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Production Area (Concessions) Role on Landscape Environment Management in South Sumatra

Edwin Hermawan[1*], Moh. Rasyid Ridho[2], Muhammad Yazid[3]

[1]*Student of Environment Management, Graduate Program, Sriwijaya University*
[2]*Department of Biology, Faculty of Mathematics & Natural Sciences, Sriwijaya University*
[3]*Department of Agribusiness, Graduate Program, Sriwijaya University*
[*]*Corresponding Author: hermawan.edwin@gmail.com*

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Abstract: Gap existing in the landscape are partial practices on environment management and social programs from each of landscape stakeholders which cause cumulative duplication or incontinuity between programs. The objective of this research is to analyze production area role in the landscape environment management in South Sumatra particularly Musi Banyuasin and Banyuasin Districts. Using survey method and purposive sampling, 8 companies representatives are interviewed regarding current environment management system and the relation with external factors with landscape approach overview. The results: (1) Land-use planning should be in place prior the development of concession permit and concessions as implementer of provincial and national agendas on local investments; (2) Concession monitoring efforts could give input on the conformity towards the law enforcement in environment management which should be expressed through the year.; (3) Concessions ideally have the role as connector to community and protected areas, connecting to government programs, raising awareness as well as providing assistance in economic empowerment to the community, reducing dependency towards forests; (4) The report from wildlife and its habitat monitoring (buffer area) surrounding concession should also be shared with Environmental Agency (DLH), Forest Management Unit (KPH), National Park and Natural Resource Conservation Center (BKSDA) for potential or existing wildife corridors or ecosystem essentials area; (5) Concession could collaborate with conservation area as well as other governmental programs to maximize the impact and efficiency of the programs. Together with community and protected areas, concessions have significant area size and have the capacity and resources to also take part in the landscape management. Joint monitoring and programs would be tremendous achievement for the landscape approach.
Keywords: impact, biodiversity, concessions, collective responsibilities

1. Introduction

South Sumatra landscape is essentials as one of last resorts for biodiversity in Indonesia as still existing of rare, threatened, endangered (RTE) species such as Sumatran Tiger (*Panthera tigris ssp. sumatrae*) [1], Sumatran Elephant (*Elephas maximus ssp. sumatranus*) [2], Sunda Pangolin (*Manis javanica*) [3] and other species scatter and moving not only inside natural park or wildlife reserve but also across production area (concessions) and community (agriculture, housing) area. Conservation area (protected area) in South Sumatra particularly Berbak-Sembilang National Park and Dangku Wildlife Reserve are surrounded by production and community area.

Concession is a certain area given permit by the government to a company to run business (production). During early development of concession, wildlife assessment is part of environmental risk assessment [4] as well as social and environment risk assessment, followed by recommendation by expert on risk management and monitoring. In practice, if implemented correctly, it could give impact on biodiversity and its habitat on landscape level especially if following the characteristics of effective monitoring programs [5] by also emphasizing on its technical components [6].

Gap existing in the landscape are partial practices on environment management and social programs from each of landscape stakeholders (conservation, production, community) which cause cumulative duplication or incontinuity between programs. Landscape management and monitoring become more and more important to maintain the quality of the environment due to its services [7] and to ensure RTE species movement from one to another protected forests through concessions and community area by proxy monitoring [8] with scheduled routine patrol based [9], if not by heavy scientific method. Monitoring data are shared with Environmental Agency (DLH), Forest Management Unit (KPH), National Park (TN) and natural resource conservation center (BKSDA), joint monitoring are scheduled per semester or yearly with DLH, TN, BKSDA and community relevantly to the area condition (adjacent to protected area or not). Production landscape are often become main attention for public on sustainability as market demanded. Lack of consideration

of which party RTE management should held responsible often lead to blaming game. Therefore landscape approach [10] in main attention to production landscape should become a guidance of every party connected in the landscape.

The aim of the study is to analyze production area role in the landscape environment management in South Sumatra. Concessions as area manager, hold capital to support its own environmental management as well as take part on landscape environment management.

2. Materials and Methods

2.1. Materials

Interview [11] are conducted to 8 companies representatives in Musi Banyuasin and Banyuasin Districs of South Sumatra Province, Indonesia. Interview data then compiled and analized the role of production area to the landscape environment management.

2.2. Methods

This research took place in Musi Banyuasin and Banyuasin Districts, South Sumatra Province during the Q4 (fourth quarter) of 2019. Banyuasin have Berbak-Sembilang National Park where Berbak is part of Jambi Province and Sembilang is part of South Sumatra Province (Banyuasin District), together with Dangku Wildlife Reserve then forming Sembilang-Dangku Landscape. Sembilang National Park and Dangku Wildlife Reserve are separated by cross provincial roads from east to west where Sembilang National Park is in the north side and Dangku Wildlife Reserve is in the south side of the road.

Research method used was suvey, with purposive sampling comprise of 8 companies (forestry and oil palm). The companies chosen representing north, middle and south of the cross provincial roads.

Data was collected using interview. Questions on environment management system are given based on prepared criteria table. Essential environment management system are questioned, note that environment and RTE species aren't production sector itself responsibilities due to mobility and partly as landscape management consist of other party in the landscape. Effectiveness and efficiency of environment management and monitoring therefore rated by average of environment management scores. Also note that scores are given to respondent perspectives on environment management system. Landscape level overview are described [12] in neutral manners. Scores and interval level are used to understand and describe concession's role in landscape management.

Answers then scored according to the statement of availability or occurrence in the field. Scores then divided into effectiveness and efficiency of environment management system by group of its level. The scores and levels itself show perspective on current system state and the connection to other party in the landscape.

3. Results and Discussion

Focusing on concession's part in landscape management, its areas would add up significantly in environment monitoring data and several programs in the landscape. Combination between concession and protected area monitoring data could give broader view on RTE species movements across the landscape. Joint monitoring with protected forest staff and community would also provide shared awareness and action towards the importance of environment, RTE species and its habitat. Relation between production area, community area and conservation area (Figure 1) shows production area as connector to other area. As a commitment on environment policy, grounded monitoring implementation for the whole year, this ideal should be one of the solution on corridors and sustainability with precondition of good land-use planning and good law enforcement. Following, also awareness and economy empowerment are essential in the landscape management.

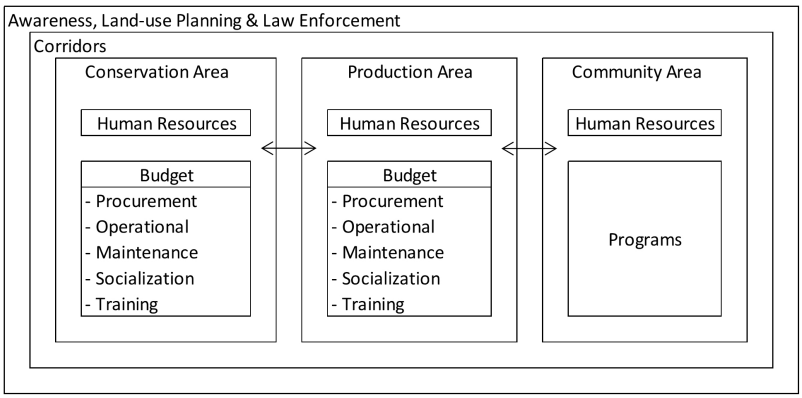

Figure 1. Mind frame of balanced landscape management

3.1. Land-use planning

At this stage, concession have the role as a continuation or implementer of provincial or national agendas on local investments. Prior concession development, the social and environment assessment should consider to maintain and improve existing High Conservation Value (HCV) also community economy and carrying capacity on the growing community. Furthermore, environment management and monitoring would support the landscape management.

Land-use planning are based on biophysics, local environmental knowledge, districts, provincial and national agendas. "Land use planning creates the prerequisites required to achieve a type of land use, which is sustainable, socially and environmentally compatible, socially desirable and economically sound. It sets in motion social processes of decision making and consensus building concerning the use and protection of private, communal or public areas" [13].

At first, land use planning should be balanced between investments, urban housing and agriculture plans, also viable conservation requirements. If land-use planning follow the social process, further conflicts should be avoidable or minimum. On concession side, the environment valuation, environment and social risks should be assessed prior development and projected one until two production cycle and beyond (50 years worth) including demography to prevent future conflicts.

3.2. Law enforcement

Concession, government, law enforcement and community could act as control for each other. It is concession's role to facilitate the communication inside and adjacent the production area. This condition could become New Environmental Governance [14] or as a foundation, said that it would improve the legitimacy and responses toward environment, in addition to buyers and consumers in sustainability market.

Illegal logging and RTE species illegal trade eradication would be the domain of prosecution and law enforcement. Meanwhile, prevention by management and monitoring of production area would be the domain of concessions, together with National Park, Natural Resources Conservation Agency (BKSDA), Forest Management Unit (FMU), Police Agency, and community when relevant.

Environment monitoring by concession could be combined with or joint monitoring with related agencies and community. The monitoring data from the field then used as a basic for corrective action in the field, report to the management, action by management or report to the authority, report to related agency and as an input for concession's next environment management and monitoring plan. The monitoring data should be compiled by related agency for landscape level management purposes.

3.3. Awareness raising

Production sector held crossing responsibility (also held bigger part of the production area) which necessary to raise awareness by information sign to its worker, socialization by the company on the importance of biodiversity and environment services, the law protecting it such as Law No. 32 year 2009 on Protection and Management of Environment, sin for those violating Indonesian Ulema Council (MUI) fatwa and add up with economic empowerment programs. MUI fatwa such as No. 4 year 2014 on RTE species conservation and No. 30 2016 on land and forest fire and control are moral guidance from religion side.

Awareness improves understanding of community on the importance of environment and biodiversity as in its services if not the consequences of violation of the law or fatwa. Community held important roles in maintaining biodiversity by its local wisdom of forbidden forests or harm will come for those who do evil deeds or disturb certain sacred area.

Problematic dispute appears when younger generation or mass movement in need of agriculture areas occurred. Again, this shows the importance of land-use planning upfront. On the protected wildlife, community and concession staff should well aware of the regulation and importance of the wildlife and environment.

Concession could raise awareness starting from elementary school [15] facilitated inside concession area or in the villages nearby. Awareness-raising could collaborate with related agencies such as from education, fire fighting, National Park, Natural Resources Conservation Agency (BKSDA), Forest Management Unit (FMU), academics and environmental (DLH).

In the case of drivers of deforestation (illegal logging) and illegal wildlife hunting and trade [16][17], concession could work together with Forestry Agency (Dinas Kehutanan), Natural Resources Conservation Agency (BKSDA) and Police Agency for awareness raising and socialization to staff and worker inside production area and to communities in nearby villages.

Joint monitoring could improve the effect of the awareness, as each aspect of the party become control for each other, and the efforts and action itself would be acknowledged and respected as the law and the importance of the environment and RTE species are indeed protected and managed, and each party realized the collective sustainable economic empowerment and reduce the extraction from the forest, increase in consciousness of protecting the environment and wildlife.

3.4. Corridors

Concession role in the corridor aspect could provide HCV areas (riparian, patches, edge effect buffers), its management and joint monitoring. While still under discussion, the efforts, monitoring could still occur and

the data shared and circulated for further purposes such as reports, corrective actions, or as a basis for determining corridors or ecosystem essentials area.

While corridors by conservationists mean are viable forested areas connecting between protected forests [18], other forms of corridors are being discussed. Riparian are considered as the best choice, if not part of the riverside is occupied for road or settlements. Then, forest patches in the landscape are also said as stepping stones or islands for the movements of RTE species. The form of management and law enforcement which ensure the safety of RTE species movements across the production landscape with or without the islands is also considered the best option.

Whether riparian, High Conservation Values (HCV) [19][20][21] areas, edge effect buffer, while under long discussions between stakeholders, one idea should focusing on the human resources as the protector of the ecosystem essentials area [22]. Again, corridors if being put in land-use planning would prevent or minimize further conflicts.

3.5. Budget and Resources

Concession have budget and resources for its own environmental management and monitoring, and its own community development or Corporate Social Responsibility programs for surrounding villages. This partial plan and act could be more valuable when connected with other programs in the landscape, with other stakeholders.

Funding and leadership [23] in the concession as one of the solutions for sustainability. The use of the data collected in the field by monitoring. Funding should consider the concession area size, (appointed) monitored areas, human resources, and time needed to cover the monitored areas. Staff capacity (yearly training), equipment, operational and maintenance also should be put into budget. Leadership in sustainability also important to manage and implement the sustainability commitment towards environment and community.

Concession could communicate with stakeholders in the landscape regarding programs plan in the landscape and discuss the connection between programs in the landscape. Concession could collaborate with conservation area as well as other government programs to maximize the impact and efficiency of the programs, minimizing the complexity of the double (actually the same) effort, double claims or target audience confusion.

Joint program and achievement could be counted as shared success. Therefore, shared resources would be completing resources each party owns lacking on certain area program. For this to happen, require good communication between stakeholders in the landscape, to allow great coordination and collaboration. A discussion forum with the government as the lead would be essential to facilitate the connection between stakeholders and programs in the landscape, discuss the development continuation of programs in the landscape, avoid replication and consider joint programs for landscape to prosper and thrive.

4. Conclusion

Concession holds an important role in landscape management. As one of the parties other than conservation area and community, concession could act as a connector in the landscape. Joint management and monitoring are encouraged to increase the effectiveness and efficiency of the RTE species and its habitat conservation. Also, note the ideal of land-use planning and law enforcement prior to the development of the concession.

Therefore summarizing the concession's role for the landscape environment management as: (1) Implementer of the land-use planning as investor, (2) Area manager on environment management and monitoring aspect supporting the law enforcement, (3) Awareness raiser for its staffs/worker and villages nearby, (4) Provide HCVs and management to ensure safe wildlife movement from and towards protected forests, and (5) Collaborator in environmental programs.

From the landscape point of view, it is best to find solution together with other parties in the landscape, collaborate in the programs, share the resources and success.

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