Al Qalam: Jurnal Ilmiah Keagamaan dan Kemasyarakatan
https://jurnal.stiq-amuntai.ac.id/index.php/al-qalam
P-ISSN: 1907-4174; E-ISSN: 2621-0681
DOI : 10.35931/aq.v17i1.1813

COLLABORATIVE GOVERNANCE ON NATURAL DISASTER MANAGEMENT : A STUDY ON FOREST AND LAND FIRES IN CENTRAL KALIMANTAN

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Abstract

Forest and land fires repeatedly occur each year in Indonesia, with a variety of sources that bring them about. There are 6 (six) provinces in Indonesia that have always experienced forest and land fires, because these six provinces have the largest peatland in comparison to other provinces. The Central Kalimantan Province experienced the largest forest and land fires in 2015 and 2019. Forest and land fires management involves multi-stakeholders both from the national and regional level. The research was conducted in Pulang Pisau Regency, to examine the collaborative collaboration process between stakeholders that have not functioned optimally. This is why forest and land fires keep on reoccurring annually. The authors conducted an analysis of several existing collaborative governance theories and based on the results of the subsequent analysis the authors recommended a collaboration governance model that is suitable to be applied to fire management on land specifically in Central Kalimantan and Indonesia in general. Here, the author reconstructs the collaborative governance theory of Ansell & Gash by adding a wisdom variable to become a new variable in implementing collaborative governance in forest and land fire disaste management in Central Kalimantan.
Keyword : Collaborative governance, forest and land fires, wisdom, disaster management of forest and land fires.

Abstrak

Kebakaran hutan dan lahan berulang kali terjadi setiap tahun di Indonesia, dengan berbagai sumber penyebabnya. Terdapat 6 (enam) provinsi di Indonesia yang selalu mengalami kebakaran hutan dan lahan, karena keenam provinsi tersebut memiliki lahan gambut terluas dibandingkan dengan provinsi lainnya. Provinsi Kalimantan Tengah mengalami kebakaran hutan dan lahan terbesar pada tahun 2015 dan 2019. Penanganan karhutla melibatkan multipihak baik dari tingkat nasional maupun daerah. Penelitian dilakukan di Kabupaten Pulang Pisau, untuk mengkaji proses kolaborasi kolaboratif antar pemangku kepentingan yang belum berjalan optimal. Inilah sebabnya mengapa kebakaran hutan dan lahan terus berulang setiap tahunnya. Penulis melakukan analisis terhadap beberapa teori tata kelola kolaboratif yang ada dan berdasarkan hasil analisis selanjutnya penulis merekomendasikan model tata kelola kolaboratif yang cocok untuk diterapkan pada penanggulangan kebakaran lahan khususnya di Kalimantan Tengah dan Indonesia pada umumnya. Disini penulis merekonstruksi teori Collaborative Governance dari Ansell & Gash dengan menambahkan variabel wisdom menjadi variabel baru dalam implementasi Collaborative Governance dalam penanggulangan bencana kebakaran hutan dan lahan di Kalimantan Tengah.
Kata Kunci : Tata kelola kolaboratif, kebakaran hutan dan lahan, kearifan, penanggulangan bencana kebakaran hutan dan lahan.

INTRODUCTION

Forest and land fires (karhutla) caused by a number of factors, occur almost every year in Indonesia, whether on a small, medium or large scale. Forest and land fires not only cause air

pollution or smoke-related disasters, it also has a major impact on ecosystems and biodiversity, deforestation, carbon and smoke emissions, soil sedimentation and erosion, damage to water and river resources, and increased potential for other disasters, including impacts on the socio-economic community. Extreme forest and land fires occur in countries such as Australia, the United States and other European countries. The major impact of the forest and land fires is the smoke disaster that will subsequently lead to a much wider spread of the impact to neighboring countries.

According to the updated data of the Statistics Indonesia (BPS) in 2020, shows the land area under forest area category, amounting to 120,599,794.73 hectares. This is a great accomplishment in the forestry sector in Indonesia which is an advocate of natural balance, as well as being the third largest region in the world with tropical and *rain forests*. Indonesian forest areas have great potential both economically and for environmental sustainability. But it is what encourages the exploitation of the potential of the forested areas in Indonesia that have great potential that provoke deforestation. The major causes of deforestation activities are illegal logging, the transfer of forest functions to plantations, forest fires, and unsustainable forest management. This practice can cause land to become barren and causing various kinds of natural disasters such as floods and landslides.

Based on the data of the Ministry of Environment and Forestry (KLHK), the impact of forest and land fires in 2019 burned an estimated 857,756 ha of forest and land. Based on the publication of the World Bank with the title Indonesia *Economic Quarterly Reports* (IEQ), Indonesia's loss from forest and land fires impact in 2019 amounted to US$5.2 billion equivalent to IDR 72.95 trillion (exchange rate IDR 14,000). Calculation of economic losses is based on mass forest fires occurring in eight priority provinces, namely Central Kalimantan, South Sumatra, South Kalimantan, Riau, West Kalimantan, Jambi, East Kalimantan and Papua. The data from Ministry of Environment and Forestry data also shows the area of forest and land fires throughout 2019 which is the widest in Central Kalimantan, South Kalimantan and West Kalimantan Provinces. On a total of 857,756 ha of forest and burnt land, 630,443 ha, or 73% are in other mineral land areas, while the remaining 227,308 ha, or 27% are peatland areas.

Poor governance causes illegal activities to emerge. In the area of land use, this includes wood theft, illegal placing of forest land, unlawful forest business activities such as laundering the proceeds from illegal logging crimes.[1] As a result, the Indonesian forestry sector failed to provide development benefits due to the loss of revenue, job opportunities, government revenues such as

[1] N. M. Kishor and K. L. Rosenbaum, "Indicators to Monitor Progress of Forest Law Enforcement and Governance Initiatives to Control Illegal Practices in the Forest Sector," *The International Forestry Review* 5, no. 3 (2003): 211–18.

royalties and taxes, and other local and global environmental services.[2] Furthermore, poor forest and land governance may negatively impact the community in the form of inadequate compensation and remediation of environmental functions. Improper logging activities also weaken legitimate forestry companies by placing them in unfair competition.[3]

However, the government has stated that it has made efforts to prevent forest and land fires through the development of various regulations governing forest resilience. The Minister of Environment & Forestry in 2018 stated that the government has aligned forestry policies with development plans, as well as international commitments, including the SDGs and the Paris Agreement, including linking SDGs targets and indicators to the National Medium-Term Development Plan (RPJMN). The Indonesian government's commitment to achieving SDGs is reflected in Presidential Regulation Number 59 of 2017 concerning Measures to Achieve SDGs. In the area of forest management, the government of President Jokowi focuses on addressing forestry issues to reduce poverty and social disparities. One of them is to take in the community around the forest. Despite all the efforts mentioned above, the fact that the incidence of forest and land fires still continues to occur until 2021, with a lower scale compared to 2015.

Despite the existence of legal aspects of disaster management programs in cross-sectoral development plans in Indonesia, but the types of forest and land fire disasters and registered land still happening annually until 2021 and could reproduce in the years to come.

Forest and land fires management at both the national and local levels is not well coordinated, the overlapping of management and programs is proof of that.[4] The occurrence of policy overlap can be interpreted as an indication that the forest and land fires prevention management has not been implemented collaboratively.[5] Meanwhile, actors influence decision making through their patronage networks for their own interests. These actors directly and indirectly benefitting from business problems, enjoying benefits at the expense of environmental quality.[6] These actors exchange information and form complex social networks that can influence decision-making processes at the district, national and regional levels. That policy issues, the national government must highlight its "collaborative role" in disaster management that is less

[2] Mariangeles Sabella, "Roots for Good Forest Outcomes : An Analytical Framework for Governance Reforms" (The World Bank, 2009), http://www-wds.worldbank.org/servlet/WDSContentServer/IW3P/IB/2009/09/10/000333037_20090910005834/Rendered/PDF/495720white0co11governance01PUBLIC1.pdf.

[3] Sabella. Tuukka Castrén and Madhavi Pillai, "Forest Governance 2.0 : A Primer on ICTs and Governance" (Washington, DC: World Bank, July 2011), https://openknowledge.worldbank.org/handle/10986/17243.

[4] A. Aminingrum, "Forest Fire Contest: The Case of Forest Fire Policy Design in Indonesia" (PhD Thesis, Erasmus University Rotterdam, The Netherlands, 2017).

[5] Aminingrum.

[6] Herry Purnomo et al., "Fire Economy and Actor Network of Forest and Land Fires in Indonesia," *Forest Policy and Economics* 78 (May 1, 2017): 21–31, https://doi.org/10.1016/j.forpol.2017.01.001.

central to the government by only taking an approach of handing over responsibility to the region.[7] The central government should strive to develop a system that would allow for rapid and effective collaboration with local governments in times of crisis and seek ways to bring out the power of local actors in disaster management.

Forest and land fires in Central Kalimantan Province in 2019 took place in Tumbang Nusa and Tanjung Taruna Villages, Jabiren Raya District, Pulang Pisau Regency. As shown in Figure 1.5, it can be seen that most of the land in Kalimantan is burned in peatland, which is 75,951 hectares. Quoting a report entitled Profile of Peat Care Villages which is the result of "Social Mapping Report 2018 of Tanjung Taruna Village, Jabiren District, Pulang Pisau Regency, Central Kalimantan Province" published by the Peat Restoration Agency (BRG), Tanjung Taruna Village is one of the villages that experienced major fires in 2015. 75% of the peatlands in the villages of Tumbang Nusa and Tanjung Taruna were burnt, while the other 25% of the peatlands were still in good condition. Tanjung Taruna Village is one of the coverage villages of the Indonesian Peat Restoration Agency (BRG) which focuses on peat protection. BRG is a Non-structural Institution established based on the Presidential Regulation of the Republic of Indonesia Number 1 of 2016 concerning the Peat Restoration Agency.BRG is under and responsible to the President and led by a Head, and is tasked with coordinating and facilitating the peat restoration in the Provinces of Riau, Jambi, South Sumatra, West Kalimantan, Central Kalimantan, South Kalimantan, and Papua.

The implementation of forest and land fire disaster management is currently not organized and managed collaboratively in accordance with the provisions of Law No. 24 of 2007 on disaster management, due to the fractionation of roles and authorities of the *stakeholders* involved. Based on this phenomenon, the author of the present wishes to conduct research on the following subjects; how to implement collaborative governance for disaster management in forest and land fire disasters in Pulang Pisau Regency, Central Kalimantan Province and what model of collaborative governance that will be recommended for disaster management in forest and land fire disaster management in Pulang Pisau Regency, Central Kalimantan Province.

RESEARCH METHOD

This study aims to find, understand, explain, and analyze as well as try to find the forest and land fires disaster management model needed to achieve sustainable forest resilience in Central Kalimantan Province, especially in Tumbang Nusa village and Tanjung Taruna village in Pulang Pisau Regency.

[7] Yooil Bae, Yu-Min Joo, and Soh-Yeon Won, "Decentralization and Collaborative Disaster Governance: Evidence from South Korea," *Habitat International*, Decentralising Disaster Governance in Urbanising Asia, 52 (March 1, 2016): 50–56, https://doi.org/10.1016/j.habitatint.2015.08.027.

The objective of this study is to develop a collaborative governance model for disaster management at Forest and Land Fires Disaster Management. This study chose a location in Pulang Pisau Regency, Central Kalimantan Province. Pulang Pisau Regency, Central Kalimantan Province was chosen with various considerations that Pulang Pisau Regency is one of the production forest areas with the largest peatland in Central Kalimantan, and has a fairly high complexity of problems on risks related to forest fire disasters and the largest land in Indonesia. This is can be done in accordance with the wider distribution of potential areas prone to forest and land fires which impacts the heavier burden that must be borne by the government, both central, provincial, and regional governments, and companies as the private sector in managing production forests.

This study involved interviews with 22 *key informants* and observed social events organized by the authorities to the surrounding community about the dangers of forest and land fires. Furthermore, researchers also observed the activities of the disaster management efforts, collaboration of all stakeholders; how the activities of carrying out their tasks and functions, how to implement disaster management principles in Central Kalimantan Province, as well as global cooperation networks carried out by the Central, Provincial and Regional Governments.

To meet the credential standard, researchers do this in the following ways; a). The researcher has extended the initial research period from three months to four months. By extending the length of this study, the necessary data needed can be collected more comprehensively about collaborative governance for disaster management in forest and land fire disaster management in Central Kalimantan Province, b). The researcher made intensive observations (*persistent observation*) by observing various activities carried out through collaborative governance for disaster management in forest and land fire disaster management in Central Kalimantan Province. Thanks to this intensive observation, the observed object is more visible and can be captured well, c). The researcher conducted a triangulation method to verify the accuracy of the data collected, especially triangulation between informants by conducting a survey or confirmation to the Head of BNPB with the Head of BPBD of Central Kalimantan, Palangkaraya, and the Pulang Pisau, or a survey with the Provincial, Municipal and Regency Governments, d). The researcher conducts a discussion (*peer* debriefing) with experts and practitioners, which the researcher considers to have sufficient knowledge about the research theme that the researcher conducts. Discussions were conducted to obtain input concerning the substance and/or process of this study, e). The researcher carried out the process of *member check* by involving the Head of BNPB with the Head of BPBD Central Kalimantan, Pulang Pisau and the Central Kalimantan Provincial Government, the Government of Pulang Pisau Regency. This process is designed to verify whether the research report and statements in the in-depth interview

are in accordance with the intended purpose. This *membership* verification process is important to ensure that the research findings do not conflict with the reality in the field, (f) Researcher organizes a focus group discussion (FGD) in Palangkaraya by presenting representatives of *stakeholders* related to forest and land fires, so that data becomes *saturated*.

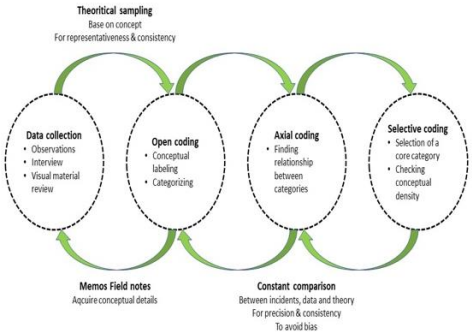

Figure 1. 1 Grounded Theory *Research Procedures*[8]

BY analyzing the author's data with the *Grounded Theory* method, this method has been able to explore and dissect the problems of interaction and behavior of human group actions.[9] Furthermore, the field research results can be described and interpreted as the proposition of how the process flow of a phenomenon occurs and what things can be done to overcome it so that the phenomenon does not occur again. Based on these propositions, it is possible to construct a model or a theory to understand the phenomenon.

The results of *the data collection* analysis with *22 key informants were* then grouped into characteristics or aspects of disaster management activities for forest and land fires as well as characteristics and aspects of collaborative governance activities. After carrying out various combinations of relevant possibilities and assisted by the best *knowledge*, *experience*, and interpretation of the author in the field of forest and land fires so far, the *Open Coding* stage can be grouped into 9 relevant categories. Furthermore, in the *Axial Coding* stage, the author united the 9 categories into 3 core category groups, and finally, in the Selective Coding stage, the authors built a whole storyline on how the phenomenon of forest and land fires occurs repeatedly every year in Indonesia to answer the research questions above.

[8] Juliet Corbin and Anselm Strauss, *Basics of Qualitative Research: Techniques and Procedures for Developing Grounded Theory* (SAGE Publications, 2014).

[9] Corbin and Strauss.

RESULT AND DISCUSSION

Researcher conducted interviews with 22 *key informants* representing *stakeholders* in Tumbang Nusa and Tanjung Taruna Villages in Pulang Pisau Regency, Central Kalimantan Province, Indonesia in January-February 2021. From the results of the interview, the researchers further grouped the interview results into several categories related to the implementation of forest and land fire disaster management activities. The following can be presented the results of research on the implementation of disaster management by forest and land fire *stakeholders* in Pulang Pisau Regency, Central Kalimantan Province as follows;

A. *Stakeholders* Involved

The implementation of forest and land fire disaster management involves many stakeholders, ranging from central government, provincial government, regency/city government, village government, community, corporations, NGOs. This also applies in Central Kalimantan Province, the main stakeholders involved are.

The role of *stakeholders* has been regulated in Presidential Instruction Number 3 of 2020 and also regulated in Central Kalimanatan Provincial Regulation Number 5 of 2003 and Governor Regulation Number 24 of 2017. The substance of these regulations further regulates the role of stakeholders to carry out fire responders in the event of a fire. This led to a fragmentation of the roles and authorities of stakeholders in the management of forest and land fires in Central Kalimantan province. Additionally, not all stakeholders involved in the domain are listed in Presidential Decree No. 3 of 2020.

B. Implementation of Collaborative Governance

The results of the research were related to the implementation of the collaborative governance process for forest and land fire management in Central Kalimantan Province, which can be explained by the existing conditions (*existing model*) grouped the variables that affect the outcome of a collaborative governance model as follows;

C. *Starting Condition*

There is always a balance between *power and* expertise between *stakeholders* in the field, namely between the community, GAPKI, related institutions in the local government and related institutions in the central government, namely the TNI/Polri, KLHK, BNPB, BMKG, EIG. Peatland conditions lead to rapid fires. *Key informants* said that humans are the cause of forest and land fires for various reasons. Land ownership by various layers of owners whether it is corporations, certain groups or individuals. There are socio-economic differences between

landowners and those who in need of *income*, so this condition makes it easier for certain community groups to get wages from landowners to open agricultural lands by burning. Conditions like this one are further aggravated by the involvement of certain officials who back up the land clearing process by fire. The law enforcement process has been ineffective. In addition, *stakeholder* institutional capacity varies, which makes it difficult to organize the collaborative process.

D. *Facilitative Leadership*

Leaders at the central and regional levels have facilitated *stakeholders* to collaborate in implementing forest and land fire disaster management programs. The Minister of Environment and Forestry at the central level has tried to make the relevant K/L willing to be coordinated by the LHK Minister, although in general the provisions of the LHK such as the Ministry of Agriculture and the Ministry of Trade are under the coordination of the Coordinating Ministry which is different from the LHK Ministry. This becomes a problem when the Ministry of Environment and Forestry as the *leader* in forest and land fire management is not easy to mobilize the relevant Ministries under different Coordinators. This issue also occurs at the regional level, namely Commander of the Military Resort Command has assigned his ranks at the village level (Babinsa) to encourage the village community, along with the village head, not to burn to open agricultural land but by other alternative means, namely building fishery ponds so that people get new livelihoods in place of the old way of burning and opening up agricultural land. However, this facilitating leadership remains ineffective, since this activity is not programmed definitively every year by the central government, district government or village government.

E. Institutional Design

The author notes that there is no policy, basic protocol and basic rules for collaborating in the implementation of the PRB. There are no protocols and policies governing to determine the minimum number of *stakeholders* who must participate in the implementation of PRB to represent consensus decision-making. The key informants interviewed were 22 individuals who represented the stakeholders involved at every levels, ranging from the national, provincial, district and village levels.

F. Collaborative Process

The author observes how the process of collaboration with its elements goes on; 1). Face to face dialogue, 2). trust building, 3). commitment to process, 4). shared understanding, and 5). intermediate outcomes. The forest and land fire response organization was formed after the

Governor established the status of a state of emergency, and this organization was directly led by the Governor at the provincial level. This emergency response organization conducts the collaborative process by arranging the roles of each stakeholder according to the stakeholders table above, at daily meetings held at the Command Post. The Governor appoints the Commander of the Military Resort Command as the daily Task Force Commander. Commander of the Military Resort Command organizes the collaboration process both for disaster management and for fire response. The 5 (five) elements of the collaborative process are being implemented, but still remember that there is still a power/competency imbalance between the *stakeholders*, so the intermediate outcomes cannot be achieved effectively, so the collaborative process has not been achieved properly, and the occurrence of forest and land fires still occurs every year. The collaborative process is also takes the form of a MoU between the Task Force and the Corporation, which is to split the role in the event of a fire in the corporate facilities, it is the duty of the corporation to prevent it and to put it out. When there is a fire outside the plantation area, it will be the task of the Task Force to prevent and extinguish it. NGOs have also sought a grant from the Ministry of Foreign Affairs to improve community capacity. The BPBD collaborates with BNPB to get helicopter water bombing assistance. However, the achievement of *intermediate outcomes* has not been smooth enough to make the collaborative process ineffective.

G. Discussions

Observations of the research results show that in carrying out collaborative governance efforts between *stakeholders*, leaders at the national level (Ministry of Environment and Forestry) and leaders at the regional level (Korem Commanders and Village Heads), use principles that are directly related to the principle of *wisdom*, namely trying to certain ways to accept, yield, and work patiently hard so that cross-stakeholder coordination meetings can be held properly. The Ministry of Environment and Forestry said that the occurrence of forest and land fires was mostly caused by the escalation of land clearing for plantations whose permits and authority was actually the responsibility of the Ministry of Agriculture. On the other hand, the Ministry of Environment and Forestry and the Ministry of Agriculture are under different Coordinating Ministries. So that there is indeed a fragmentation of authority between the stakeholders involved.

At the same time, modern leadership and management often lose focus in optimizing the empowerment of *stakeholders* in achieving *an* outcome.[10] It is very clear that exaggeration in global affairs ends with confusion in the final goal.[11] By returning to the roots of culture (*ancient*

[10] Stephanie T. Solansky, "To Fear Foolishness for the Sake of Wisdom: A Message to Leaders," *Journal of Business Ethics* 122, no. 1 (June 1, 2014): 39–51, https://doi.org/10.1007/s10551-013-1752-9.

[11] Ali Intezari and David Pauleen, : *: Integral Decision Making for the Data Age* (London: Gower, 2018), https://doi.org/10.4324/9781315547022.

roots), *wisdom practice and theory* receive attention again and research has been conducted to be applied in the leadership and management context.[12] state that problems/ issues that are increasingly complex (*wicked problems*) faced by *leaders* in carrying out public issues, then *leaders* must have a reliable capacity in making a decision to optimize the opportunity to achieve *excellent outcomes* with limited timeframes and available resources.[13] concluded that there are *10 key aspects of wisdom*, they are; *1). Concerned with fundamental matters of life, 2). Knowledge, 3). Experience, 4)Practice Oriented, 5). Ethics, 6) Self-transcendence, 7). Judgment, 8). Non Rationality, 9). Emotions, 10). Awareness of the limits of knowledge*. In the implementation of collaborative PRB forest and land fires, leaders at the national and regional levels use the key aspects of wisdom. As a result, there is a need to incorporate *wisdom* into management/collaborative decision-making.

Collaborative governance theory when used in the implementation of forest and land fire disaster management, it is necessary to add a new *context* variable, namely the *wisdom* variable.[14,15] With the *wisdom* variable, it is expected that the implementation of disaster management in the management of forest and land fires in Pulang Pisau Regency or other locations in Indonesia can be *achieved* good results.[16] The *context* variable influences the policy implementation process.[17] The implementation of collaboration on disaster management, the role of leaders must be wise in making strategies to address *the gap* that occurs in the disaster area through the implementation of tasks from the central government that are vertical but carried out horizontally together with the tasks of local governments in order to strengthen collaborative governance and vice versa.[18]

Reconstruction model to be used in the implementation of forest and land fire disaster management.[19] The collaborative governance reconstruction model in Figure 5.1 is a model that was built from the results of research in Pulang Pisau Regency. The collaborative governance recommendation model above is a typical collaboration model that can be used in various forest and land fire prone locations in Indonesia, since the condition of the factors causing it is almost the same. Similarly, the status of the five collaborative variables in the reconstruction model

[12] Intezari and Pauleen.

[13] David Rooney, Bernard McKenna, and Peter Liesch, *Wisdom and Management in the Knowledge Economy* (Routledge, 2010), https://doi.org/10.4324/9780203852798.

[14] Rooney, McKenna, and Liesch.

[15] Chris Ansell and Alison Gash, "Collaborative Governance in Theory and Practice," *Journal of Public Administration Research and Theory* 18, no. 4 (October 1, 2008): 543–71, https://doi.org/10.1093/jopart/mum032.

[16] Ansell and Gash.

[17] Merilee S. Grindle, *Politics and Policy Implementation in the Third World* (Princeton University Press, 2017).

[18] Maarif S, "Rencana Nasional Penanggulangan Bencana 2015-2019. Badan Nasional Penanggulangan Bencana," 2014.

[19] Ansell and Gash, "Collaborative Governance in Theory and Practice."

above is almost typical of the same for various areas prone to forest and land fires in Indonesia. Based on these conditions, this recommendation model can be used as a model of collaboration that is typical and in its implementation in various regions in Indonesia by considering the conditions of each region and set out in the appropriate policy form.

CONCLUSION

Based on the results of the research on the implementation of collaborative governance for forest and land fire disaster management in Pulang Pisau Regency, Central Kalimantan Province, the author may formulate some conclusions from the results of the research that the implementation of collaborative governance for the management of forest and land fires in Pulang Pisau Regency, Central Kalimantan Province, with the collaborative governance theory approach by Ansell & Gash through 4 (four) variables, has not worked effectively. The roles and functions of stakeholders have not been incorporated into the in principles of the collaborative model. Research on four (four) collaborative variables shows that conditions rather than research do not show that the collaborative process is proceeding well.

The analysis of research results related to the collaborative process shows that for the implementation of forest and land fire disasters management in Central Asia additional *wisdom* variables are needed in the collaborative governance model, so the recommended collaborative governance model is a reconstruction of the collaborative governance model Ansell & Gash.

As a result of this model recommendation, there is a need for policy improvement on combating forest and land fires by taking into account the model recommendations above.

REFERENCES

Aminingrum, A. “Forest Fire Contest: The Case of Forest Fire Policy Design in Indonesia.” PhD Thesis, Erasmus University Rotterdam, The Netherlands, 2017.

Ansell, Chris, and Alison Gash. “Collaborative Governance in Theory and Practice.” *Journal of Public Administration Research and Theory* 18, no. 4 (October 1, 2008): 543–71. https://doi.org/10.1093/jopart/mum032.

Bae, Yooil, Yu-Min Joo, and Soh-Yeon Won. “Decentralization and Collaborative Disaster Governance: Evidence from South Korea.” *Habitat International*, Decentralising Disaster Governance in Urbanising Asia, 52 (March 1, 2016): 50–56. https://doi.org/10.1016/j.habitatint.2015.08.027.

Castrén, Tuukka, and Madhavi Pillai. “Forest Governance 2.0 : A Primer on ICTs and Governance.” Washington, DC: World Bank, July 2011. https://openknowledge.worldbank.org/handle/10986/17243.

Corbin, Juliet, and Anselm Strauss. *Basics of Qualitative Research: Techniques and Procedures for Developing Grounded Theory*. SAGE Publications, 2014.

Grindle, Merilee S. *Politics and Policy Implementation in the Third World*. Princeton University Press, 2017.

Intezari, Ali, and David Pauleen. : *: Integral Decision Making for the Data Age*. London: Gower, 2018. https://doi.org/10.4324/9781315547022.

Kishor, N. M., and K. L. Rosenbaum. "Indicators to Monitor Progress of Forest Law Enforcement and Governance Initiatives to Control Illegal Practices in the Forest Sector." *The International Forestry Review* 5, no. 3 (2003): 211–18.

Maarif S. "Rencana Nasional Penanggulangan Bencana 2015-2019. Badan Nasional Penanggulangan Bencana," 2014.

Purnomo, Herry, Bayuni Shantiko, Soaduon Sitorus, Harris Gunawan, Ramadhani Achdiawan, Hariadi Kartodihardjo, and Ade Ayu Dewayani. "Fire Economy and Actor Network of Forest and Land Fires in Indonesia." *Forest Policy and Economics* 78 (May 1, 2017): 21–31. https://doi.org/10.1016/j.forpol.2017.01.001.

Rooney, David, Bernard McKenna, and Peter Liesch. *Wisdom and Management in the Knowledge Economy*. Routledge, 2010. https://doi.org/10.4324/9780203852798.

Sabella, Mariangeles. "Roots for Good Forest Outcomes : An Analytical Framework for Governance Reforms." The World Bank, 2009. http://www-wds.worldbank.org/servlet/WDSContentServer/IW3P/IB/2009/09/10/000333037_20090910005834/Rendered/PDF/495720white0co11governance01PUBLIC1.pdf.

Solansky, Stephanie T. "To Fear Foolishness for the Sake of Wisdom: A Message to Leaders." *Journal of Business Ethics* 122, no. 1 (June 1, 2014): 39–51. https://doi.org/10.1007/s10551-013-1752-9.

Law Number 19 of 2004 concerning Stipulation of Regulations in lieu of Law Number 1 of 2004 concerning Amendments to Law Number 41 of 1999 concerning Forestry.

Law Number 24 of 2007 concerning Disaster Management.

Law Number 32 of 2009 concerning Environmental Protection and Management

Government Regulation (PP) No. 21 of 2008 concerning Implementation of Disaster Management.

Instruction number 3 of the President of the Republic of Indonesia of 2020 regarding forest and land fire management.

National Board for Disaster Management (BNPB). (2014). Overview of the Disaster Management Cycle in Indonesia. National Board for Disaster Management.

Regional Regulation Number 5 of 2003 concerning Forest and Land Fire Control in Central Kalimantan Province.

Governor Regulation Number 24 of 2017 concerning Implementation of Emergency Handling of Forest and Land Fires in Central Kalimantan.