agree with the mechanism separated themselves from the group and formed a new group. The reason was to have access to money from the reforestation project.

Therefore, reforestation project did not only make farmers distrust the forest department, it also resulted in the fragmentation within communities. Trust as the 'glue' to lead to positive collective action decreased as the impact of conservation policy through reforestation project. Project-oriented which involves money might hinder the positive outcomes since it becomes a constraint to foster social cohesiveness within communities. More seriously, it destroyed the existing local social capital with further impact hindering the conservation effort by the communities. It means that the mismatch of the implementation of conservation policy may indirectly destroy existing social capital. Indirect result was to deter adaptability to the environmental change.

Networks

Although the involvement of farmers in managing protected forest required them to form farmer groups, there had been informal organizations within the communities. One of the informal organizations dealt with coffee. The organization organized a grinding machine for coffee. Each member might use the machine by paying certain amount of money. This money was used for the maintenance of grinding machine and a part of the money was used to provide financial support for running the administrative system of the village. This organization existed in a homogenous village where most of the people there were relatives. Therefore, self-formed organization had already existed for a long time. The village head was supported by the communities' financial support, a part of that was contributed from the village organization on coffee. In other words, the self-funded village administration is supported by coffee. Coffee plantations became the source of conflict between forest department and communities in the past since it was blamed as the reason of land degradation. However, besides its contribution to local economy, coffee which has been planted for generations was the 'glue' for social cohesiveness and networks. While we can hypothesize that the impact of global market is a reason to expect farmers to be more individualistic, one of the studied villages told a different story. Commodification of cash crops in the protected area, which was symbolized through coffee cropping still left a space for collectiveness. The tradition of helping other farmers for weeding coffee plantations in the village took place every week. This was a 'labour exchange'. They did not receive cash payment after helping other members do their weeding. Total labour spent in one's field and one's labour spent in other's field was calculated. In the end of the year the gap between the labour would be paid to the members in terms of money. Although money was paid every year, what was also important for farmers was social gathering. So, it became a symbol for the sustaining the networks among farmers within the village.

In addition, this 'labour exchange' became a safety net since farmers did not need to spend money for coffee weeding. It was similar to rotating credit scheme, but in this case labour was rotated rather than money. In that village, social capital was still strong. A farmer mentioned that in the village, there was a tradition to help others particularly during the difficult times. This case showed that there was an interrelated between social, cultural, and economic capital. It may encounter economic theory of *homo economicus* where people are self-interested actors who pursue their own interests (Clark, 2006; Uslander & Dekker, 2001). Cultural and social capital are illustrated by the tradition of weeding shared by farmers. Weeding the coffee plantations is able to sustain that tradition of sharing labour which might be brought by the first generation of *transmigrants* transformed from another cultivation activity i.e. irrigated-rice fields.

This self-created networks also helped farmers to exchange information e.g. on plantation. Farmers were willing to participate in such informal gathering i.e. through weeding activity voluntary compared to the participation in formal meetings for farmer groups. In addition, communication and exchange of ideas took place during farmers' daily activity in the field. However, such gathering was less recognized compared to the attendance at formal meetings in terms of active participation as a group member. Network established by the farmers themselves enabled them to adopt knowledge on trees which suits the climate in the areas and where coffee growing could best be integrated with other species. Here, without imposing intervention of the government, to change planting patterns, farmers actually also learnt through the establishment of their own networks. Although many farmers still believed that coffee without shading produces more compared that with shading, the belief has been changing gradually over time through the establishment of self-created networks. Networks were also established by farmers with other people out of the village to learn about alternative trees. To date, farmers still focused on the species where coffee could also grow or where coffee could survive despite the shade.

This case showed that farmers developed networks to increase their knowledge, rather than passive – awaiting only for knowledge transfer from i.e. NGOs, extension workers. Farmers are capable to be self-sustaining networks. In addition, they had a strategy to deal with uncertainty and risks in managing protected forest (risks for uncertain access). The strategy was by choosing species where coffee could grow with.

Relating to conservation policy through reforestation project, district regulations allow the possibility for farmers to harvest timber product in the future from trees they planted. The utilization is limited for their own consumption, and not for sale. This regulation has been a break through since it concerns the protected forest, where tree cutting is prohibited, based on the Forestry Basic Law of 1967 *jo* 1999. However, such information had not been widely circulated. Some farmer leaders mentioned that it was too early to inform the members about the future utilization of timber products which were planted through reforestation project. According to the leaders, they anticipated the possibility of new opening of grassland or new-generated forest for planting woody plants, if the members knew that timber might be utilized in the future.

Conservation effort for sustaining access

Protected forest which was located in adjacent to village was relatively dense compared to protected forest which was located some distance from the village. The farmers protected the forest from the outsiders. This was to both ensure their own needs were met and to ensure government did not blame them for poor management of the forest. The provision of water to the village is an example of ensuring their own needs were met. The reason was that the communities relied on the forest water sources for drinking water, irrigated-rice fields, and fish ponds. A water organization existed in the village. Through this organization, water was shared among members. The payment of water supply was collected as the organization budget. Water scarcity was experienced by farmers since two decades ago. Farmers mentioned that previously many farmers kept fishponds. However, because of water scarcity, many fishponds could not function anymore.

The effort to protect the remaining forest was also driven by the need to sustain local access to protected forests given by the government. Therefore, farmers prevented the remaining forest from illegal cutting by the outsiders. Since the farmers lived adjacent to the protected forest, they were afraid to be blamed if there was illegal cutting activity within the protected forest. Although their collective action to protect forest from the outsiders was aimed more at sustaining their access to protected forest, their forced action was positive in terms of its conservation effect. It protected the remaining forest.

Negative side of social capital

While social capital is usually associated with positive outcomes for collective action, a negative side of social capital must be considered. Solidarity and social networks may in fact result in in-migration to the area, increasing pressure on land clearing and provision of sustainable yields. Many people, mostly relatives from outside the area and even from Java, came for coffee harvesting and worked as share labourers with the forest users. They often decide to stay in the areas not just to help their relatives at harvest. Many worked with their relatives and when they had enough income, they sent the money back home to Java. They were given a parcel of land to cultivate or the system was by cash-crop sharing. It was also quite often that the relatives took over the land if the forest user moved to other areas or had other alternatives for livelihoods. Farmers mentioned that when their relatives came to the area and had no jobs, they usually let their relatives join them in cultivating coffee. It was also stated by other farmer group members. The farmer group usually tried to let the 'new comers' work on the cultivated land. They could not refuse 'new comers' to join them. Such solidarity was found in several locations surrounding protected forest. The regulation mentioned that forest user may not transfer the land to others, but in fact land transfer happened. Bilborrow (1992) in his report on transmigration program in Lampung province mentioned that spontaneous migrants are "tied" to government-sponsored migrants as relatives and they follow them to reside in the destination areas.

'New comers' might need more land. As a consequence, farmers cleared more grasslands. The main issue in the area was clearing more grassland for coffee. There were several criterion for grasslands. Grasslands might be merely *Imperata cylindrica* or

grasslands with the combination of young forest growth (young trees which started to recover). Previously, clearing *Imperata cylindrica* where old coffee stumps existed were allowed by the forest department. Later on it was prohibited since that policy created tension among farmer group members to decide who had rights to get access for *Imperata cylindrica* to be transferred into coffee plantation. It also created tensions among farmer groups since various kinds of grasslands led to debates whether it might be utilized or not.

Previously, after farmers were given access to manage protected forests, cases of clearing grasslands almost never occurred. However, when the coffee price was high, there were several cases of clearing grassland in the area. According to some farmers, high coffee price usually occurred every six years. When one farmer started to clear grassland, other farmers followed. They mentioned that if somebody did it, it was understood by others that clearing grassland was allowed by the forest department. Imitating other farmers to clear grassland was not discussed. As a consequence, farmers did not differentiate what kinds of grasslands might be cleared. If there was no regulation prohibited the clearing of youth generation of trees, young generation of trees may be also cleared for coffee.

The most likely impact of in-migration to the protected forest was more grassland clearing for planting coffee. Local authorities mentioned it as difficult to monitor migration to the areas because of lacks of personnel and co-ordination with other institutions e.g. forest department. In other parts of protected forest, which was beyond the control of local authorities several trucks bringing people from outside the areas arrived during the harvesting time to help their relatives

In the area, where farmers have already been involved in co-management of protected forest, the situation was less apparent. However, land transfer and land sub-division was common. While the co-management of protected forest aims to give benefit to farmers who rely on the protected forest for their livelihoods, many of them were not 'poor' farmers. Many participating in managing protected forest were white collar 'farmers' or business farmers. Meanwhile, farmers who depended on protected forest for livelihoods often acted only as contract labours for white collar 'farmers' or business farmers. Again, this requires local institution control to decide who may get access to the protected forest if social capital aimed to be activated for a positive outcome, which is the benefits of the community members. In other words, it is necessarily to strengthen the local capacity of informal institution. The intervention from forest department would not help since it was lack capability to monitor a huge area of protected forest. Meanwhile, in-migration, out-migration, market, and land transfer were beyond the control of the government.

The relevance of social capital to the management of protected area

The case showed that the protected forest has already become an open-system. In-migration, out-migration, market, and forest users are beyond the control of the government. Migration links to economy (market for coffee) and to solidarity of purpose associated with providing sustenance for those in the village, and this is (Thompson, Grendstad, & Selle, 1999) mostly based on the bonding 'ties' and social relationships

existing between the established village people and their in-migrating relatives. There is an interdependency between the different types of capital. In addition, their interdependency is also evident in the network created within the communities as these are symbolic, rooted in cultural capital, and economic. There is a complementary connection between social and cultural capital. Market forces do not drive only an economic objective goal and it is not as simple as moving from the collective to individualism, which is dominant in a modern society. I would say in this case, there is a transition from traditional to post-traditional. Therefore, collectivity as the element in managing the protected forest as a common good may still be expected even though there is a changing pattern of the attachment to place because of the migration. In other words, a collective action for forest management within a migration-culture context may still be expected.

Bridging 'ties' as a term borrowed from Putnam to illustrate hierarchical relation between government and communities also still makes sense in my case although global-local connection (glocalization) have taking placed and becomes something that could not be avoided. Putnam's bridging 'ties' is to illustrate a horizontal relation within society of different ethics, gender, sex, and others. However, I adopt that term to illustrate a vertical relation as well as a horizontal relation. Globalization which was characterized by migration both in and out-migration, the impact of global market for coffee, and global intervention on conservation in the study area still leave the need for a basic human nature in relation to social interaction i.e. trust. Trust becomes a critical point for managing protected forest as a common good. The establishment of trust may control individualism and competitiveness as the impact of globalization. Trust is a process. It needs to be established and maintained. In this case, the history of relationship in particular between the government and communities and uncertainty contributed to the way trust may or may not be established.

The role of the government is to make a socially acceptable conservation policy for farmers. By facilitating such effort, it helps farmers to foster their adaptability to the environmental change. In addition, conservation policy which is pro-farmers will help to build trust and it will foster a voluntary involvement in the conservation effort. On the other hands, it is also important to have a feeling of being trusted by the government since being trusted may lead to a real engagement with change. Meanwhile, the impact of irrational conservation policy on social cohesion of communities may exacerbate distrust within communities – and undermine this fundamental basis for a collective action. Therefore, irrational conservation policy could contribute to the destruction of the existing social capital within communities rather than to strengthen it. Further impact is to weaken the collectivity.

While older generations of communities more focused on the way the government should establish trust to the communities, younger generations saw trust between the government and communities as 'take' and 'give'. Trust is established as a two-way interaction rather than it should come from the government side only. Farmers also made a reflection on why conservation policy was changing over time in relation to their conservation effort.

This case also showed the ‘dark’ side of social capital and its consequence for the management of protected forest by the community. Solidarity and social networks result in in-migration to the area. The obvious impact was the clearing more land for the new comers. Such solidarity and social networks could not be halted. The issue on who are eligible for the rights in managing protected area may only be decided by local institution, not by the government or NGOs, since the protected forest covers a huge area. The ability of local institution to decide who should be given access to protected forest will also contribute the fulfillment of protected forest for supporting the livelihoods of people who are really dependent on state-forest land for livelihoods.

I conclude that social capital, cultural capital, and economy is interwoven and interdependency. Trust is a critical point in the management of protected forest. History contributed to the way trust may or may not be established. However, present situation showed trust as a reflection and ‘take and give’ rather than something that is required from the government. This case also showed the contribution of conservation policy to the destruction of the existing social capital within communities. Furthermore, ‘dark’ side of social capital could be notified i.e. solidarity and social networks. Those resulted in in-migration which had a consequence for more land clearing for coffee cultivation.

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