

The Role of Wanagama as a Healing Forest during the COVID-19 Pandemic

Dwiko Budi Permadi, Ratih Madya Septiana*, Handoyo H Nurjanto, Rini Pujiarti, Ananto Triyoga
Department of Forest Management, Faculty of Forestry, University of Gadjah Mada, Yogyakarta, Indonesia

Submitted: April 11th 2022; Revised: May 25th 2022; Accepted: June 02th 2022

Keywords:
COVID-19
Forest
Partnership
Quarantine
Wanagama

Abstract The increase in COVID-19 cases had resulted in the Government of Indonesia establishing a National Health Emergency on the 1st of April 2020, followed by Large-scale Social Restrictions (PSBB). This condition had directly impacted people's lives in the countryside, namely the reduced ability to meet the needs of life, especially the need for food. In addition, quarantine rooms had been required to accommodate reactive rapid test patients because their number had exceeded the capacity of the hospitals that treated COVID-19 patients. Furthermore, facilitation and instrumentation to improve people's ability from stagnating economic activities in the countryside are also necessary. This situation led to an emergency response at Wanagama Healing Forest and the anticipated activities after the pandemic. The community service activity was implemented for six months in the Wanagama Healing Forest, involving the target groups of village communities surrounding the forest, task force of COVID-19, and reactive rapid test patients throughout Gunung Kidul Regency. The community service activities consisted of (1) improving food security and purchasing power of the communities, (2) improving knowledge and awareness of COVID-19, (3) provision of quarantine houses for reactive patients of Gunung Kidul Regency, and (4) revitalization of Mangium House as a partnership house to produce honey bee, essential oil and community empowerment.

1. INTRODUCTION

The COVID-19 pandemic was caused by the SARS-Cov2 virus, which forced countries around the world to declare a national emergency. The Government of Indonesia had also established a National Health Emergency on the 1st of April 2020 followed by Large-Scale Social Restrictions (PSBB). People's lives began to change drastically because of the development and service sectors that had to stop their activities, especially in the central cities of education, economy, and industry such as Jakarta, Surabaya, and Yogyakarta.

This virus can survive on the surface of objects for several hours, meanwhile, it can last up to 72 hours on plastic or stainless iron objects and up to 4 hours on copper (Doremalen et al., 2020). The incubation period is on average from 5 to 6 days with the longest incubation period of 14 days. Therefore, 14 days are needed for quarantine. If a contacted person cannot undergo quarantine in a separate place, the person must undergo self-quarantine for 14 days at home;

people undergoing self-quarantine may need assistance while carrying out physical distancing measures to prevent the spread of the virus (WHO, 2020).

This pandemic brings damage to almost people's life sectors, and it had significant impacts that can be felt in all fields, including the economy, politics, health, social life, or religions. The job sectors, both formal and informal, were also struck by the negative impacts of the pandemic (MS & Rizaldi, 2020). This condition has a direct impact on life in the countryside, one of which is experienced by the community around the Wanagama Teaching Forest. Many villagers had become unemployed due to the lost of jobs. This condition could result in a reduced ability of residents to meet the needs of their daily life, especially their needs for food. In anticipation of a food crisis, the government had provided social and financial support directly to the poor villagers affected. However, the number and level of admission speed of this program were still considered inadequate.

The key to the rest of the national economic conditions was survival at the individual and business entity level. Therefore, the state must exert all efforts, including providing stimulus, so that its people would not collapse during the crisis, remain productive, and have adequate income, and that businesses can continue to run (Hadiwardoyo, 2020).

According to the website of the Yogyakarta Region (<https://corona.jogjaprovo.go.id/>), the number of reactive and positive patients had increased, especially in Gunung Kidul Regency. The number of patients exceeded the capacity of the hospitals that treated patients because there were only two hospitals to accommodate patients in Gunung Kidul. Therefore, the regency required a quarantine area to accommodate reactive rapid test patients.

Furthermore, problems which anticipated to occur at the end of the pandemic must also be considered. Those problems include the internalization of healthy living culture and the creation of an economy to improve food security and public health through community empowerment. In addition, it was important to provide facilitation and instrumentation to improve people's ability to increase economic growth from the stagnation of economic activity in the countryside. In this context, the diversity of people's income must be improved based on the potential of their surrounding resources and market needs in each village in the post-pandemic era.

Therefore, several strategies were needed to help the communities around Wanagama Teaching Forest to overcome problems in Gunung Kidul Regency during the pandemic and post-pandemic. The objective of this article was to identify the roles of Wanagama Healing Forest in food security, public health, and forest education during and after the COVID-19 Pandemic.

2. METHOD

This thematic community service activity was limited to solve the problem of COVID-19 emergency response during the pandemic and increasing the role of villagers in the new normal era after the pandemic ends. The location of the activity was limited to villages and areas in Wanagama Teaching Forest, Gunung Kidul. This community service activity used a large-scale social collaboration approach with various related parties. The approaches and procedures of the activities carried out are as follow.

2.1 Collaboration with Wanagama Companion

The collaboration was carried out to raise funding from the alumni of the Faculty of Forestry UGM throughout Indonesia and related institutions to provide food assistance packages to residents around Wanagama. This collaboration was aimed to fulfill the food needs of the most vulnerable people in the countryside during PSBB. The impact of this activity was expected to prevent negative community interactions with Wanagama Forest resources, such as wood theft. To prepare the packages, the following steps were carried out.

- a. Setting a target of 500 packages with a value of IDR 150,000/package; at least IDR 75,000,000 was needed
- b. Paying for flyers of 500 food aid packages uploaded on various social media platforms and alumni networks of FKT UGM.

- c. Identifying 500 family heads, who were vulnerable to food security, had not received social assistance and direct cash assistance packages from the government, volunteers, or community protection members, stood guard during COVID-19 and lost their jobs in Banaran, Ngleri, Gading, and Bunder villages.
- d. Submitting an aid package to the Bank of Food in collaboration with the Faculty of Agricultural Technology UGM, Oemi Haniin Foundation, and Kagamahut Foundation.
- e. Purchasing of basic food packages in the form of rice, cooking oil, soy sauce, granulated sugar, and money worth with IDR 150,000 per tote bag.
- f. Distributing 500 packages of assistance packages to registered heads of families in collaboration with volunteers in each hamlet or village.
- g. Documenting distribution activities to residents in each village.

2.2 Collaboration with Gunung Kidul Regency Government

A collaboration was carried out to provide Wisma Wanagama facilities to be managed by the Gunung Kidul Regency Government during the emergency response period for reactive patient quarantine. The impact of this activity was expected to improve the physical and mental health of patients as the site was in a beautiful forest environment and promoted the Educational Forests as a healing forest site. The steps taken are as follows.

- a. Coordinating with the Government of Gunung Kidul Regency, in this case, the Head of the Gunung Kidul Covid Response Task Force.
- b. Encouraging the renewal of the MOU between the Government of Gunung Kidul Regency and UGM.
- c. Launching a partnership agreement for the utilization of Wisma Wanagama as a Quarantine House between the Government of Gunung Kidul Regency and the Faculty of Forestry UGM.
- d. Disinfecting and fogging researchers' houses area by involving teams from Faculty of Forestry UGM.
- e. Monitoring the use of Quarantine Houses during the partnership.
- f. Disseminating information on the Quarantine House and evaluating of the utilization of it before and after collaborating with the surrounding villagers.

2.3 Collaboration with Partners of Forest and Land Rehabilitation (RHL) Farmer Group

This collaboration aimed to revitalize the Mangium House in compartment 17 as a Partnership House between Wanagama and community group surrounding forest. The Mangium House would function as a center for community empowerment and education on reforestation of forestry innovation based on non-timber forest products. Therefore, this collaboration aimed for the community to have production and learning facilities to utilize Wanagama Teaching forest to support functional food security after the pandemic. Its impacts were expected to increase employment for the community and the utilization and protection of forests from natural and human disturbances. The steps taken are as follows.

- a. Coordinating with communities, such as: the community groups of forest rehabilitation; the ecotourism groups; the honey bee's farmer group; forest farmer group; the woman group of eco-print activity; and the group of springs maintenance.
- b. Drawing up a renovation plan for the Mangium House.
- c. Carrying out the Mangium House renovation activities to be used as an educational vehicle to produce non-timber forest products, including forest honey, eucalyptus oil and melaleuca oil, eco-print, and organic fertilizers to support forest and land rehabilitation.
- d. Inaugurating the enactment of the Mangium Partnership House as a Learning House for Reforestation and Forestry Innovation (RuBRIK) Wanagama based on non-timber forest products.

3. RESULT AND DISCUSSION

3.1 Improving Food Security and Purchasing Power of Communities around Forests

The national health emergency led to a decrease in the income of the people around Wanagama Forest, especially workers in the informal sector, such as farmers and ranchers. Therefore, the food distribution had helped the communities around Wanagama Forest amid the pandemic situation, which had been impacted since the 31st of March 2020.

The activities started from the preparation of funding, namely fundraising through flyer publications on various social media and alumni networks of the Faculty of Forestry UGM (Figure 1). The opening of donations began on the 27th of April and closed on the 11th of May 2020. In addition to the donations, the committee received assistance in other forms, namely the provisions of rice and sugar for the food packages. The fundraising target for food aid was 500 packages with IDR 150,000 per package. The package consisted of 5 kg rice, 2 liters of cooking oil, one pack of soy sauce, one tote bag, and IDR 50,000 in cash.

Eventually, the donation collected exceeded the target, resulting in 667 packages. The committee and volunteers prepared the packages in the Kesambi Room in Wanagama on the 12th of May 2020. The total charitable donations reached IDR 104,050,000. In addition, the committee bore additional operational expenses and other field costs arising from this activity. The food distribution was adjusted according to the identification of the households who had not received a social assistance package, money from the government, victims of termination of employment, members of the community protection and vulnerable communities in food security. The distribution was divided into two stages. The first one was carried out by Wanagama volunteers on Wednesday, the 13th of May 2020, in seven hamlets, which were Banaran I to VI and Gading III (Figure 2 and 3). Subsequently, the second one was done by volunteers on Friday, 15th of May 2020 in Ngleri Lor, Kemuning, Wanagama Employees, and Former Wanagama Employees.



Figure 1. The preparation of Food procurement activities taken in May 12th 2020



Figure 2. The Distribution of Food procurement activities to community taken in May 13th 2020



Figure 3. Publication of food distribution on various social media taken in May 13th 2020

3.2 Education to Prevent the Spread of COVID-19

It aimed to prepare human resources for health protocols, quarantine preparations at the Researcher's House, and mental psychics for people living around the forest (Figure 4). Therefore, the trainees came from village volunteers and Wanagama employees who could be role models for the community to prevent the spread of COVID-19.

The activity was held from the 22nd to 24th of May 2020 in front of the Wanagama Hall, and all people involved observed physical distancing throughout the activity.

The Director of Gunung Kidul District Hospital (RSUD), the Director of Saptosari Hospital, the Health and Social Officer, the Regional Secretary, the Head of People's Welfare section, the Head of the Communication and Informatics Office, and the Gunung Kidul Regency Disaster Management Agency also attended this activity. The materials presented in the activity included COVID-19 health protocols, which showed how to wash hands, wear masks, and proper personal protective equipment. At the end of the activity, the participants were trained to increase their body's immunity during the emergency situation to stay fit, and they received the "UGM Greeting" package. The package contained multivitamins, hand sanitizers, masks, and guidebooks.



Figure 4. Information session of health protocols taken in May 22th 2020

3.3 The Researcher's House as Rapid Test Reactive Patient Quarantine House in Gunung Kidul Regency

Wanagama had played a role in suppressing the spread of COVID-19 by working with the Gunung Kidul Regency Government. The increase in patients could exceed the hospital's capacity because there were only two referral hospitals in Gunung Kidul to accommodate patients. Therefore, all rooms of the Researcher's House were transformed into a Quarantine House to accommodate reactive rapid test patients effectively.

The Quarantine House started on the 21st of May 2020 after signing the Cooperation Agreement between the Rector of UGM and the Deputy Regent of Gunung Kidul. The agreement included preparing medical personnel, security, and supporting patient facilities ranging from health logistics to food. UGM provided the Researcher's House consisting of eight houses with 46 beds consisting of 42 beds for patients and four beds for medical personnel. The calm and beautiful atmosphere of the Wanagama Forest and its location being away from the hustle and bustle of the city was expected to support the physical and mental health of patients during the Forest Healing therapy.

The activities in the Quarantine House were carried out according to the health protocols (Figure 5). These were done in collaboration among the Gunung Kidul Health Office, the Indonesian Red Cross, and UGM. The principle for "Only One Person in One Room" was adopted to minimize the transmission risk.

Each patient was subjected to several routine activities, namely gymnastics and religion-related activities every morning and counseling sessions with psychologists every Tuesday and Thursday. The patients were made comfortable because they could access Wi-Fi for their activities. However, washing clothes was prohibited in the Quarantine House to reduce the risk of fellow patients undergoing quarantine.



Figure 5. Activities in the Quarantine House taken in June 2020

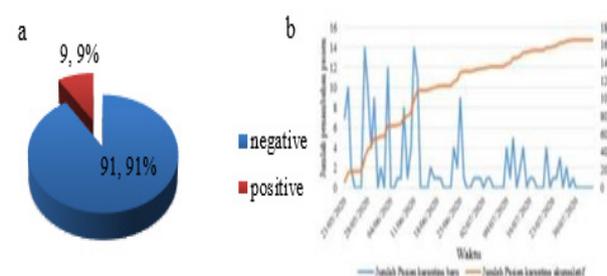


Figure 6. a) Percentages of COVID-19 Patients in Wanagama Quarantine House; b) Number of Wanagama Quarantine House Patients June 21st – August 4th, 2020

The number of patients in the Quarantine House fluctuated, but it had a declining trend. The accumulative number of patients in the Quarantine House from the 21st of June to the 4th of August 2020 was 166 people, including 15 people testing positive for COVID-19 after swab tests or 9% of the overall patients (Figure 7). Patients who tested negative after quarantine and swab tests amounted to 151 people or 91% of the total patients (Figure 6). The committee gave souvenirs consisting of mangium seeds, eucalyptus oil, and teak tree to patients before they returned home to promote Wanagama.

The Gunung Kidul Government conducted regular disinfectant spraying at the Researcher's House (Figure 8). In addition, UGM Occupational and Environmental Health Safety Security Center officers also sprayed disinfectants in various Wanagama rooms, including Sandalwood, Kesambi, Meranti, Damar, Mulberry Hall, Researcher's House, Guard Post, and several other rooms to prevent the COVID-19 virus and dengue fever in the Wanagama Forest environment

The implementation of Quarantine House activities went well until the end of the partnership. The partnership between the Gunung Kidul Regency Government and UGM officially ended on the 11th of August 2020

from the Deputy Regent of Gunung Kidul to the Dean of the Faculty of Forestry UGM. After this handover ceremony, guests enjoyed deer meat cooking at Pawon Alas Resto.



Figure 8. Disinfectant spraying taken in September 2020



Figure 9. Quarantine House Publications for Reactive Rapid Test Patients

Videos and posters were released online through the official social media platform of Wanagama and UGM, such as Facebook, Instagram, UGM news, and Kagama.co to spread the information about the activities (Figure 9). For example, the publication of Wanagama activities, as one of the quarantine places of Gunung Kidul Regency, can be accessed in various public media, with details provided in attachments.

3.4 Revitalization of Mangium House as a Partnership House for Community Empowerment Around Wanagama Forest

The revitalization of the Mangium Partnership House in compartment 17 had been implemented to support the target communities in the attempt to use forests wisely and with control. The targets of this partnership were groups around the Wanagama Forest. This partnership was aimed to support food security and the provision of community jobs around Wanagama Forest in the New Normal era. The Mangium Partnership House will be a showroom and center for community empowerment and education on reforestation of forestry innovations based on non-timber forest products

such as forest honey and its derivative products, melaleuca oil, eucalyptus oil, eco-print, and organic fertilizers to support the rehabilitation of forests and land. The contribution of partners in this activity was giving more energy from upstream to downstream.

The revitalization of Partnership House as a Learning House for Reforestation and Forestry Innovation (RuBRIK) Wanagama that was based on non-timber forest products had reached 90%. The economic impact could be seen from the absorption of labor to prepare the Mangium Partnership House Revitalization location. In support of the plan for implementing the activities, showroom revitalization activities were also carried out to develop the distillation of eucalyptus oil, melaleuca oil, and honey bee production. Ordering small-scale distillation equipment with a capacity of 10 kg of dry materials had been made. The selection of eucalyptus oil and melaleuca oil itself were based on the potential of tree stands in the forest which had not been optimal in their utilization. In addition, eucalyptus oil and melaleuca oil could be used to support health, namely as a drug that serves to relieve the symptoms of cold or influenza. The community managed to sell 200 10-milliliter, roll-on bottles of melaleuca oil and provide biochar fertilizer for the forest and land rehabilitation programs.

4. CONCLUSION

Based on the implementation of the community service activities and evaluations with the community targets, it could be concluded that the results of the activities had had impacts on the communities. These impacts were: 1) during the pandemic situation, community were sufficient on food security; 2) there were participations from the alumni of Faculty of Forestry to the community surrounding forest; 3) Wanagama Healing Forest's roles as a quarantine house and partnership house for the community improved the knowledge of Covid 19, public health, income, and healing place; 4) revitalization of Mangium House as a Partnership House with many activities facilitated more income the communities surrounding the house.

ACKNOWLEDGMENT

The authors would like to thank the Regional Government of Gunung Kidul Regency, The Task Force UGM, the Faculty of Forestry UGM, the Farmer Group, Volunteers, and friends of Wanagama throughout Indonesia for all of their participations and assistance in the COVID-19 emergency response activities, so that these went successfully.

CONFLICT OF INTEREST

We certify that there is no conflict of interest with any financial, personal, or other relationships with other people or organization related to the material discussed in the manuscript. We declare that all listed names are entitled to become an author and all have agreed the final form of submitted manuscripts.

REFERENCES

- Agustina, Z. A., & Suharmiati, S. (2017). Pemanfaatan minyak kayu putih (*Melaleuca leucadendra Linn*) sebagai alternatif pencegahan kasus infeksi saluran pernafasan akut di Pulau Buru. *Jurnal*

- Kefarmasian Indonesia, 7(2). <https://doi.org/10.22435/jki.v7i2.5654.120-126>
- Budiadi, Kanazawa, Y., Ishii, H. T., Sabarnurdin, M. S., & Suryanto, P. (2005). Productivity of kayu putih (*Melaleuca leucadendron LINN*) tree plantation. *Agroforestry Systems*, 64(2), 143-155.
- Doremalen, N. Van, Bushmaker, T., Morris, D. H., Holbrook, M. G., Gamble, A., Williamson, B. N., Munster, V. J. (2020). Aerosol and surface stability of HCoV-19 (SARS-CoV-2) compared to SARS-CoV-1. *The New England Journal of Medicine*, 19 (March), 0–3. <https://doi.org/10.1101/2020.03.09.20033217>
- Hadiwardoyo, W. (2020). National economic losses due to the COVID-19 pandemic. *Baskara: Journal of Business and Entrepreneurship*, 2(2), 83–92. <https://doi.org/10.24853/baskara.2.2.83-92>
- Kozová, M., Dobšínská, Z., Pauditsšová, E., Tomčíková, I., & Rakytová, I. (2018). Network and participatory governance in urban forestry: An assessment of examples from selected Slovakian cities. *Forest Policy and Economics*, 89, 31–41. <https://doi.org/10.1016/j.forpol.2016.09.016>.
- Leão, T.C.C., Lobo, D., & Scotson, L. (2017). Economic and biological conditions influence the sustainability of harvest of wild animals and plants in developing countries. *Ecological Economics*, 140, 14–21.
- Lind-Riehl, J., Jeltama, S., Morrison, M., Shirkey, G., Mayer, A. L., Rouleau, M., & Winkler, R. (2015). Family legacies and community networks shape private forest management in the western upper Peninsula of Michigan (USA). *Land Use Policy*, 45. <https://doi.org/10.1016/j.landusepol.2015.01.005>.
- MS, Z. K., & Rizaldi, A. (2020). Responding to state policy reasoning in dealing with the COVID-19 pandemic in Indonesia. *Indonesian Journal of Economics and Public Policy*, 7(1), 36–53.
- (WHO), W. H. O. (2020a). Q&A on Coronaviruses (COVID-19). Retrieved from <https://www.who.int/news-room/q-a-detail/q-a-coronaviruses>
- (WHO), W. H. O. (2020b, May 10). Contact tracing in the context of COVID-19: Interim guidance. Retrieved from <https://apps.who.int/iris/handle/10665/332049>