
PARTNERSHIPS IN MITIGATING CLIMATE CHANGE IMPACTS: A CASE STUDY OF THE MERA PROGRAM

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ABSTRACT

This research aims to analyze partnerships in mitigating the impacts of climate change through the MERA Program in Muara Angke Wildlife Sanctuary, North Jakarta, which runs from 2018 to 2020. The method used is descriptive qualitative with data collection techniques through interviews, observations, and documentary studies. The results showed that the MERA Program successfully integrated multi-stakeholder partnerships in mangrove ecosystem restoration. The resulting positive impacts include economic benefits, treatment, natural disaster mitigation, and carbon reduction in the region. The program also significantly contributes to the achievement of various Sustainable Development Goals (SDGs), such as no poverty, no hunger, decent work, economic growth, sustainability, climate action, life under water, life on land, and partnership to achieve goals. The implication of this research is the importance of strengthening partnerships in efforts to mitigate the impacts of climate change through a holistic ecosystem restoration program that involves various stakeholders. The implication of this research is the importance of strengthening partnerships in efforts to mitigate the impacts of climate change through a holistic ecosystem restoration program that involves various stakeholders.

Keywords: Mangrove, MERA Program, Multi-Stakeholder, Collaboration, Partnership.

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INTRODUCTION

The current global warming trend is particularly noteworthy as it is clearly the result of human activity since the mid-20th century and has continued at an unprecedented rate for thousands of years. In the context of Indonesia, an annual report on climate action by G20 countries has been launched, namely the Climate Transparency Report Indonesia Country Profile 2021. In particular, this report highlights Indonesia's climate action, which includes adaptation, mitigation and mobilization of finance to address climate change. In the report, it is revealed that as a member of the G-20, Indonesia is highlighted because it is ranked in the top 10 largest emitting countries in the world. (IESR, 2021).

The report's content on Indonesia's climate action underscores that Indonesia's climate action is categorized as "very insufficient" in reducing greenhouse gas emissions (IESR, 2021). Fossil energy use reached 82% in 2020, making the energy sector the largest contributor to greenhouse gas (GHG) emissions in Indonesia (45.7% in addition to emissions from forests and land use).

Indonesia, as a maritime country with the longest coastline in the world, has comparative advantages for the ecological development of high-value marine plants, namely mangrove conservation. The uses of mangrove plants generally fall into two categories: the use of the

mangrove ecosystem as a whole or its conversion to other uses, and the use of products from the mangrove ecosystem (He et al., 2018).

For climate change mitigation, mangroves play an important role in maintaining and building soils, as reservoirs in tertiary waste assimilation, and in the global cycling of carbon dioxide, nitrogen and sulfur (He et al., 2018). However, another benefit of mangroves, especially in marginal areas, is that they consume carbon dioxide while producing three to five times more oxygen than tropical forests and provide habitat protection for marine animals such as fish, sea crocodiles, crabs and snakes, as well as terrestrial animals such as birds and long-tailed macaques (He et al., 2018).

This study is a modification of a meta-analysis study from (Poret, 2019) and (Bano, 2019). This study focuses on the further application of the results of these studies, namely the variables of corporate policy and motivation to support sustainability (Poret, 2019) and concern (Bano, 2019) of each stakeholder in the MERA Program. MERA is a multi-year alliance program in which multi-stakeholder collaborations consisting of government, companies, academics, NGOs and communities who are also shareholders collaborate for at least 5 (five) years to restore mangrove ecosystems throughout Indonesia.

Based on the background above, the purpose of this research is to find out and analyze partnerships in mitigating the impacts of climate change on the MERA Program that has been running from 2018 to 2020 in the pilot area, Muara Angke Wildlife Sanctuary, North Jakarta. This research is expected to provide a deeper understanding of the importance of partnerships in mitigating climate change impacts, especially through the MERA Program in Muara Angke Wildlife Sanctuary, North Jakarta. The results of the analysis obtained from this research are expected to provide a basis for sustainable policies and practices in an effort to maintain mangrove ecosystems and effectively reduce the impacts of climate change.

METHOD

The method of determining key 'informants' in qualitative research is one of the vital aspects that need special attention. Mistakes in determining this will have an impact on the quality of information obtained. It is important to focus on the suitability and representation of the problem being explored with the key informant profile (Bungin, 2003).

In order to obtain qualitative information, it can be done in three ways, namely, interviews (interviews), observation (observation), and documentary study (documentary study). Meanwhile, according to the theory, the 'source' of data in qualitative research is 'words and 'actions, and the rest is 'additional data such as' documents and others (Bungin, 2003). To obtain this data, a 'documentation' study will be carried out, namely by studying and examining various literature in order to collect as many theories and research recommendations as possible that are related to the object of research under study.

Field data collection was conducted through in-depth interviews with resource persons. Field studies were also conducted to complement and strengthen the analysis by conducting observations aimed at collecting 'primary' data using interview guidelines.

RESULTS AND DISCUSSION

The results of the study describe the details of the MERA Program; namely, the MERA Program prioritizes not only the quantity of mangroves planted but also how the mangroves can be managed. The goal of the MERA Program is to reduce the vulnerability of coastal communities, natural

resources and vital assets by promoting effective management and implementation of mitigation and adaptation strategies to address climate change by 2023. The strategies in question are:

Building the scientific case for mangrove protection and restoration

The strategy will focus on providing robust planning for mangrove protection and restoration, including robust baseline information on mangrove condition, ecological mapping, stakeholder mapping, socio-economic assessment, policy review, and hydro-oceanographic projections/modeling (inundation, current patterns, tides, sedimentation, and others). Such an approach will increase the effectiveness of mangrove protection and restoration.

Involvement of national/regional government, private sector and other stakeholders

The strategy will focus on getting national and local government, the private sector, local communities, and other stakeholders to actively support and participate in mangrove protection and restoration. The strategy will include developing collaborative management, strengthening policies, and developing sustainable financing schemes and mechanisms through the MERA Program.

Demonstrate effective mangrove protection, restoration and integrated management.

The strategy focuses on the implementation and demonstration of effective protection, restoration and management of mangrove areas that can be achieved by combining robust science to determine and implement the best approaches to improve ecosystem health, protection, promotion of restoration and natural regeneration, integrated collaborative management, sustainable financing and mechanisms that include incentive schemes for local communities and local governments to conserve mangrove ecosystems (e.g., through the development of alternative livelihoods based on mangrove products, ecotourism, etc.).

Awareness raising, outreach and capacity building

The strategy will focus on promoting community awareness and participation in mangrove management. This consists of public campaigns and strengthening the public perception of the important functions and services of mangrove ecosystems for community livelihoods and mitigating climate change impacts. In addition, to ensure the sustainability of mangrove management, the program also includes a capacity-building component for key stakeholders to implement collaborative management of mangrove areas.

The issues that companies commonly capture are derived from community grievances, such as the inability to access health facilities, the low quality of education and the low level of community empowerment in earning a living. The implementation of CSR in Indonesia is still at the stage of profit sharing, which is used to answer felt needs rather than the real needs of the community (Ambadar, 2013). This is because many companies do not understand the importance of knowing and facilitating the real needs of the community through proper CSR implementation.

By carrying out each process of stakeholder engagement, namely conducting stakeholder mapping (Modified from AA1000 SE Manual 2), as follows:

1) Based on the issue

This presents an urgent issue that needs to be addressed together, namely that the condition of mangrove forests is degraded. It disturbs the balance of coastal ecosystems, causing abrasion, flooding, and even tsunamis, and encourages doing something as an effort to restore natural ecosystems for generations of children and grandchildren. It is a legacy.

2) With influence

This includes those with informal influence and those with formal decision-making power. With strong influence from someone and the nuance of an invitation to join with full confidence and a

high sense of trust in the program, transparency, honesty, openness, and high commitment, this fundraising process becomes lighter and more feasible to run.

3) Based on proximity

Making various approaches from events that are often carried out once a month with meetings with Chief Executive Officers (CEOs) and other high levels put together in Dinner or Breakfast Sharing Knowledge and other events such as the Thought Leaders Forum (TLF) make the fundraising process lighter and easier in finding partners who are in line.

4) Based on dependency

The parties that join the MERA Program Alliance, of course, both want to realize real, visible and mutually beneficial results. In this case, with the partnership pattern that has been formed in the MERA Program, it is very helpful for the surrounding community to get additional income by utilizing the existence of mangrove forests to support their lives, such as getting fish, crabs, shrimp, having knowledge and expertise in making and producing mangrove batik, mangrove jam, mangrove fruit sweets, mangrove coffee and other mangrove derivative products. By seeing the successes of each year of the program, the MERA alliance has created that each partner has a dependency on other partners to make the program sustainable.

5) With representatives

The MERA Alliance Program involves many representatives from the Government, Companies, NGOs and communities, such as religious leaders who are trusted and believed by certain communities, with the hope that through these representatives, stakeholders are very confident that the program will work well in the end.

The company's ability is closely related to the size of the company. The larger the company, the greater the efforts and resources that are morally obliged to be prepared. This is directly proportional to the results of research stating that company size has a positive effect on social and environmental performance. This reinforces that the larger the company, the more it has a higher "ethical obligation" (Daly, 2017).

Large companies will find it easier to prepare and budget their resources when compared to companies with smaller sizes. This is because the profitability ratio of large companies with high environmental performance tends to be better than the opposite (Nilsson et al., 2016)..

In these times, fostering a culture of collaboration with non-material-based motivations is difficult. In addition to the way benefits have been measured based on things that can be calculated and real, it is also caused by an instant culture that reduces the essence of the meaning of hard work. The benefit is not only about the benefits obtained but also includes the benefits of something intangible.

The benefits for MERA collaboration participants are:

1. Support the government in climate change programs and the restoration of mangrove forests that can hold considerable carbon stocks.

The government has committed to tackling climate change. In 2015, Indonesia joined several other countries that submitted their post-2020 climate pledges, known as nationally determined contributions (INDCs), to the United Nations Framework Convention on Climate Change (UNFCCC).

Indonesia is one of the world's largest greenhouse gas (GHG) emitters. Over the past two decades, greenhouse gas emissions have increased from almost all sectors, such as land use

(defined as land use, land use change, and forestry, including peat fires), energy, agriculture, industry and waste.

2. Demonstrable social and environmental outcomes that are easily communicated to customers, shareholders and other audiences.

The MERA Program Implementer communicates the program's progress by implementing a process to create, collect, distribute, store, restore, and post project information based on the communication management plan. The main function of this process is to improve efficiency and effectiveness in communicating between stakeholders.

3. Supporting sustainable social and environmental community projects that advance conservation and social-economic development fulfills corporate responsibility commitments.

In particular, social sustainability is more likely when communities are actively involved in program design and development and consequently become more environmentally conscious. Community leaders develop support, and engage programs for families and children to learn more about conservation and preservation. Decision-makers in the community, such as among government officials, recognize the importance of promoting and publicizing the potential economic benefits as a potential economic benefit and outcome of developing community work on the MERA Program.

4. Become a good corporate role model for replication and innovation of sustainable conservation programs.

It aims to show and communicate the benefits and beneficial impacts of the MERA Program on improving the environmental, social and economic quality of the community. The benefit for companies that carry the MERA Program is a positive image because, ethically, the company has made a significant positive contribution to environmental and social sustainability. For this reason, it is important to intervene so that the ethical values contained can be well communicated and fully conveyed to stakeholders. By conveying the value message in full, it is hoped to generate interest from other parties to recognize, study, explore and replicate this program elsewhere.

Replication is imitation, but in order to replicate, one needs to consider the underlying issues in great detail. For a program to be replicated, the experience must be considered in great detail, including the assumptions of failure. Thus, those who will replicate will have a greater chance of success.

According to the results of informant interviews, 100% of informants answered that sharing risks, greater resources, institutional strengthening and more efficiency are the benefits that will be achieved when running a program in partnership.

Referring to the Risk Transfer Theory, a company that knows that there is a potential risk that will occur with a certain amount of value. If the risk occurs against it, the loss suffered will be of that value to be borne by itself. To reduce or eliminate the risk burden, the insured party seeks to transfer the risk burden of the hazard to other willing parties by joining and cooperating in running this program (Bano, 2019).

In addition, the application of risk management theory and organizational learning emphasizes the importance of multi-stakeholder dialogue and NGO-business partnerships as ways for companies to gain mutual benefits. Each party will be able to minimize its risk as the program benefits from the expansion of impact.

The joining of other entities in the program implementation consortium will certainly bring more resources—not just the modalities but also the number and ability of human resources implementing the program. Therefore, the planning, implementation, and evaluation processes can run more optimally, and the program management institution will be stronger, especially if the program is cross-sectoral and cross-disciplinary. The more varied background experiences and fields of knowledge, the better.

Along with the gathering of good resources, the work will be more efficient because of the optimal contribution of each element of the company that joins through company collaboration. Efficiency occurs in line with the improvement of program quality and the breadth of the impact caused.

According to the interview results from the informants, satisfaction in expressing motivation for sustainability increased after the agreement to enter into a partnership. This is because each partner always gets updated information about progress and knowledge about the advantages of the MERA Program. Even if there are obstacles so far, they can be resolved well by fellow partners because the MERA Program team is able to coordinate and manage communication between partners very well. It can be concluded that partnerships affect sustainability concerns.

In the opinion of all informants, communication and compromise are vital and most important in efforts to equalize the vision and mission of collaboration. Given that this communication is the starting point of collaboration. Communication and compromise are the main activities needed to determine and bridge differences and exchange information about ways of working, work culture, organizational norms and values. Effective communication is the door to successful collaboration between collaborating parties.

Interorganizational communication is a reciprocal or two-way integration process with the intention of coordinating, being responsible, providing motivation and being humane. Communicating it acts as a creation of equality of understanding, ideas, thoughts and attitudes of our behavior toward others. Communicators and communicants have a commonality and agreement of messages so as to cause an understanding (Heath & Isbell, 2017).

Communication or publication as an awareness program used are stakeholder gathering, YKAN official web, MERA partnership event, MERA Media Expose, recruitment of MERA Ambassador as an icon or MERA Ambassador, and World Mangrove Day Event.

Through the MERA Program, ecosystem problems will slowly be resolved and restored because the ecology that is the basis of the environment has been improved. If the mangrove habitat has been saved, it will invite many other marine life to come and generate prosperity for the community. This approach is the holistic concept implemented by MERA, starting from the environmental habitat side, the economic side, and the social welfare side of the community to the governance of the area.

Furthermore, the program is also carried out in a manner consistent with sustainable development and community welfare, taking into account the interests of stakeholders, complying with applicable legalities and consistent with international norms, integrated throughout the organization's activities (ISO 26000, 2010).

In line with the principles of social responsibility, based on ISO 26000 (2010) (Religia & Mardiana, 2023), namely:

- a. Respect for stakeholder interests: The organization must respect, consider and respond to the interests of its stakeholders.

- b. With respect to the rule of law, organizations must comply with legal requirements, including implementing social responsibility. Companies need to maintain relationships with and support from the government as a stakeholder in their social performance.

The MERA program seeks to restore the destruction of mangrove forests and their impact on ecosystems and the environment as a whole in a collaborative, multi-stakeholder manner. In relation to the core issues of social responsibility listed in the ISO 26000 document, the MERA Program is related to environmental aspects and community development and involvement.

a) Environment;

The MERA program repairs and restores coastal ecosystems from the negative environmental impacts of mangrove destruction. The MERA program takes an integrated approach by considering the economic, social and environmental implications, both direct and indirect, for society and the environment.

b) Community engagement and development

The MERA program also pays attention to the community's needs by engaging and empowering it. It is hoped that this program can also contribute through social investment in terms of increasing community capacity, which will lead to income generation through local economic development and skills development.

Mangrove forests support sustainable development pillar number 1, No Poverty. Fishermen support the majority of people who live in the Muara Angke area, Pantai Indah Kapuk, by working as fishermen. Fishermen look for fish and various resources to support the family economy. The preservation of the marine environment will make it easier for fishermen to make a living for their families and improve family welfare (Mustaqim, 2015).

Mangrove forests support sustainable development pillar number 2, Zero Hunger. Improving the quality of the marine environment will impact marine biota, which has nutritional content, especially its relatively high protein content. Fish, shellfish, shrimp, crabs, and other marine animals have high nutritional content and can be used as side dishes to fulfill family nutrition so that every day, families have decent and nutritious food.

Mangrove forests support sustainable development pillar number 8, Decent Work and Economic Growth. With the mangrove ecosystem maintained, the marine life has a high nutritional content and quality, thus improving livelihoods for the surrounding community. Thus creating a growing and improving economy for coastal communities living around mangrove forests. With the improvement of life in coastal communities, their quality of life improves, and they avoid all negative and criminal activities. In addition to being home to marine life, the dense mangrove trees can also be an attractive natural tourism object. Tourism is one of the efforts to improve the regional economy and increase employment openness (Safri, 2020). Labor absorption in the tourism sector is quite a lot. Although it requires an increase in community skills, it will actually improve skills. It will directly improve qualifications, which will have a positive impact on their acceptance in the world of work.

Mangrove forests support sustainable development pillar number 11, Sustainable Cities and Communities. Mangrove forests can be attractive natural tourism objects. Tourism is one of the efforts to improve the regional economy and increase employment opportunities. Sustainable tourism will also directly shape the community's attitude to always maintain the beauty of the environment. Sustainable mangrove tourism will also provide a stimulant for the community to open

other business units such as souvenir businesses, restaurants, and so on (Purwowibowo & Santoso, 2018).

Mangrove forests support Sustainable Development Pillar 13, Climate Action. They can reduce 10-31% of annual emissions from the land use sector (Suratman, 2008). Mature mangrove plants can absorb 840 metric tons of CO₂. This means that one mangrove tree can absorb 308 kg (0.3 tons) of carbon dioxide from the atmosphere during its growth period, which is 12.3 kg per year. Mangrove forests support sustainable development pillar number 14, namely Life Below Water, by rehabilitating and restoring mangrove forest ecosystems in Muara Angke, Pantai Indah Kapuk. The resulting impact is that mangrove forests are useful as basic shapers of coastal ecosystems (Mulyadi & Fitriani, 2010). Mangrove forests support sustainable development number 15, namely Life On Land. Mangrove forest plants are able to withstand various disasters that come from seawater to land, such as flooding, coastal abrasion, and strong wind resistance, and even reduce the impact of tsunamis (Tumpu et al., 2023).

Mangrove forests support the development of sustainable partnerships (Indicator number 17, Partnership for the Goals) and support a better quality of life. The impact is to create partnerships between companies that share the same vision and mission of sustainability. By partnering, the resulting impact will be greater and wider. Community engagement and empowerment, and this program can also contribute through social investment in terms of community capacity building that will lead to income generation through local economic development and skills development.

CONCLUSION

The conclusions in this study show that the MERA Program is not simply a mangrove reforestation program, but rather a coastal mangrove forest ecosystem rehabilitation initiative through a strong partnership between the government, private sector, and NGOs. This partnership has significant impacts on various aspects of life, including biological, economic, traditional herbal medicines, disaster risk reduction, and carbon footprint reduction in the Jakarta area. The MERA Program's contribution to the Sustainable Development Goals (SDGs) shows alignment with targets such as No Poverty, No Hunger, Decent Work and Economic Growth, among others. The implications of this research place a strong emphasis on the importance of partnerships in sustainable programs. The benefits are not only limited to budget and implementation time efficiency, but also to positive image publicity, strong institutional management, risk sharing, and greater resource utilization. Partnerships such as those in the MERA Program open up opportunities for wider participation from elements of the community, as well as facilitating knowledge exchange for program replication elsewhere. As for suggestions for future research, it is important to continue to strengthen inter-agency communication, with attention to equality, mutual need, and mutual respect among partners. The role of NGOs as communicators needs to be strengthened by providing sufficient space for each partner to actively participate. Management of mangrove forest resources must be carried out in an appropriate and sustainable manner, taking into account social values and local wisdom. Further studies can also examine in more depth the long-term effects of the MERA Program on environmental sustainability and socio-economic progress in the region.

REFERENCES

- Ambadar, J. (2013). *CSR dalam Praktik di Indonesia*. Elex Media Komputindo.
- Bano, M. (2019). Partnerships and the good-governance agenda: Improving service delivery through state–NGO collaborations. *VOLUNTAS: International Journal of Voluntary and Nonprofit Organizations*, 30(6), 1270–1283.
- Bungin, B. (2003). Analisis data kualitatif. Penerbit PT Raja Grafindo Persada, Jakarta.
- Daly, H. E. (2017). Toward some operational principles of sustainable development 1. In *The economics of sustainability* (pp. 97–102). Routledge.
- He, Z., Peng, Y., Guan, D., Hu, Z., Chen, Y., & Lee, S. Y. (2018). Appearance can be deceptive: shrubby native mangrove species contributes more to soil carbon sequestration than fast-growing exotic species. *Plant and Soil*, 432, 425–436.
- Heath, R. G., & Isbell, M. G. (2017). *Interorganizational collaboration: Complexity, ethics, and communication*. Waveland Press.
- IESR, G. J. (2021). *Climate Transparency Report 2021: Real Climate Change Impacts, Indonesia Needs to Increase its Climate Action*. Iesr.or.id. <https://iesr.or.id/en/climate-transparency-report-2021-real-climate-change-impacts-indonesia-needs-to-increase-its-climate-action>
- Mulyadi, E., & Fitriani, N. (2010). Konservasi hutan mangrove sebagai ekowisata. *Jurnal Ilmiah Teknik Lingkungan*, 2(1), 11–18.
- Mustaqim, I. (2015). *Dampak reklamasi pantai utara jakarta terhadap perubahan sosial ekonomi masyarakat: tinjauan sosiologis masyarakat di sekitaran pelabuhan Muara Angke, Kelurahan Pluit, Jakarta Utara*.
- Nilsson, M., Griggs, D., & Visbeck, M. (2016). Policy: map the interactions between Sustainable Development Goals. *Nature*, 534(7607), 320–322.
- Poret, S. (2019). Corporate–NGO partnerships through sustainability labeling schemes: motives and risks. *Sustainability*, 11(9), 2689.
- Purwowibowo, B. S., & Santoso, B. (2018). Pariwisata Berbasis Hutan Mangrove. *PENGEMBANGAN PARIWISATA YANG BERKELANJUTAN: INOVASI, TEKNOLOGI DAN KEARIFAN LOKAL*, 205.
- Religia, Y., & Mardiana, T. (2023). Penerapan Program CSR Berbasis ISO 26000 dan CSV: Meningkatkan Tanggung Jawab Sosial Perusahaan dalam Industri. *Lentera Pengabdian*, 1(04), 381–390.
- Safri, M. (2020). *Dampak pengembangan pariwisata alam terhadap masyarakat sekitar*.
- Suratman, M. N. (2008). Carbon sequestration potential of mangroves in Southeast Asia. In *Managing forest ecosystems: The challenge of climate change* (pp. 297–315). Springer.
- Tumpu, M., Jamal, M., SYAHRIR, M., Pasanda, O. S. R., Lopian, F. E. P., Rustam, M. S. P. A., Adhimastra, I. K., Mustika, W., & Muliawan, I. W. (2023). *Infrastruktur berbasis mitigasi bencana*. TOHAR MEDIA.



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