

# Strategic Analysis of Collaborative Governance for Disaster Management on Forest and Land Fires in Indonesia

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**Abstract:** This research aims to understand the strategic analysis of collaborative governance on forest and land fire disasters at the ontological and sociological level that are very significant in reducing risk of natural disasters in Indonesia. The problem is very interesting to be analyzed by conducting a descriptive qualitative research based on theory of public policy, collaborative governance, and strategic management. The data were collected through in-depth interview, observation, and related documentation in forest and land fire cases in Indonesia. The data were analyzed by using interactive models, which are data reduction, data display, data verification, and supported by triangulation. The results were based on ontological and sociological level by using collaborative governance perspective and strategic analysis of internal, external, supporting, and inhibiting factors for reducing disaster risks and improving disaster management. Vision and mission of public policies on disaster management are needed for improving and providing information to stakeholders regarding regulations and sanctions in natural disaster management and produce a revised relevant regulation for state agencies as public officials in making regulations on disaster management in Indonesia.

**Keywords:** Public Policy, Collaborative Governance, Strategic Analysis, Disaster Management.

## I. INTRODUCTION

Natural disasters such as forest and land fires often occur in Indonesia. Some problems related to disaster management have to be analyzed based on internal, external, supporting, and inhibited factors using strategic analysis and collaborative governance perspective. Policies and regulations on disaster management formulated by the legislative and executive of state institutions have different interpretations. This study aims to understand the strategic analysis of collaborative governance and factors on managing forest and land fires related to disaster management and public policies in Indonesia.

### A. Background

The existence of forests in Indonesia has a very important position, both in national and international interests. Indonesia has around 120 million ha of state

forest. The existence of Indonesian forests is the third largest forest in the world with tropical forests and contributions from rainforests, such as those in Kalimantan and Papua. Forest and land fires occur every year. In 2015, the loss according to the World Bank was USD 16 billion. The impacts of forest fires are the loss of foreign exchange, damaged habitats, and a decline in international-trust.

In accordance with the report of the state agency for disaster management in 2019, it was stated that the conditions of forest and land fires were spread across 3 big islands, that were Sumatra, Kalimantan and Papua. Forest and land fires are caused mostly by human or anthropogenic causes. Disaster Risk Reduction in forest and land fires is an effort that can be carried out to prevent, alert, extinguish and treat fire. Fire prevention is an action by making preparations before the disaster occurs.

In reducing the risk of forest and land fire disasters in Indonesia, several aspects of collaborative governance are very important in realizing the efficiency and effectiveness of forest and land fire disaster management. Collaboration between the

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government, community, private sector, as well as other stakeholders who can be involved in their role as a form of risk reduction has occurred so far.

The disaster management was carried out through several key actors i.e., the government, business, community, academia, and the media in collaborative way. Managing natural disaster need multi aspects such as knowledge, skills, and attitude, to handle a full treatment for disaster management. Disaster is an unexpected situation that causes panic in the community and grief such as injuries, deaths, economic pressure, loss of family members and damage to infrastructure and the environment (Carter, 2008).

The complexity and interdependence between institutions can lead to conflicts between interests that are difficult to suppress. Therefore, it is necessary to seek new ways to achieve political legitimacy. The failure to implement policies at the field level and the inability of groups mainly due to the separation of powers can hinder decision-making and high costs (Ansell and Gash, 2008).

Community-based forest fire disaster management has become an alternative solution through environmental education, application of fire prevention technology, and socialization of regulations related to forest fires. Disasters have become a serious concern. Losses due to disasters cannot be avoided. Investments in disaster resilience can reduce losses and increase natural resources management with active cooperation between the government, private sector and the community. It is necessary to increase activities to reduce disaster risk and achieve sustainable development. Several countries in the world have committed to implementing disaster risk management, such as Brazil, Bangladesh, the Philippines, and Indonesia (Okumu and Muchapondwa, 2020).

What are the factors that support and hinder the implementation of collaborative governance in forest and land fire disaster management in Indonesia? How is the implementation of collaborative governance in forest and land fire disaster management based on disaster risk reduction in Indonesia?

There is no statutory level of regulation as a legal umbrella in forest and land fires disaster management. At the novel level, it is necessary to have a strategic analysis for implementing the collaborative governance of disaster management. Based on previous

explanation about forest and land fires disaster management in Indonesia, deeper explore of ontological and sociological level is still needed. Therefore, this issue is very interesting to study.

## **B. Research Objectives**

This research is useful for academicians and practitioner in adding knowledge on public policy, collaborative governance, and strategic analysis for improving a natural disaster management. This research also works as a recommendation for the legislative and executive as the public officials that make a revised and detailed regulations on disaster management.

## **C. Original Research**

Forest restoration as a strategic government program has become a hot issue related to forest fires which have become the source of the haze disaster. The government established a Restoration Agency in the implementation of forest restoration in Indonesia which is designed in the framework of collaboration with many parties, such as the private sector and the community as the key actors in implementing peat restoration in the context of collaborative governance. There is a failure in collaboration between actors in a peatland restoration program in several provinces due to unclear status and inactivity of the restoration agenda. Economic factors are the main factor because peat restoration is linked to investments in forestry and plantations. The failure of collaboration between these actors was also caused by a lack of commitment from the political leadership in the province (Wicaksono, 2019).

The collaborative governance process related to regional development as well as the obstacles can be found in the implementation of the collaboration process. To develop the area, a collaboration among the government, the private sector, and the community is needed. The collaborative process that exists between the government, the private sector, and the community is carried out within the framework of collaborative governance. The collaborative process in regional development is quite good because the collaboration has gone through the movement of shared principles, mutual motivation, and joint capacity building. The obstacles in implementing the collaboration include the difficulty of forming a legal entity group, the low sustainability of the collaboration process, facilitating productivity without providing

marketing skills, and the private sector being less involved in all collaborative activities (Arrozaaq, 2016).

Collaboration in the management and utilization of forest resources is a solution in dealing with the failure of a centralized approach to forest conservation. Communities can organize themselves into growing Community Forest Associations with diverse forest conservation outcomes. There are factors that influence the success of collaboration in forest conservation. There is a relationship between community participation and successful collaboration. Collaborative action will be effective if community participation is high and initiated by the community who interacts with the government (Okumu and Muchapondwa, 2020).

Disasters need to be studied in terms of disaster resilience policies that lead to long-term results by increasing the capacity to cope with large-scale disasters. Resilience in emergency management has been influenced by disaster management concepts, such as prevention, preparedness, action and recovery frameworks. National disaster resilience policies need to be studied to find out which activities are related to resilience. The higher accumulated risks and consequences during disasters need to be explored in ways of interventions that can transform them toward more desirable resilience (Wenger, 2017).

Land management strategies must be implemented to serve future generations by mitigating climate change which must be a priority. Agricultural action is needed in climate change mitigation and land management strategies to reduce emissions. Mitigation carried out by the community in agricultural business systems such as rice, rubber, and oil palm, needs to be reviewed with a climate change mitigation development strategy through sustainable land management. Climate change mitigation actions undertaken by the community are related to land preparation and land management in agricultural systems based on water and land management technology, revitalization of agricultural extension, and establishing disaster management (Surahman *et al.*, 2019).

There is an influence between forest fire fighting agencies on forest management and resilience. The socio-ecological history of the three groups are, namely land managers, private companies, and communities. There is a multi-stakeholder linkage, namely informal institutions such as culture, knowledge, and paradigm with the adaptation of forest fire management.

Interactions with institutions affect the flexibility of decision making over time which can affect forest resilience. Institutional dynamics are also important so that management flexibility can respond to forest fire hazards depending on the synchronization between informal and formal institutions. Interventions that promote institutional evolution in line with policy developments can shorten time and accelerate adaptation. Feedback related to forest fires can be carried out in several ways such as providing insight into forest fires, history and system stages, management behavior, ecological conditions, and policy options (Steen-Adams *et al.*, 2017).

Forest fires present many challenges for policy makers. Using a framework of cooperation between humans and nature requires alternative management ways of affecting fire-prone ecosystems. Alternative management strategies can have an impact on fire suppression outcomes with fire severity being lower than in scenarios without management alternatives. Treatments appear to be more effective at reducing fires. Restoration products such as open forest with large fireproof trees and dense old forest habitat for birds can be comfortable after restoration rather than without restoration. The number of old forest and bird habitats is higher after 50 years under active management. Collaborative arrangements are needed to facilitate the development of policies and practices for forest and land fire management (Spies *et al.*, 2017).

There is research on the relationship between forest management and the private sector in dealing with fire hazards and losses due to forest fires. The degree of diversity in forest management decision making and behavior can affect forest conditions and forest management as well as economic issues and attitudes towards forest fires. Forest management has favorable outcomes for forest resilience but some of the necessary platforms are needed to develop fire-resistant forests. The socio-ecological system is considered to support socio-ecological resilience. Improper forest management will exhibit characteristics that make it resistant to fire. A combined human and natural systems approach is needed to understand the relationships between the social, economic, and ecological components of a fire-prone ecosystem to identify socio-ecological resilience to forest fires to deal with them (Charnley *et al.*, 2017).

The differences of above previous research on natural disaster and disaster management regulation

are that the government and its agencies should manage natural disaster and environmental problems by enforcing rules and standards to be setup in laws and treaties. This study analyzes a multi policies approach regarding disaster management in Indonesia.

## II. RESEARCH METHODS

A qualitative research strategy can be applied if research problems need to be explored deeper or followed up on previous quantitative research due to a previous theory or concept that is still considered unable to capture the complexity of the problem under study. A qualitative research approach produces descriptive data in the form of words or writings and behaviors that can be observed from the subject and object of the study itself. The qualitative approach was chosen because it is in accordance with the aims of the research to describe and understand the phenomena, events, social activities, attitudes, beliefs, and perceptions of people (Creswell, 2013).

Data collection in this research were interviews, observation and documentation. In-depth interview was performed to 10 informants as key member in The National Disaster Management Agency. Participant observation was conducted by author and team to obtain records in the field of study. Related documentation was gathered from many sources such as internet media and library documents.

The data analysis in this research were using 3 steps, which were data reduction, data display and data verification referring to interactive model. Data reduction is to sort out the main data, data display is to present the data, and data verification is to conclude the main themes of the results (Miles and Huberman, 1994).

The validity in this study used triangulation based on the observation, in-depth interviews, and documentation analysis to obtain valid and reliable data coping credibility, transferability, auditability, and confirmability. Credibility was related to the truth aspect by means of triangulation to compare the results of an interview with the results of interviews with colleagues. Transferability shows the applicability of research to other studies that readers can understand the results of qualitative research. The report is made in a detailed, clear, and systematic manner. Auditability means that it can be tested by examining the entire research process, since researchers design case studies,

determine data sources, collect data, conduct data analysis, make conclusions, show the stages, processes and results. Confirmability relates to the objectivity that the research results are agreed and accepted (Creswell, 2009).

## III. LITERATURE REVIEW

### A. Public Policy Theory

A new model in public policy is needed to improve the performance of public services with results-oriented and competitive dynamics by changing the rules of the game and fostering creativity in providing services. The emergence of the New Public Management (NPM) paradigm in the early 1990s is an important momentum questioning the dominance of the government and providing space for the private sector to participate in public services (Hood, 1991).

The paradigm can also be divided into 5 periodizations. The first period is the separation between politics and public administration, with a focus on civil service and government budgeting, with political and policy loci. Second period is administrative principles focusing on administrative principles, namely planning, organizing, coordinating, reporting and budgeting with a locus in any organization. Third period is political science because its focus is in the formulation of public policies which are full of political values and the locus is bureaucracy. Fourth period considers public administration as a part of administrative science that must be developed scientifically with a focus on public administration and business administration. Fifth period focusses on that public administration as public administration, with a focus on organizational theory, management theory and public policy, while the locus is public problems and public interests. A new paradigm emerged that public policy as governance with a multi-dimensional approach and focus on public affairs that require private parties and society and locus on the public, private and civil society sectors (Tulkens, 1986).

The development of public administration paradigm emphasizes the focus, locus, and value to be achieved. The classical bureaucracy focuses on organizational structure and management functions, locus is on the government bureaucracy and business organization, while values are on efficiency, effectiveness, economical and rational. The neo-bureaucracy, focus on behavior-based decision-making processes, management, systems, and research, locus on

government bureaucratic decisions, and values are efficiency, effectiveness, economics and rationality. The institutions, focus on understanding bureaucratic behavior and making decisions that are gradual and incremental in nature. The human relations, focus and locus on organization, as well as values are participation in decision making, minimization of differences, status, openness, self-actualization, and increased job satisfaction. The public choices focus on providing services to the community. The New Public Management concerning human values and social justice focus on organizational design based on decentralization, democracy, responsiveness, participation, and providing services needed by the community (Frederickson, 1976).

Based on the epistemological and sociological description of public policy theory for refining the research, it can be stated that making multi-policies and regulations related with disaster management is a part of public policy theory.

## **B. Collaborative Governance Theory**

Collaborative governance emphasizes the importance of collaboration between various actors in the development process and governance. There are several requirements for its application and important points in the starting conditions, collaborative process, institutional design, facilitative leadership, and expected outcome. First, starting conditions is a process of analyzing power resources and asymmetric knowledge or gaps in power or resources or knowledge between the various collaborating parties and to find out past history in a context that supports or hinders collaboration. If there is a gap that is too wide, then the starting conditions for the collaboration process will not run optimally.

Both are collaborative processes by conducting face-to-face dialogue so that mutual trust and understanding are built among stakeholders. The three institutional designs are needed to encourage participation and transparency in the collaborative process. The four facilitative and democratic leadership are also needed in the collaborative process so that the five expected outcomes can be achieved (Ansell and Gash, 2008).

Collaborative governance describes in detail the collaboration process that is dynamic and cyclical by producing actions on the main impact and adaptation to temporary impacts. The collaborative governance regime (CGR) includes a public decision-making

system with cross-border collaboration that represents prevailing patterns of behavior and activities. Dynamics and collaborative action simultaneously constitute quality and effectiveness. Collaboration dynamics consists of three interactive components, namely principled engagement, shared motivation, and capacity for joint action. The three components of collaboration dynamics work together in an interactive and iterative way to produce collaborative action that leads to good results (Emerson *et al.*, 2012).

Collaborative governance outlines a normative framework to deal with communities adapted to address land and resource governance. The framework shows that institutions are moving towards reconciliation which is demonstrated as a process with a focus on respect, rapport, and accountability. The move towards collaboration is based on the principles of reconciliation by providing a platform for victims of past injustices and wrongs to be identified so that people's voices can be raised and new systems can be established for accountability and law enforcement. Collaborative governance requires action, accountability and reform, which will be the main drivers for influencing capacity and ongoing changes in the government system. Actions can lead to cross-culturally driven reform by making space for influential people to participate in the decision-making process as a counterbalancing force by collaborating in government. Adaptation and empowerment are needed by improving processes and cycles based on increasing feedback from both directions between the state and society (Bealt *et al.*, 2016).

Engagement is the affirmation of common goals and the development of shared principles. The unification of principles is at the core of this component because the characteristics of each actor influence the principle. The government selects the actors who will be involved and after the collaboration develops, there would be additional actors so that the movement of common principles becomes materialized. This can be achieved through 3 elements; first is the discovery or disclosure of collaborative actors and individuals who can be analyzed from the interests of these actors and then see how much the impact is caused due to interest differences. The second is definition as a continuous effort to build common meaning by articulating common goals and objectives and agreeing on concepts and terminology that participants will use to describe and discuss problems by clarifying one another and establishing common criteria for assessing information. The third is deliberation, which is an emphasis on

quality because in collaboration there are differences in thoughts, perspectives, and interests, which will always appear at any time. Building quality deliberation requires advocacy expertise to direct collaboration so that it continues to run on collaboration goals and produces strategic and effective resolutions. Deliberation seeks to obtain answers regarding the courage of actors to act in collaboration and to understand whether or not there is pressure from the government that limits collaboration. Deliberation makes collaboration a platform for developing innovation and creation in ideas and practices activities. If an unexpected problem is found, then each actor is not afraid to act creatively because there is no pressure to act as ordered (Emerson *et al.*, 2012).

The collaborative governance will be related to recommendations with a systematic approach, i.e., the need for a shared understanding of initial conditions, a collaborative process involving state institutions, and stakeholders involved in the phenomenon that occurs. The concept of collaborative governance is a type of governance in which public and private actors work collectively in a distinctive way and the importance of the conditions for actors working together with special processes that will produce policies and regulations that are right for the public. The actors, which are government and business organizations, work together for the benefit of society (Ansell and Gash, 2008).

Based on the epistemological and sociological description of several definitions related with collaborative governance theory above, it can be stated that making multi-policies of disaster management should be analyzed by the collaborative governance theory.

### **C. Strategic Analysis Theory**

Environmental problems are increasingly prominent in the public arena and demands for justice are increasingly widespread even though there are those who support and oppose environmental regulations. Justice relates to a variety of ways that tend to side with all parties. The high level of diversity presented in an environmental crisis is usually a riot between groups. Arguments based on principles of procedural fairness and responsibility occur on every side of the environmental debate. Pro-environmental activists hold a stronger position compared to anti-environmental groups so that the argument is relatively stronger for a pro-environmental position (Clayton, 1994).

Scaling up can be understood as a successful transition from a pilot project to a larger operational model in a different location. It is gradually being scaled up to cover a larger number of beneficiaries. The process can include many dimensions such as social, physical, political, and changing mindsets, in order to achieve social and economic goals. Scaling up can take the form of an institutional vertical expansion by involving various stakeholders at various levels. Scaling can also be horizontal in quantitative increments and expand geographically to involve large groups of people (Purnomo *et al.*, 2018).

Abuse of power in managing natural resources involves a lot of conflicting interests, resulting in corruption. Abundant natural resources must be controlled by the state for the greatest prosperity of the people. The research results of the abuse of power occur as a result of a conflict of interest to maintain power in natural resource management resulting in corruption, which causes state losses and the suffering of the people. The components of sudden change caused by global change and modernization are subject to materialism and consumerism by ignoring cultural values in state life. It takes cultural morality and limits the extent of that power (Riyadi, 2020).

Agrarian law dispute of land right taken over by the State is principally different in every region and state. Agrarian Law describes the land rights, communal property or individual property or property of the state. Indonesia has adopted individual and communal rights as well as self-government property rights. Land disputes are analyzed through strategic analysis theory and since it is related to public policy and ownership, hence another approach is through the public policy and ownership theory (Riyadi, 2017).

The abuse of power in Indonesia has an impact on deviant actions that are not only under pressure from power, but also the moral behavior of public officials. Many public officials abuse power by committing corruption. They were punished by tough laws. There is a weak system in state life when there are public officials who abuse power departing from people who do not have the view of life as a nation and state as it should be. Therefore, it is necessary to have a system of national life by carrying out the principles of true collaborative practice and not just rhetoric, because the state ideology has been built by the founding fathers (Riyadi, 2020: pp. 274-284).

The corrupt behavior of politicians and state officials during government reform shows that it is still ongoing

and has become severe. Corruption crimes are organized crimes based on the interests of individuals and groups in maintaining power. Weak law enforcement in solving corruption cases of politicians and corruption of state officials involved in corruption by lightening court decisions causes many cases to be delayed in the prosecution process, even terminated. This is an indication of the weakness of law enforcement against white collar criminals. Conflicts of interest in their resolution are often based on political bargaining and abuse of power (Riyadi, 2020: 52-62).

Capability, partnership, and information sharing do not have a significant effect on performance, but must be mediated by conflict resolution in order to have a positive and significant impact. This finding implies that managers should pay more attention to conflict resolution (Assery *et al.*, 2020).

Distributive justice has a positive and significant effect on job satisfaction. Procedural justice and interactional justice have no effect on job satisfaction. Job satisfaction has a positive and significant effect on work performance. This research implies that managers should pay more attention to distributive justice to increase job satisfaction and work performance (Purnama *et al.*, 2020).

Collaborative efforts are needed between the Government and the private sector to prevent forest fires. Scaling up must be considered in order to increase the outcome which is determined by various factors such as political will, commitment of the parties involved, capacity building, policy support, and financial support. Various positive supporting policies can provide many opportunities to be replicated and extended to a wider geographic area. The community was seen as part of the solution and became the driver for expansion by initiating various types of forest fire management policies and programs (Purnomo *et al.*, 2018).

Based on the epistemological and sociological description of some land law and supply chain aspect for strategic analysis, it can be stated that the making of multi-policies on natural disaster management can be analyzed by strategic analysis theory.

#### IV. ANALYSIS AND DISCUSSION

Based on the data collection and data analysis, it can be resulted as follows.

According to a report by the Indonesian Central Statistics Agency (BPS) in 2020, it shows the land area

categorized as a forest area, is equal to 120 million hectares. This is a very good achievement in the forestry sector in Indonesia which is a supporter of natural balance, as well as being the third largest area in the world with tropical forests and rainforests. Forest and land fire disasters occur almost every year on a small, medium or large scale. The impact of air pollution or haze disasters has a very significant impact on ecosystems and biodiversity, deforestation, carbon emissions, soil sedimentation and erosion, damage to water resources and rivers, and impacts on the social economy of the community. Sumatera, Kalimantan, and Papua occupied the largest position of forest and land fires in 2015 until 2019. It was known from forest fire data for the last 5 years of the Ministry of Environment and Forestry. Based on a report from the Ministry of Environment in 2019, nearly 1 million ha of forest and land were burned. Based on the publication of the World Bank Economic Quarterly Reports, the loss of Indonesia reached US \$ 5.2 billion. The calculation of this economic loss is based on massive forest fires that occurred in eight priority provinces, namely Kalimantan, Sumatra, and Papua.

Indonesia's current forest and land governance systems assign multiple responsibilities to district, provincial, and national governments. This includes aspects of spatial planning, allocating permits for land concessions such as logging, mining and oil palm plantations and plantations, environmental protection and budgets for environmental management. Through Law No. 32/2009 on Environmental Protection and Management in relation to forest and land governance, this law emphasizes forest fires and gives the Ministry of Environment the authority to determine standard criteria for environmental damage.

The condition of forests in Indonesia is in the world spotlight because the long summer has caused extreme forest fires. The major impact of this forest and land fire disaster is a haze disaster which extends its impact to neighboring countries. Law 26 of 2014 on Ratification of the ASEAN Agreement on Transboundary Haze Pollution is as an effort to deal with forest and land fires that cause haze disasters to the borders of neighboring countries requires monitoring, mitigation, disaster risk reduction, preparedness, emergency response, and disaster impact control. Indonesia as part of the ASEAN member countries upholds and is consistent with the commitment of solidarity to cooperate in the field of forest fire control and the spread of haze across

borders by taking into account the principles of agreed international agreements and national interests.

Government Regulation Number 26 of 2020 concerning Forest Rehabilitation and Reclamation was issued. It states explicitly that forest fires are included of natural disasters. Forest reclamation in natural disaster areas is the responsibility of the Central Government and Regional Governments in accordance with their respective authorities. Of the Presidential Instruction of the Republic of Indonesia Number 3 of 2020 concerning Handling Forest and Land Fires, the President of the Republic of Indonesia has instructed as many as 28 state institutions and regional governments to collaborate between institutions so that the roles and functions of state institutions do not overlap in tackling forest and land fires in Indonesia.

Good land and forest governance is characterized by transparent policy making, predictable processes, competent officials, accountable public administrators, enforcement of laws such as property rights, and the participation of civil society. The participation and active involvement of stakeholders from various sectors such as government, private sector, and is fundamental in making policies related to the management of forests and natural resources. Improving forest governance is seen as bringing progress because it is considered a very valuable entry point for broader governance reforms. Poor governance has led to the emergence of illegal activities in the land use sector including corruption, timber theft, illegal placement, laundering of the proceeds of crime, and illegal logging. As a result, Indonesia's forestry sector fails to deliver development benefits due to loss of income, employment opportunities, government revenues such as royalties and taxes, and other local and global environmental services. Poor land and forest governance negatively impact communities in the form of insufficient compensation and the environment that are not rehabilitated.

In some cases, compliance with applicable regulations and procedures is still low and law enforcement is weak. Reasons for weak governance include: overlapping regulations, unclear regulations, lack of technical capacity, inaccurate mapping, unclear land tenure, and lack of transparency. Responsibility for governance is part of decentralization but has not occurred ideally. Governance is placed in local institutions due to inappropriate equipment, unprofessional training, and weak budget enforcement and minimal capacity. The policymaking devolved to

local governments inadvertently increases land encroachment and gives local officials huge powers to extract timber and land concessions without considering sustainable extraction rates.

The National Disaster Management Agency is equipped with various implementing regulations, so disaster management operations need to be ensured to be effective, efficient and sustainable. The intended disaster management consists of two stages, i.e., before a disaster occurs consisting of mitigation, prevention, and preparedness, then after a disaster it consists of emergency response, rehabilitation, and reconstruction. Disaster management strategies can be technical or non-technical supported by laws and regulations. Understanding of disaster management will be the first step to reduce the risks that arise when a disaster occurs.

Disaster risk reduction is an approach to identify, evaluate, and reduce risks caused by disasters. This includes reducing the possibility of hazard exposure, vulnerability, soil management, environmental management, and increasing preparedness. Disaster risk is the potential loss such as life, property, health, assets, livelihoods, public services, and others that occur to the community. Disaster management includes disaster risk analysis, disaster mitigation and preparedness, as well as post-disaster rehabilitation and reconstruction with a focus on development planning in areas prone to natural disasters. The rehabilitation plan and strategy in the master plan carries the concept of Build Back Better for Resilient Indonesia. Disaster risk reduction which adopts a build back better approach aims at handling emergency response and post-disaster rehabilitation as well as building resilient communities in facing disasters.

Disaster Risk Reduction in forest and land fires is carried out to prevent, alert, extinguish and handle fires. The Regional Disaster Management Agency as a non-departmental government agency in the Province and Regency is guided by the policy of the National Disaster Management Agency to provide socialization to the public regarding the impacts, dangers, and ways of dealing with forest fires, and disseminating disaster information through electronic media. Efforts to reduce the risk of forest and land fires disasters can cause problems such as the absence of law enforcement or strict sanctions against the perpetrators of forest burning and the absence of synchronization, coordination and integration with stakeholders in carrying out prevention activities. One way to



harmonize collaboration between government and communities is to carry out general preventive activities. Disaster risk reduction requires adapting changes and community-based approaches to tools that are widely discussed by practitioners and experts.

Community-based disaster risk reduction is an effort to empower communities to manage disasters with the level of involvement of the parties in planning and utilizing local resources as an approach that encourages communities to manage local disaster risk. These activities require efforts in interpreting the threats and risks of disasters it faces, such as prioritizing handling, reducing disaster risks, and evaluating their own performance. Collaboration between target communities and stakeholders is required, which is known as collaborative governance. Collaboration means working with individuals, groups or organizations. Collaborative governance according to note: something is missing here is an arrangement of one or more public institutions with stakeholder actors involved in the collective decision-making process oriented to consensus and aims to create, implement and manage public programs.

Community development has 3 activities, namely community-based, local resource-based and sustainable. The targets to be achieved are community capacity and community welfare. Targets can be achieved through empowerment efforts so that community members can follow the production process without differentiating their status and expertise, safety, sustainability and cooperation that will run simultaneously. The role of community development as a community development activity increases access in achieving better socio-economic-cultural conditions in forest and land management in Indonesia that has been running based on communities around forests and the involvement of the private sector engaged in the management of production forests in Indonesia.

Human factors are the cause of forest and land fires in Indonesia and usually occur in forests on mountains. A survey report conducted by the Ministry of Environment and Forestry in 2019 showed that forest and land fires were caused by human factors, deliberately, the perpetrator was ordered by other parties, and fires occurred due to clearing agricultural land and plantations. Fires mostly occur in forest and land areas in Kalimantan, which are on peat land which is caused by ground fire and also ignites above-ground forest fires during the dry season. Another factor is land clearing because forest burning is the easiest option to

convert forest into coconut groves and increases the selling price of the land. Forest fires in Sumatera and Kalimantan are suspected to be caused by human activity factors. In accordance with the 2019 report stating the conditions of forest and land fires in 7 provinces, namely Riau, Jambi, South Sumatera, West Kalimantan, Central Kalimantan, South Kalimantan and Papua, they are caused by human or anthropogenic activities and the majority occur in forestry and plantation areas.

## V. CONCLUSION

Based on the analysis of the research results above, it can be concluded that reducing the risk of forest and land fires disaster in Indonesia requires collaborative governance which is an important aspect in realizing the efficiency and effectiveness of forest and land fires management. The collaboration between government, community, private sector, and stakeholders to realize forest resilience is the step in minimizing the potential and risk of disasters related to forest management in Indonesia.

It is suggested that the legislative and executive as the public officials in making multi-policies and regulations regarding disaster management have to be involved and implied for revising regulation on disaster management in Indonesia. The related institutions as the public officials in making regulations on disaster management in Indonesia should be conducted for making better multi-regulation and covering the holistic collaborative governance of disaster management.

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