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RESEARCH ARTICLE

FOREST MANAGEMENT AND LAW ENFORCEMENT TO OVERCOME FIRE CASES OF INDONESIA

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ABSTRACT

The problem of forest fires has become an environmental problem that greatly impacts the ecosystem. This article aims to collect the human factor data from the perspective of forest management by the local governments. Survey method was applied to seek data of the forest management and illegal logging. Data shows that the local governments in Sumatra and Kalimantan have not maximally managed forests and conflicts of interest with corporations and communities around the forest. **Conclusion:** the new model of forest management through public policy in corporation with the stakeholders is needed to overcome forest fires.

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INTRODUCTION

Forest fires include ecological damage. Ecological damage is environmental damage, damage to plant ecosystems, damage to animal ecosystems, water and air pollution. Then for the things that cause it are humans, nature, technology, development, economy, lack of knowledge and bad behavior patterns (Chaerin, 2016). In principle, ecological damage is of unlimited value because ecosystems cannot be created by humans, so that if there is environmental damage to the ecosystem it will be destroyed or difficult to recover (irreversible) (Wasis, 2019). Decreasing biodiversity, decreasing economic value of forests and soil productivity, changes in micro and global climate, and the smoke disturbs public health and disrupts transportation, including land, rivers, lakes, sea and air. The haze disturbance due to Indonesia's recent forest fires has crossed national borders. Fires create ecological losses; reduced forest area, unavailability of clean air produced by forest vegetation. Loss of forest function as a water regulator and preventing erosion. The loss of benefits from the potential of forests that are commonly used by humans to meet the needs of building materials, food materials and medicines, as well as animals to meet the needs of animal protein and recreation. Widiyanto (2010) explained that the function of forests is very important as water storage which is very necessary for human life. With this forest, the existence of springs and rivers is maintained, so that water crises and drought can be avoided.

To be able to continue to maintain the function of the forest as a water regulator and to prevent soil erosion, it should be Maintain forests with little or no human intervention, through the designation of protected forests (Simon, 2008). Forest and land fires create air pollution. The smoke from fires causes respiratory problems and interferes with daily activities. Forest fires from 2015 occurred in Sumatra and Kalimantan by corporations. The smoke of forest fires in Sumatra and Kalimantan is felt by people in Malaysia, Singapore and Brunei Darussalam and threatens to disrupt air transportation relations between countries. Forest and land fires occur due to two main factors, namely natural factors and uncontrolled human activity factors. Natural factors, among others, are the influence of El-Nino which causes prolonged drought so that plants become dry. Dry plants are potential fuel when exposed to sparks from coal that appear on the surface or from other combustion, whether intentional or unintentional. This causes ground fire and surface fire. Ground fire is a type of fire where the fire burns organic matter below the surface. Surface fire is a type of fire where the fire burns surface fuels in the form of litter, shrubs, saplings, stakes, and logging waste (Firmansyah and Subowo, 2012). Forest and peat land fires are surface fires where the fire burns fuel that is above the surface (for example: litter, trees, shrubs, etc.), then the fire spreads erratically under the surface (ground fire), burning organic matter through the pores. - peat pores and through the roots of shrubs / trees with burnt tops. During its development, the fire spreads vertically and horizontally in the form of a smoke bag with smoldering so that only white smoke is visible on the surface (Wetlands International-Indonesia, 2014). If handled slowly, fires can spread, causing crown fires, where these fires

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damage tree crowns. Human activity factors that cause forest and land fires include the existence of activities to make bonfires in the forest, but the coals from the campfire are not extinguished. The existence of land clearing activities using uncontrolled slash-and-burn techniques, usually carried out by HTI companies and shifting or permanent cultivators. Burning deliberately to get a grazing field or hunting ground, throwing cigarette butts that are lit carelessly and as a result of using tools / machines that cause fires. The social impact is loss of livelihood, sense of security and harmony of local communities.

METHODS

This research used a survey method. The survey was conducted to find the data of the effectiveness of forest management to overcome the fire. It gathered the data of management of local governments through experts and respondents experience. It took data directly from the informants (Roopa & Rani, 2012). In other words, a survey for data collection was to have collection of data (Das, 2017).

Managerial Problem for Human Factor: Human factor impacts the forest management and controlling the deforestation; community behaviour factor influences the forest fires. Data obtained showed that communities around forest areas often use the fire for land preparation, both for making agricultural land and for plantations such as palm and rubber trees. The low cost of burning the forest areas is a driving factor corporate in the land preparation. Using fire in land preparation activities was carried out because it was cheap in terms of cost and time-effective; it results in the satisfactory of land clearing. Many social conflicts often occur in the forest areas. The social conflicts appear due to the lack of forest management system; many local governments in Sumatra and Kalimantan did not provide the justice and economic benefits to the people who live near the forest areas. Some communities have been so upset with forest management. It often make a trigger people to act anarchically without taking into account existing conservation principles and laws. Limited education of the community and the lack of community knowledge about the functions and benefits of forests greatly influence their actions in forests. It is such as destructive behaviour. Conflicts between corporate of the timber and mining industries, and indigenous people who have customary ownership of land, forest and land. Many locations have been controlled by investors who are authorized by positive state law.

Survey revealed that community resentment was vented by burning in order to defend the land they had had for generations. Here poverty and injustice trigger forest fires and people protect the forest areas from the corporate action in the extinguishing. Illegal logging tends to make the critical condition of lands. It has the fire vulnerability so high. The fire in forests is easily spreads to the whole forest areas. Illegal logging makes the fuel of leaves, branches and twigs which increase over time. Fire accumulates in forest areas which in the summer/hot season will dry up and have a seriously impact to result in the forest fires. The community around the forest area is inseparable from livestock and grazing. The location for forages and grazing areas is one of the aspects that should be fulfilled. For having enough grass with a high level of eatable, farmers usually burn pasture areas that are no longer

productive. After the pasture area is burnt, the new grass grows with better quality and high nutritious feed. The lack of public awareness of the fire often forms the accident of the perpetrator; the community makes use the profits form the forest exploitation. Taking timbers and rattan which is usually light cigarette and throw cigarette butts in forest areas result in forest fires occur.

Inadequate Forest Management in Indonesia: Forest has an invaluable natural resource; it contains biological diversity as a source of germplasm. Forest provides the natural resources such as timber and non-timber. The important forest include its products, water management, and flood. Forest is also erosion prevention as soil fertility, and protection of living nature. For the purposes of science, culture, recreation, tourism and so on, therefore, forest utilization and protection have been regulated in the Indonesian 1945 Constitution, Indonesian Law no. 5 of 1990, Indonesian Law no. 41 of 1999, Law No. 32 of 2009, Indonesian Government Regulation (PP No 28 of 1985) and several decrees of the Minister of Forestry as well as several decrees of the Director General of PHPA and the Director General of Forest Exploitation. However, the forest resources destruction is continued by illegal logging and deforestation, and even it increases in intensity. Forest fires according to the Decree of Minister of Forestry. No. 195 / Kpts-II / 1996 is a condition in which a forest is hit by fire, causing damage to forests and forest products that cause economic and environmental losses. Forest fires are one of the impacts of the increasing level of exploitation on forest resources. Forest or land fires cause the environmental damage and pollution such flora and fauna, soil and water destroyed. Forest and land fires in Indonesia occur every year with a variety of their frequency and intensity.

Forest destruction made the carbon emissions rising nearly 20%; it resulted in the snow and ice cover decreased, deep ocean temperatures increased and sea level levels increased by 100-200 mm over recently. As the current rates continue, experts predict that the earth would be 1oC warmer on average by 2025. Increasing the sea levels could submerge some coastal areas. It is predicted that extreme weather conditions would cause drought, floods and typhoons, as well as distribution of disease-causing organisms. Huge forest fires have been also triggered by the emergence of El-Nino climate. It noted that fire cases that occurred in 1987, 1991, 1994 and 1997 (the Minister of the Environment and UNDP, 1998). The increasing cases of fires also indicated an expansion in the spread of fire locations in Indonesian. Based on several research reports of forest fires, it found that the human factor concerning with: 1. The traditional farming system of the nomadic local population. 2. Forest clearing by HPH (Forest Concession Rights) holders for timber industry and oil palm plantations. 3. Structural causes, namely a combination of poverty, development policies and governance, resulting in conflicts between customary law and positive state law. It found that the shifting cultivation as a traditional agricultural effort in forest areas makes the land clearing. By burning forest, it makes farmers and corporate get benefits due to burning way is fast, cheap and practical. Illegal fires for logging may occur because the agricultural activities are only as camouflage for illegal loggers who use the Permit or concession for building the roads and are in the permitted areas.

It needs various efforts to prevent and protect forest fires. The public policies and the effectiveness of legal instruments such as laws, Government Regulations (PPs), and Ministerial Decrees to Director General. Those need the law enforcement to yield optimal results for forest protection. It noted that the quite large forest fires in 1982 and 1983 in East Kalimantan, the intensity of forest fires has become more frequent and the distribution has widened. Cases recorded, namely 1987, 1991, 1994 and 1997 to 2003 had therefore the in-depth studies are needed to prevent and overcome forest fires. Data obtained of the various knowledge about forests, forest fires and their impact on biodiversity could be used as fundamental data for policy makers and the development of knowledge for the forest environment. Forest clearing by (Permitted Corporate or HPH holders) and plantation companies for the development of industrial and plantation crops generally covers a fairly large area. Land clearing methods using clear cutting and burning are the cheapest, easiest and fastest alternative to clearing land. As a result, these methods often result in fires not confined to areas prepared for industrial or plantation development, but extending to protected forests, production forests and other land.

Conclusion

The data analysis concluded that:

1. The forest areas still need the good governance for controlling the traditional farming system of the moving local population and the corporate which made total control of forest clearing by HPH (Forest Concession Rights), The Rights holders for timber industry and oil palm plantations often make deforestation by firing the areas.

2. Local government management for development policies and governance in forest management needs a model to reduce it, causing conflicts between customary law and positive law.

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