



Can Indonesia's Forests Be Saved? Conceptional Strategy For Securing Hill Zones In Protected Areas Through Agribusiness- Based Equalization And People's Forestry Business Unit

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Abstract

Speaking of economic prosperity and progressive national development in Indonesia, one should never pay inattention to the supposedly positive role of the agricultural community. The country's economic growth and socio-economic stability have significantly depended upon the agricultural achievement of 150 million peasantry farmers. With no agribusiness spirit and lack of environmental concern on the production side while consumerism has strongly influenced the daily life of the agricultural actors, then the entire economy of the country could never successfully move forward better. The economic deficit in the part of peasant's family life is strongly suspected of triggering extensive agriculture that eventually affects protected ecosystems, mainly the upstream. Environmental disasters and crises in the supply of food commodities would ruin the nation's overall economic strength. Therefore, this study aimed to understand the potential problems better and find determining factors to input better policy-making towards more effective agribusiness and agroforestry management strategies.

Keywords: Peasantry farmers, Agro-forestry

I. Introduction

The intensity of land use in hilly areas (upper land), especially for the agricultural sector, has increased in line with the pace of population growth and globalization of international trade, resulting in unwise land use behavior to pursue short-term interests. It is more concerning and worrying that land use behavior is not based on the principles of resource sustainability land and that behavior not only occurs in the cultivation system but also occurs in areas that should be conserved (Armanto & Wildayana, 2016;

Nasoetion, 1994; Sumaryanto & Irawan, 2001; Yu et al., 2010). In addition, the development of agricultural land use in cultivated areas has begun to coexist with protected areas which has implications for reaching the hilly zone. This condition is due to the economic pressure that is increasingly exacerbated by three socioeconomic symptoms. Namely, The population is increasing and spreading throughout the geographical area in the form of urbanization as well as migration penetrating the traditional primary sector; Job opportunities are limited, and Ipteksi

has not strengthened its productivity to be able to have added value insights and effectively trigger reinvestment that can create jobs; and Land grabs are increasingly common for various reasons, and the fragmentation of ownership is increasingly prone to 'involution' or being trapped in Malthusian traps that are not conducive to increased prosperity.

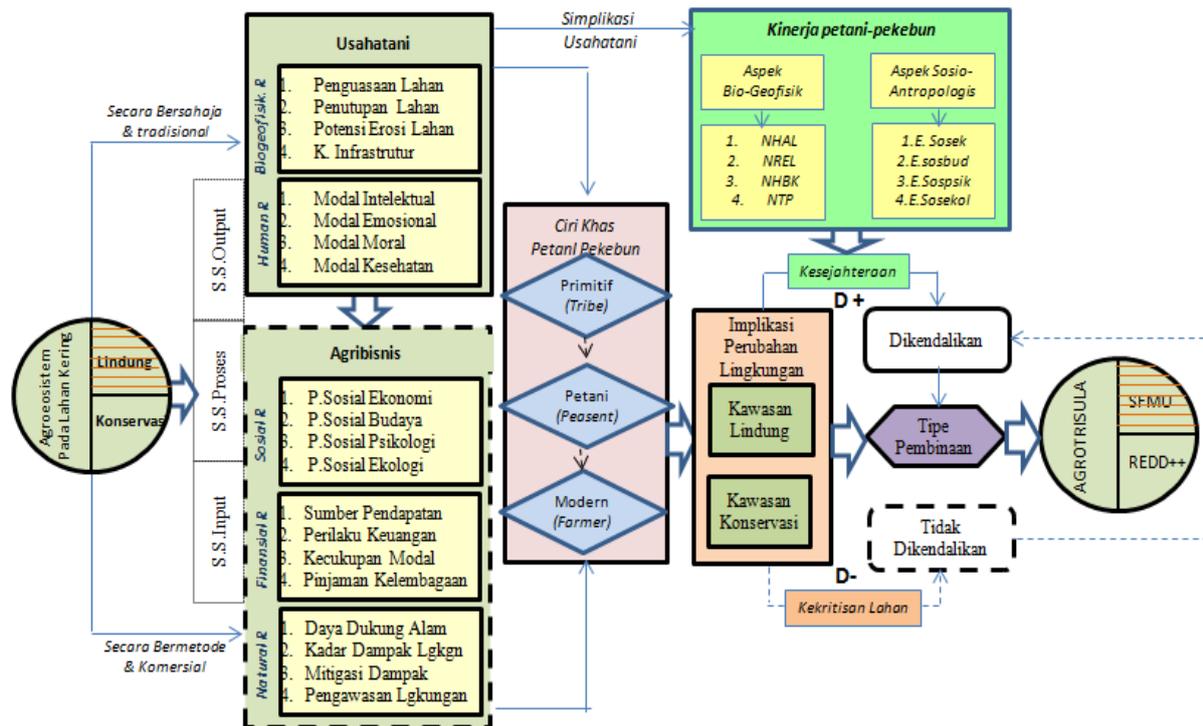
That pressure will undoubtedly impact down to the back line, namely on the existence of resources whose ecosystems are increasingly pressed by conversion efforts for various reasons of interest (Sari et al., 2017, 2021; Sjarkowi, F 2004). In addition, Indonesia's forest land is the principal capital in national economic development because it can provide employment, a source of income for the community, and one of the sources of income for the country's foreign exchange. Indonesia has 94.1 million ha of forested land, or 50.1% of the total land (Ministry of Environment and Forestry, 2020). For some parts of Indonesia, including South Sumatra, forests are an abundant resource. However, the lives of the peasants around the archipelago are still often disadvantaged, and this is due to various reasons: a) because the increasingly sharp fluctuations in commodity prices have severely suppressed NTP (farmer exchange rate = 1,005 in 2019; Furthermore, =1.13 in 2021) based on income to the value of family expenditure (BPS, 2018; BPS 2021) and; b) Because the bargaining position of producer farmers is weak and has not had time to be helped by commodity innovations supported by innovative business people and fostered by innovative OPDs that should be present in each district and City (Fatika et al., 2018; Sjarkowi, F 2020) c)

Due to various farming disasters so related to floods or droughts, disease pests, ignorant hand disturbances such as encroachment and theft of agricultural products (Bappenas, 2020). In addition, according to Fatika et al., (2018); Sari et al., (2017); Sjarkowi, F (2020), the role of villagers as the cause of the decline in area and the function of forest areas is often thrown by people. They are considered the main culprits of cutting liar and converting with the behavior of 7T, namely *tebang-tebas-tunu-tugal-tanam-tunngu-tuai* which can also trigger forest and land fires. So, a healthy forest ecosystem can be maintained sustainable if there is practical community agroforestry (social forestry) agribusiness policy.

Considering that most of the Bukit Barisan ecosystem area is a protected forest ecosystem, its security as the primary determinant zone for the hydrological function of the Musi watershed should be maintained from various threats that have the potential to damage it.

Therefore, it is interesting to study the relationship of surrounding human factors to touch-sensitive areas, especially those related to the level of welfare of traditional smallholder farmers and their possible role as a trigger factor for land intensification, especially forest encroachment activities. So from the novelty of this research, it is hoped that there will be opportunities for continuity and sustainability of prosperous living among villagers who continue to strive to make a living for family life as long as it is based on agribusiness. However, it will be a catastrophe for all residents if they are allowed to continue their old-style farming.

Research History



Modern (capitalist) economic theory cannot be applied to analyze rural peasant societies (Chayanov, 1966b). "Peasant society" is generally subsistence and should be treated as a "separate economic system" because it has an "economic rationality" that is entirely different from commercial agribusiness (Chayanov, 1966a; Fatika *et al.*, 2018). The provision consists of the necessary abilities, capital and activities as a means of life. Meanwhile, the provision will continue if it can overcome or recover after experiencing pressures and shocks, then maintain and even develop based on these three characteristics both now and in the future without degrading the natural resource base. At the same time, population pressure (births and migrants) causes the recovery time to be shorter (DFID, 2009). Departing from this thought, Nakajima (1986) views agriculture as an industry into three main categories, namely

1. the characteristics of agricultural production technology,
2. the characteristics of the farmer's *household* (farm household) as an economic unit, and
3. The characteristics of agricultural products as commodities.

Departing from the idea that the characteristics of the farmer's household (*farm household*) are unique because farmers can be producers, consumers, and at the same time juga as labor providers, the behavior of the economic activities of farmer households is based on the purpose of maximizing satisfaction. In allocating labor, farmers' households, as a source of labor that aim to obtain wages, use the labor they have for farming activities to reduce the cost of production farming. In production activities, farmer households act as producers who are authorized to determine the type of product/commodity to be produced/legalized by considering the resources owned. The behavior from

the contingency side is that the farmer's household acts as a consumer to maximize satisfaction with budget line constraints.

However, on the other hand, Malthus, (1798) and Ruthenberg (1971) mention that human breeding is faster than the production of agricultural products to meet human needs. This is based on the fact that agricultural land is fixed in number as one of the leading production factors. Although its use for agricultural production can be increased, the increase will not be much. On the other hand, agricultural land will be reduced because it is used to build housing, factories and other infrastructure. Based on this idea, Sjarkowi, F (2020) stated that a two-unit farming business and a unit of commerce (agribusiness) are different technical and economic contrasts. Therefore, the way of coaching must also be different, especially those related to the following three applied concepts:

1. The performance of any business is only habit-based without any renewal. Therefore the achievement of farm productivity depends on the compassion of nature and the development of a market climate that tends to increase slowly. If the income of farming is minimal, while the temptation to shop extra is getting bigger, then individual farmers tend to be easily tempted by land-selling transactions, and tempted to encroach on encroachment
2. The performance of individual farming of traditional smallholder farmers can be directed to become institutionalized as BUKD (eventually become BUMDes) so that through a similar business cluster approach, the role of agribusiness partnership institutions must also be used to suppress the

symptoms of forest encroachment and maintain harmony.

3. Agribusiness activities institutionalize partnerships for each similar farming cluster patterned with agro-forestry business units that are technically appropriate. They can be formed for new and old encroachment actors equipped with SOP references and a list of penalties and incentives for those who are recalcitrant or outstanding in supporting ecosystem management.

Research Content

Economically, the factor of demand and supply affect the price of land, which will simultaneously affect land use. From the supply side, it is influenced by productivity and land area. Meanwhile, definitions include price structures, income, population, beliefs, sociocultural values, prosperity, demographic structures, institutions, information and knowledge, and others (Dahl & Hammond, 1977; Pindyck & Rubinfeld, 1998).

Factors affecting land productivity or human ability to provide or regulate land needs. Conditions of non-fixed demand are due to the flow of situations related to the number of inhabitants, the level of income of the community, the needs and tastes of individuals, and the influence of technology to stimulate the demand for land and in the provision of its replacement While in terms of its users such as for housing is influenced by urbanization, the number of households, the number of inhabitants, changes in the age distribution of the population, the level and state of education. Industry or trade is influenced by the type, size, shape and location of the business and the presence of a potential market. Agriculture is

influenced by consumption patterns of agricultural products, land productivity and demand for non-agricultural land. Recreation is affected by population

numbers, income levels, leisure time, means of transportation, and non-recreational use (Barlowe, 1978).

Table 1. Social Entropy Indicators of Communities around Forest Areas

Indicators	Parameters	Measurement Limits (measured through)
Socio-Economic (<i>Fergusson; 1981</i>)	Income Expense Life style	Disadvantages of the main backrest Food shortages Limitations of the means of life
Socio-Cultural (<i>Coleman; 1998</i>)	Network Belief Norm	Sequencing urun Land obscurity Traditional land maintenance
Social Psychology (<i>Ryff; 1989</i>)	Self-Acceptance Persoanal Growth Environmental Mastery	Suspicion Dislike Unrest
Socio-Ecology (<i>Firket Berkes, 1993</i>)	Local Skills Local Knowledge On-premises resources	Inaccuracy of land location Forest destruction Land ineligibility

Source: DFID 1999; Sjarkowi, F. 2020; Chuzaimah, 2021; Adriana, D 2021 modification Novitasari, S. 2022.

Based on Table 1. This indicates the role of empirical studies with dimensions of socioeconomic, socio-cultural, socio-psychological and social ecology to detect operational steps that touch on the issue of people's life as a condition of the presence of a "win-win" solution of the ongoing conflict. For example, the socioeconomic dimension with its three parameters may imply the existence of a feature of community life that is all land-based. This characteristic means the extensibility of community business land as a business development carried out by most community members. If such a diagnosis is justified, then obviously, the socioeconomic therapy needed is the popularization of intensified business patterns and the creation of commercially

nuanced added value, for example, the "trident agribusiness" pattern that promises daily, weekly, and monthly income generation.

Similarly, the socio-cultural and social dimensions of psychology (productive, constative & deficient) are likely to hint at the characteristics of consumptive societies as determinants of their daily economic behavior. If such a diagnosis can be accurate, therapy is the correction of utilizing time towards productive performance, which should be necessary. Productive performance is appropriate (following the community's culture and level of education) and on location (in accordance with the availability and characteristics of natural resources).

Dimension socio-ecological (soskol), with its three parameters (total value of natural

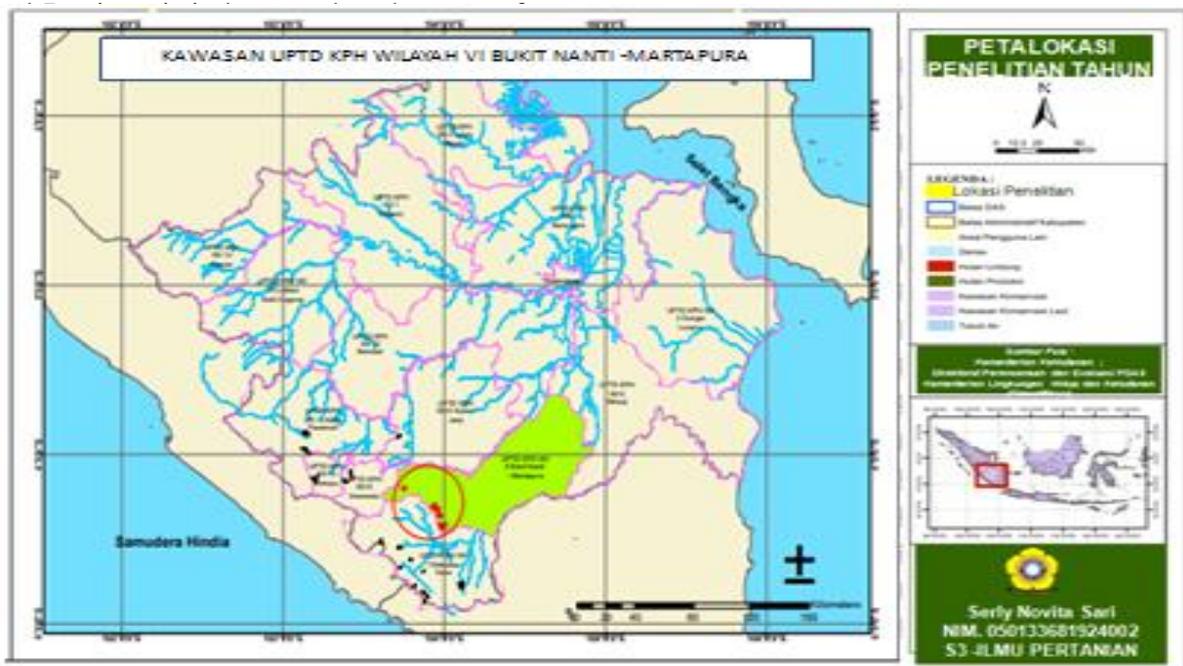
resources, interactive patterns of risk, and critical conversion rate), should diagnose the characteristics of community member interaction with their natural environment in building the well-being of life. As usual, the characteristic of "lazy" characterizes a society that lives amid natural abundance and wealth. If such a diagnosis can be justified empiric, then to the community, it is necessary to provide socio-ecological therapy that relies on the interaction pattern of local wisdom.

MATERIALS AND METHODS

The time of this study was carried out from February 2020 to December 2022. Secondary data collection was carried out from February 2020 to December 2021. Meanwhile, the primary data collection in the study's target area was carried out from November 2020 to December 2021.

Data from the 2014 BPDAS Musi Critical La

critical land of the Musi watershed for the critical category is 177,232.51 ha (2.28%); the very critical category covers an area of 12,877.94 ha (0.17%); and a critical potential category of 2,393,028.86 ha (30.84%). The level of damage and criticality of the Musi watershed is indicated by the critical land area reaching 1.7 million hectares. The forest cover area in 2014 was only 14.4% of the Musi watershed area. However, the focus of the research area will only be carried out at the Lengkiti and Ulu Ogan Resort, covering an area of 3,900 Ha. Concerning the regulation of the Regent of Ogan Komering Ulu Number.31 of 2014 institutional KPHL Unit V. As for the sample farmers in this study, as many as 120 heads of family families in the hilly area of protected areas with a sample area of 3,900 ha.



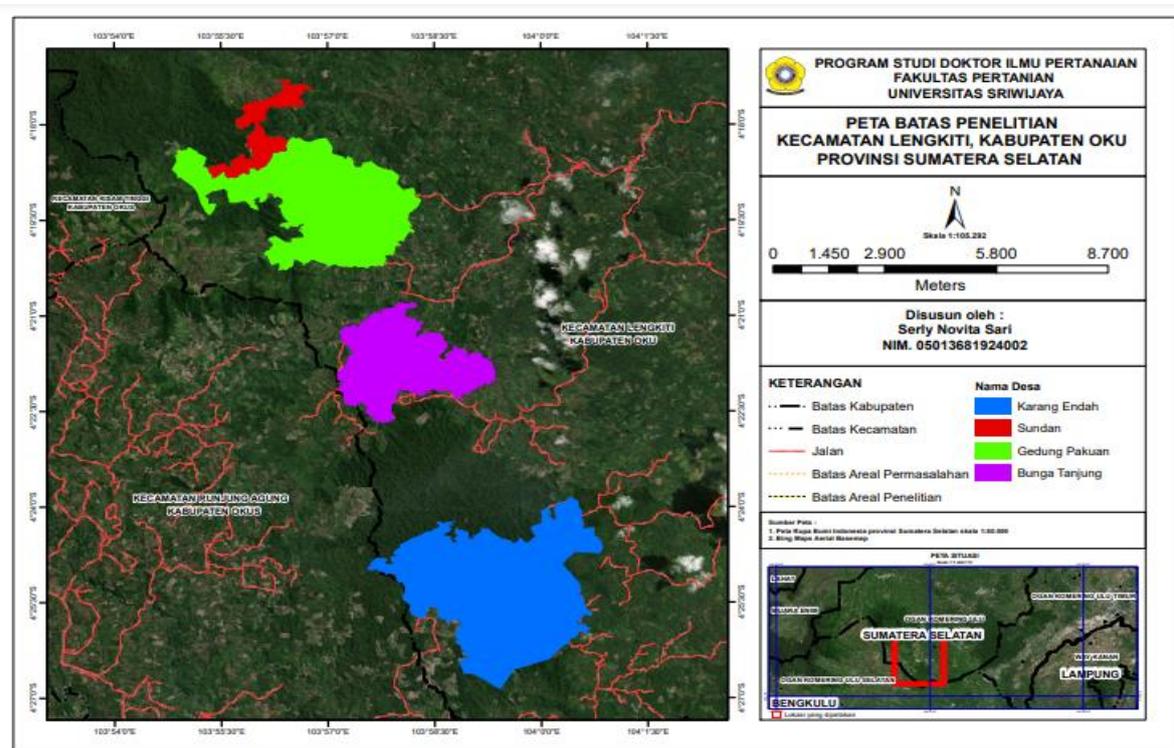


Figure 1. Target Map of Bukit Nanti Protected Area Research Location

RESULT AND DISCUSSION

In many rural parts of Southern Sumatra (Sumbagsel; and it is believed that it will not differ much from other regions), there are three characteristics of people's lives, namely: a) land-based living; b) half-unemployed life; and c) consumptive ganderung life. Regarding land-based living, business land extensification (not the other way around with the intensification disposition) still characterizes the population's lives. Insecurity is easy to grow in such a society. If there is an economic difficulty due to crop failure or product prices fall, these people's lives will be destitute. However, if there is success in the farming economy, then the appetite for expanding the business with extensification will spread. From here, one day, the forerunner of social greed will grow, especially if

provoked by provocateurs to sue through the issue of land rights and unfit land compensation.

In contrast, among the provocateurs, some try to fish in murky waters. Half-unemployment is not due to the absence of natural resources or jobs. Especially among the younger generation (out of school), their reluctance to follow and modernize parents' life footprint as traditional farmers makes them half unemployed.

When they decide to have a family, the lack of preparation for life will force them to practice the natural livelihood of parents who have been directed for generations.

This unpreparedness to live outside the family very quickly encourages the growth of social jealousy, especially when people face development inequalities across

spaces and sectors and tribes and even across beliefs.

Likewise, the increasingly consumptive attitude of life is closely related to the aspect of social snobbery. This is spurred by advertising information, media, and films featuring a hedonistic and materialistic lifestyle. From this grew a culture of seizing potential by violating even human rights, such as plundering other people's gardens, stealing rubber blocks in the pits or snatching fish in ponds ready for harvest. This is what social snobbery means, which is reflected in the unintended style of a party willing to whine at the other party. In order to create harmony in the business environment, the nature of society and the quality of human resources behind it must be fully understood. That way, potential social and environmental problems will be overcome by acting out the keys to relevant solutions.

From here, the seeds of greed to deprive the land or other negative manifestations will flourish. When environmental conflicts are still a necessity given the attitude of wrath, it is very noticeable human limitations and limitations of fundamental data to manage each stretch of the environment with all the dynamics of change due to a touch of development. In this case, what is realistic is not to eliminate the environmental conflict from reality or vice versa but to be silent and resigned to the environment. Instead, how to be prepared with a management strategy that can take any environmental conflicts between development actors such as entrepreneurs and ordinary communities around every business activity. The correct pattern of conflict management (not="

management by conflict") should be found in a way out that is a "win-win" solution that guarantees real benefits for the continuous improvement of community welfare.

Management of Environmental Partnerships through Institutional Proximity Strategies

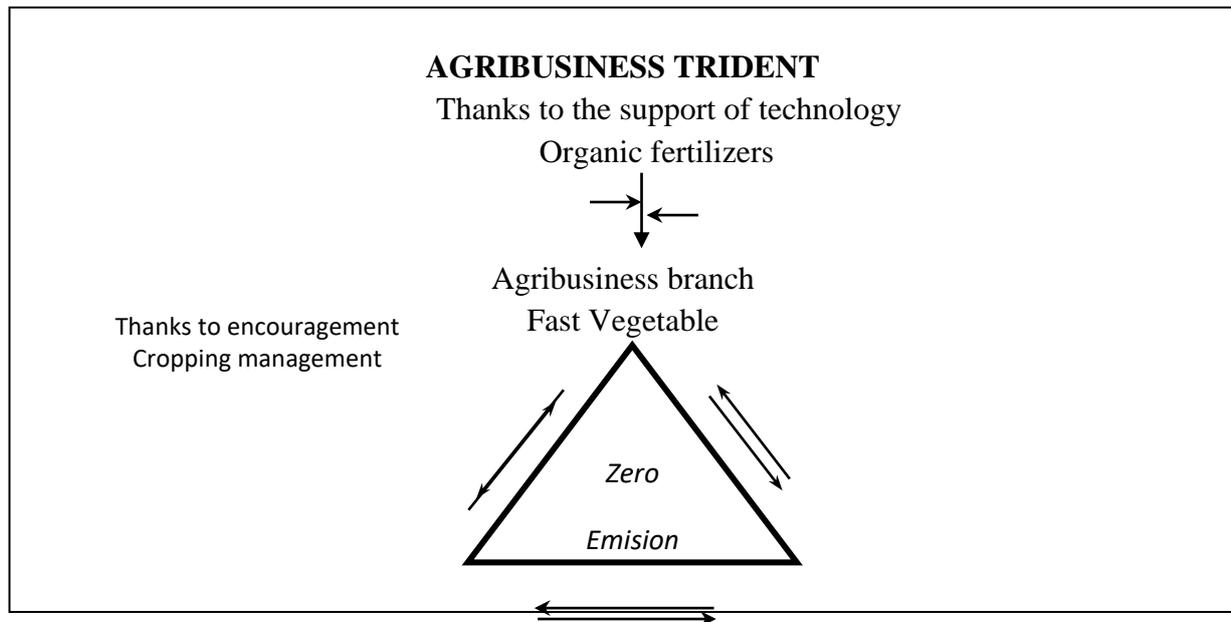
Environmental conflicts can be turned into environmental partnerships, of course, if the correct environmental management is applied consistently and consequently at the company and the regional community levels. In tracking potential partnerships, three environmental factors usually arise, namely: (1) Population growth disparities and science and technology must be considered; (2) the Impact of environmental eutropy; and (3) Impromptu environmental risks. The first two aspects can be weaned freely in each article of the management program towards partnership, while the third aspect requires the strategy of managing the stuttered. From efforts to get around the partnership pattern that benefits all parties of the government-entrepreneurs-farmers found three alternative ways out. The three are

1. FM (Forest Management) pattern partnerships,
2. The partnership of FRM (Forest-Resource Management Kemargaan) pattern, and
3. PARTNERSHIPS in ARM (Agroforestry Resource Management) pattern supported by people's livelihoods through the Trident of People's Agribusiness program.

This is because the environmental impact should indeed be overcome by first empowering the community's economy

and pioneering the formation of institutions that can break the negative attitudes of the community into socially and individually transitional communities. Attempts to break the nature and greed of such a society must naturally be business-tinged as well. The business in question

must be so productive (trident right) that it can bring in a fast and regular income so that members of the public are not allowed to think and act outside the productive path that benefits him and his surroundings.



Agribusiness branch. Fish Agribusiness branch Livestock Fast healthy & feces

Figure 2. Schematic illustration of agrbusiness Trident

The term Trident means 3 spearheads; schematically, it can be exemplified in Figure 2. The advantages of the Trident business pattern are: (1) Technically efficient (*Zero Emission Activity*), (2) Economically practical (income: daily, weekly, monthly), (3) In terms of social unemployment, the pattern offers activities to keep the community and its labor force busy.

Daily income is obtained from fast vegetable farming, weekly income from the sale of catfish, and monthly income is obtained from the sale of goats or rabbits and ducks.

The concept of fast vegetables is carried out using bokashi technology for kale pulling out; planting is carried out gradually so that harvesting can be done once every 3 days after the 21st day (harvest period) due to the presence of organic fertilizer technology as a source of mineral nutrients; & use of high-yielding seedlings. It is quickly carried out for the concept of fish because it has several advantages: it is easy to fit the environment & easy to be significant, and the potential of the surrounding nature can support the feed. Harvesting Catfish Dumbo for example, can be done once every 1 week after 2 months 10 days of the

first stocking & then once a week. At the same time, the concept of healthy livestock can be leg-4 cattle. The manure is valuable, and the results are easy to make money because it can be sold in the Hajj season or at goat satay stalls. Meanwhile, duck eggs are a daily source of cash as well.

It seems that the Agrotrisula business system is ZERI (Zero Emission). With technical and economic characteristics that have positive implications for the natural environment, social environment and built environment, the Trident business form (agribusiness) has the potential to overcome socioeconomic problems and unrest and social greed in the region. The only problem is how to transmit the business pattern to the community. Considering that efforts to empower and promote the lives of farmers cannot be made with the essence of turning the palm, the socialization of the Trident business must be grown from below. It is not developed by trolling farmers from above. Therefore, the community development strategy must be pursued with a particular instrument that is deliberately made, namely the Trident PLOT.

The implementation of the Agro trident plot will thus function in two, namely: (1) as an event and means of action research before a package of trident agribusiness activities is considered feasible; (2) as an exemplary event & means to attract the attention & interest of the local and surrounding communities (3) As a place of consultation for the community or any party interested in asking further questions. If the community members themselves have expressed interest & readiness, then at that time, the *bottom-up* process of

growing trident agribusiness has begun to move. Further developments are just waiting for the period of trying to reap profits.

So the Agro trident program is still developed by the will of the bottom so that it is enriched with local wisdom, but still gets the proper enrichment of Ipteksi (Science-technology-art) environment so that it is following field conditions. Such a trait cannot be ignored, primarily when remembered that rural communities are limited in education and technical skills, while field conditions vary from region to region. You can imagine how many benefits would be lost in vain if the development of the modern sector took place without paying attention to the value and importance of local wisdom hidden in the movement of traditional life of rural communities. Not only can conflicts of interest be soaked. With that local wisdom, technical obstacles can be overcome to increase productivity. Efforts to maintain the balance of nature will also feel more realistic. Apart from that, the market aspect of agrotrisula production needs to be encouraged to be a catalyst for sustainable technological adoption.

Forest Management Patterns

This first pattern allows community members to develop timber plantations with access to technology and markets provided by the company. Therefore, the activities of community members in groups can lead in the long term to becoming a particular corporation for community forests, maybe in the form of a cooperative or a clan business entity. With this solution, the community benefits because it has the opportunity to reuse land

owned by residents or those that are disputed with more certain income opportunities. For the company, this solution means a shared vision of the

business and no shock of reducing the amount of timber supply to third parties. This pattern has advantages and disadvantages, namely:

Table 3. Advantages and Disadvantages of Forest Management Patterns

Excess	Debilitation
(1.1) There is not much trouble for companies except with relevant agencies to provide technical guidance on the implementation of timber plantations.	(1.1) The participation of community members is constrained by a lack of skills and the economic narrowness of the family.
(1.2) The labor force of the population is partially diverted to the production of wood and its interpolating.	(1.2) Disputes due to price discrimination due to disparities in the quality of the results of the company and the figure of the community's business are very potential to occur.
(1.3) The challenges of the timber market remain jointly answered by entrepreneurs and communities.	(1.3) Unfair competition can occur when the company receiving wood products as a processed material for the woodworking industry turns out to be pure oligopoly.

Social problems still have the potential to occur in the course of applying this pattern, but it is already isolated as the authority and affairs of community forest business units managed by village community groups or local indigenous peoples. However, the company still needs to be aware of any possible negative developments with resonance towards the destability of the company's activities.

Family Forest-Resource Management Pattern

This second pattern is slightly different from the first form, where the affordability (accessibility) of the community to the disputed land is sufficiently directed to harvest a lot of non-timber products. There are at least 15 potential non-timber products as wild natural resources that can be obtained from HTI. The main ones because they are: (1) Deer (*Helaphus*

kuhllix axiskuhli), (2) Partridge (*Gallus gallus*); Chickens (*Rallus aquaticus*), (4) Deer (*Tragulus sp.*), and (5) Boar (*Sus scrova*), and (6) honey bee yield. Among those classified as flora are:

1. Firewood and charcoal from plant wood reranting
2. The fruit or seed of *Acasia* wood or other wood
3. Segayam grass (*Paspalum sp.*)
4. Post-cutting wood roots for craft materials
5. The fire bulkhead room for intercropping is sober

All of these potentials are only a source of side income. In contrast, the primary income is the distribution of royalties from timber products planted by the company and the community according to the agreement (MOU). This pattern has advantages and disadvantages, namely:

Table 4. Advantages and Disadvantages of TheMarrian Forest-Resource Management Pattern

Excess	Debilitation
(1.1) People's aspirations to obtain cash are fulfilled without much trouble for HTI companies.	(1.1) The annual royalty income can be a source of internal conflicts in the village & pushing for cash exhaustion.
(1.2) Reliable in developing a cultural symbiose between the 'clan' and the company, as the HTI company remains as a timber pertanamann actor (as indicated by a broken arrow).	(1.2) The development of cooperation between villages and companies with a <i>win-win</i> nature is not guaranteed to last.
(1.3) The contribution of the local government officials from the beginning did not determine anymore because it had been taken over by the 'clan' or village.	(1.3) The utilization of royalty money is determined and controlled at will by village institutions

The substance of this pattern of partnerships presented in Table 3. with this second pattern, the main source of interpretation on which life depends from month to month or season to season and year to year for the community remains outside the disputed land. Farm employment, which for rural communities still tends to be extensive in this regard, should be encouraged to shift to non-farming. For example, by hunting down to become a cutman, a planter, as well as a fireman, in addition to trading in the informal sector.

Agroforestry Resource Management Pattern

This pattern actually reflects the real responsibility for the company to prosper the community, therefore this pattern deserves to be called the People's Forestry Business Unit (SUPK) which will be discussed further in the book Volume-2. This pattern will be very effective in encouraging the intensification of residents' business land, and at the same time inhibiting the rate of extensification. Meanwhile, intensification efforts are indeed very possible by the improvement of the hydrological cycle and temperature in the field thanks to the success replanting. This pattern has advantages and disadvantages, namely:

Table 5. Advantages and Disadvantages of The Marrian Forest-Resource Management Pattern

Excess	Debilitation
(1.1) Actively and visibly builds the people's economy and the welfare of the community.	(1.1) It is necessary to prepare to condition society tactically &strategically by professional NGOs.
(1.2) Andal encourages the growth of the regional business world in a synergistic spirit that <i>is win-win</i>	(1.2) Cash payments to elements of society do not occur except in the

-
- without spurring the extensification of business land.
- (1.3) Anticipation of the possibility of dissolution of funds in circulation later.
- (1.4) The accuracy of the determination of annual royalties from *agro-timber* is monitored directly in the field by the community.
- (1.5) Aspirational for other agribusiness companies because of its win-win & conducive nature, so that in the long run it is conducive to the development & amplification of HTI.
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With this pattern, the source of side income & main and principal in pattern-2 can still take place, but the other source is from Agro trident which is the main source of the family's mainstay. Of course, the synergistic partnership is no longer just about the technical side of adjusting the timber plantation & trident agribusiness among wood plants, but also related to the position of the company's citizens as a potential market for various agribusiness (agro trident) products.

Conclusion

Based on this discussion, it can be seen that this partnership pattern provides the most socio-economic benefits that benefit the region & all parties. However, the realization of this program strongly demands the sincerity of professional coaching. The role of trusted NGOs & fully supported by the local government and the company is decisive. Apart from it, all the role of the mediator, who from the beginning encourages & facilitates partnership negotiations, will of course, also determine the pattern of partnership that is finally agreed upon.

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- nature of wages and the like.
- (1.3) The role of local government officials is very decisive in pioneering agrotrident partnerships and funding in a meludesa manner

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CONFLICT-OF-INTEREST STATEMENT

The authors have declared no conflict of interest.

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