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Research Article

COLLABORATIVE GOVERNANCE IN THE DEVELOPMENT OF MANGROVE REHABILITATION IN CIGORONDONG VILLAGE SUMUR DISTRICT PANDEGLANG REGENCY

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ABSTRACT

Indonesia has the largest mangrove environment in the world. The government itself has launched a national mangrove rehabilitation initiative of 600.000 hectares, in accordance with the 2020-2024 RPJMN through low carbon development. Banten Province is one of the provinces in Indonesia that has experienced environmental degradation, so that the existing mangrove ecosystem area is not comparable to the potential mangrove habitat that should be. The government, communities, and businesses have adopted various initiatives and programs in the form of rehabilitation projects that aim to rebuild damaged mangrove forests and establish mangrove centers. Therefore, this study aims to determine collaborative governance in the development of mangrove rehabilitation in Cigorondong Village, Sumur District, Pandeglang Regency. By using indicators in Ansell and Gash's collaborative governance model (2007), where the actors involved are government, private, academics and non-governmental organizations. This research uses descriptive method with qualitative approach. The results showed that the collaboration that occurred was quite successful in being well implemented with the rehabilitated mangrove area.

Keywords*: Collaborative governance, Mangrove rehabilitation, Quadra helix*

Introduction

Based on Climatch Watch data from the Global GHG Emissions source, Indonesia is the eighth largest greenhouse gas emitter globally in 2023. The global greenhouse gas emissions source shows that Indonesia contributes 2.9% of global emissions. This shows that Indonesia contributes significantly to greenhouse gas emissions worldwide. Rehabilitation and utilisation of wetlands, such as seagrass meadows, mangroves and peat forests, which are scattered throughout the forests and coasts of the archipelago, is one way to reduce carbon emissions.

Ironically, high rates of destruction are also occurring in areas with significant carbon storage potential, or "blue carbon", such as mangroves and seagrass meadows. Due to the rapid destruction of peatlands and mangroves, the United Nations has declared a climate change

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emergency in tropical regions such as Indonesia, Southeast Asia, Brazil and Central Africa due to the rapid deforestation of mangroves or peat.

One-third of the carbon stored in coastal ecosystems worldwide is found in Indonesia's mangroves, which contain 3.14 billion tonnes of carbon. Therefore, the government is determined to continue to restore mangrove areas. A total of 17,000 hectares (ha) out of 637,000 hectares (ha) of crucial land was restored last year according to the Ministry of Environment and Forestry.

This is to maintain and support Indonesia's global contribution. The world's mangrove forest area is 16,530,000 hectares, and Indonesia has 3,490,000 hectares or 21%, according to data obtained from the Ministry of Marine Affairs and Fisheries.

This shows that Indonesia has the largest mangrove environment in the world. And one of the provinces that has mangrove forests in Indonesia is Banten Province. Unfortunately, it cannot be denied that the potential of mangroves in Banten Province has also decreased. Based on data from the Banten Provincial Environment and Forestry Service, the mapping of mangrove potential in Banten each year shows a significant decrease in area.

But in the last 3 years, the area of mangrove forests in Banten province has increased by around 1,605.66 ha. But the increase is not proportional to the existing mangrove habitat potential, where the current mangrove forest area is only 1/3 of the potential amount of mangrove forest habitat that can be owned by Banten Province.

The following is shown data on mangrove area in Banten Province in table 1, and in table 2 shows the potential of mangrove habitat in Banten Province.

Table 1. Mangrove Area in Banten Province in 2023

No	District/City	In the Forest Area (Ha)	Outside the Forest Area (Ha)	Amount
1	Pandeglang	2.901,36	185,28	3.086,64
2	Lebak	-	6,84	6,84
3	Kabupaten Serang	178,18	800,59	978,77
4	Kota Serang	22,61	96,86	119,47
5	Cilegon	-	67,30	67,30
6	Tangerang	346,93	309,67	656,60
	Total	**3.449,08**	**1.466,54**	**4.932.42**

Source: Banten Provincial Department of Environment and Forestry (DLHK, 2023)

Table 1. above shows that most or about 3/4 of the mangrove forest area is located in Pandeglang Regency with an area of 3,086.64 ha of the total area of mangrove forests in Banten Province, which is 4,932.42 ha. Furthermore, mangrove forests in Banten Province are located within the forest area of 3,449.08 ha and outside the area of 1,466.54 ha. This means that mangrove forests controlled by the state, namely those within the area, are greater than mangrove forests located in areas for other uses or mangroves outside the area. According to the Ministry of Marine Affairs and Fisheries, there are differences in government authority between mangroves inside and outside the area. The responsibility for rehabilitation of mangrove forest areas within the area belongs to the Mangrove and Peat Restoration Agency (BRGM) with the Ministry of Environment and Forestry (KLHK). While the responsibility of mangrove rehabilitation outside the area belongs to the Ministry of Marine Affairs and Fisheries (KKP) assisted by other institutions or ministries with Corporate Social Responsibility (CSR) and Non-Governmental Organisations (NGOs).

Based on the study of the Banten Provincial Planning and Development Agency, Banten

Province itself since 2019 formed a Regional Mangrove Working Group (KKMD) with the aim of organising sustainable mangrove ecosystem management which is an integral part of coastal area management integrated with watershed management. This function can run optimally if there is coordination, integration, synchronisation and synergy across sectors, agencies and related institutions within the Banten Provincial Government. But unfortunately the management of mangrove ecosystems in Banten Province has not run optimally with no significant changes in increasing the area of mangrove ecosystems in Banten Province.

Based on the study of Banten Province Bappeda as well, that the constraints of the programme related to mangrove ecosystem management by the Banten Provincial Marine and Fisheries Service is the lack of support to realise the rehabilitation and conservation of mangrove ecosystems. Therefore, DKP Banten Province needs to seek support, especially funding to optimise the planned programme. In rehabilitation activities DKP Banten Province also involves the community to carry out its activities. Constraints related to mangrove management policies based on the Banten Province Bappeda study, namely synergy between partners who handle it have not been well established so that the programme on mangroves cannot be carried out properly. Mangrove management is very clearly mentioned and there is a budget for 34 provinces in Indonesia. The lack of budget funds that exist causes less optimal implementation of activities that have been carried out. In addition, the establishment of a mangrove centre has not yet been realised because the rules that underpin it have not been approved. Whereas in the RPJMN mangrove management is quite a priority. This is certainly one of the obstacles to future management. Whereas seen from the potential of mangrove habitat in Banten Province itself is very broad, which will be shown in table 2 below:

Table 2. Potential Mangrove Habitat in Banten Province 2023

No	Kabupaten/Kota	TK	AT	MT	TT	Amount
1	Kabupaten Tang-gerang	3.543,20	45,65	35,49	97,67	3.722,01
2	Kabupaten Serang	7.083,26	22,67	72,35	141,43	7.153,78
3	Kabupaten Pandeglang	239,78	-	130,73	16,01	386,52
4	Kabupaten Lebak	-	-	-	-	-
5	Kota Serang	947,78	2,08	-	-	949,86
6	Kota Cilegon	-	-	-	-	-
		Total				**12.212,17**

Description:	
TK = Pond	MT = Mangrove Abrasion
AT = Abrasion Area	TT = Emerging land

Banten Provincial Department of Environment and Forestry (DLHK, 2023)

Table 2. above states that the potential area of mangrove habitat in Banten Province is 12,212.17 ha. And shown in table 1 previously the area of mangroves in Banten Province is only 4,932.42 ha. This means that the existing mangrove area is only 1/3 of the potential mangrove habitat. Furthermore, table 2 shows that Pandeglang Regency has the highest potential mangrove habitat in the area of mangroves in Banten Province, this means that a lot of mangrove land was previously but had to be abraded in Pandeglang Regency. Where it can be caused by sea water or tsunami. Given that Pandeglang Regency is included in one of the districts / cities with a tsunami disaster risk index value in the highrisk class with a score of

15.73 in 2021. In addition, the risk index for extreme waves and abrasion for Pandeglang Regency is in the high risk class with a score of 14.96 according to data released by the National Disaster Management Agency (Adi et al., 2022). Because of the high risk of disaster in Pandeglang Regency in the coastal area. So the way to protect itself is through mangrove planting or the existence of mangrove ecosystems in coastal areas, and the presence of mangroves can reduce the energy of tsunami waves by up to 50%.

Thus the following is the data of mangrove land area in Pandeglang Regency in the last year.

Table 3. Existing mangrove area based on density level per village in Pandeglang Regency (2023)

No	District	Village	Classification			Total Area (Ha)
			Dense	Medium	Rare	
1	Carita		2,56	-	-	2,56
		Sukanegara	2,56	-	-	2,56
		Sukarame	2,26	-	-	2,26
2	Cikeusik		3,39	-	-	3,39
		Cikiruhwetan	3,39	-	-	3,39
3	Cimanggu		42,59	-	-	42,59
		Rancapinang	42,59	-	-	42,59
4	Pagelaran		-	0,00	0,27	0,27
		Tegalpapak	-	0,00	0,27	0,27
5	Panimbang		26,09	-	-	26,09
		Mekarjaya	6,29	-	-	6,29
		Panimbangjaya	1,68	-	-	1,68
		Tanjungjaya	18,12	-	-	18,12
6	Sukaresmi		-	0,38	-	0,38
		Cibungur	-	0,38	-	0,38
7	Sumur		3.004,63	4,56	2,17	3.011,37
		Ujungjaya	3.004,63	4,56	2,17	3,011,37
Kabupaten Pandeglang			**3.079,26**	**4,94**	**2,44**	**3,086,64**

Banten Provincial Department of Environment and Forestry (DLHK, 2023)

Table 3. above shows the area of mangrove land in Pandeglang Regency based on the density level. That the total area of mangroves in Pandeglang Regency is 3,086.64 ha. With the classification of dense mangroves covering 3,079.26 ha. Mangroves with a moderate density level of 4.96 ha. Finally, mangroves with a sparse density level of 2.44 ha. From this data, the widest data in each classification is mostly owned by Sumur District. Where almost 90% of mangroves with a dense classification are located in Sumur District, which is 3,079.26 ha. Mangroves with a moderate classification of 4.56 ha of the total in Sumur District. And mangroves with a sparse density level of 2.17 ha are in Sumur District. This means that about 2.44 ha of mangroves with sparse classification should be immediately restored or restored. In Pandeglang Regency itself, there are several government organisations that have a role to make efforts to restore mangrove ecosystems in Pandeglang Regency. One of them is the Environmental Agency of Pandeglang Regency. Therefore, the Environmental Agency of Pandeglang Regency made efforts to restore the mangrove ecosystem through mangrove planting. Unfortunately, due to cost constraints, there are mangrove planting activities that are not implemented. The following are the proposed mangrove planting activities in Pandeglang Regency that were not implemented:

Table 4. Proposed Mangrove Planting Activities from 2020-2021 in Pandeglang Regency

Year	Location	Area (Ha)	Number of Seedlings (Stem)
2020	Ds. Sumberjaya Kec. Sumur	2	20.000
	Ds. Margasana Kec. Pagelaran	1	10.000
	Ds. Margagiri Kec. Pagelaran	1	10.000
	Kec. Panimbang	1	10.000
2021	Ds. Tunggaljaya Kec. Sumur	3	30.000
	Ds. Cigorondong Kec. Sumur	18,5	185.000

Source: Environmental Agency of Pandeglang Regency (DLH, 2023)

Table 4 shows the proposed mangrove planting activities in Pandeglang Regency from 2020-2021 that were not implemented by the Pandeglang Regency Environmental Agency. Even though if the activity is carried out, it can increase the ecosystem of mangrove areas in Pandeglang Regency by 26.5 ha with many mangrove seedlings planted as many as 265,000 trees. With the largest area of the planting plan located in Cigorondong Village, Sumur Subdistrict with a land area of 18.5 ha and a seedling plan of 185,000.

Based on the data above, there is a lot of vacant land for potential mangrove habitat in Sumur Sub-district, Cigorondong Village, which in its management requires the involvement of various parties. Including the involvement of the private sector to support a sustainable environment and forest. The involvement of the private sector is regulated in government regulation No. 47 of 2012 concerning social and environmental responsibility of limited liability companies. Because of this responsibility, it was later explained by the Ministry of Maritime Affairs and Fisheries that in the management or rehabilitation of mangrove forests in Indonesia outside the area there is the responsibility of the private sector through CSR (Corporate Social Responibility) together with KKP and NGOs (Non-Governmental Organisations).

In line with that, in Cigorondong Village itself there is cooperation between the government, the private sector, and academics, which means collaborative governance. In this perspective, collaborative governance can change the way the state interacts with citizens and non-governmental organisations. As is the case through the involvement of the private sector, the community, academics and the government in the mangrove rehabilitation programme in this collaboration.

In the public realm, collaborative governance refers to methods or approaches that bring together stakeholders from different industries to create and implement a programme or policy. The growing interest in collaborative governance mechanisms stems from the potential benefits to be gained by involving multiple actors in addressing issues related to government legitimacy and capacity. Various privatisation and regulatory strategies are available through collaborative governance, and these strategies have been used to overcome difficulties faced by governments.

The implementation of mangrove rehabilitation that occurs is to support sustainable ecosystem development through mangrove maintenance, this is in accordance with the Regulation of the Minister of Environment and Forestry of the Republic of Indonesia Number 23 of 2021 concerning the implementation of forest and land rehabilitation. Banten Province does not yet have a specific plan for mangrove management.

Local regulations governing mangrove management and utilisation can be found in the Regional Spatial Plan (RTRW) at both the provincial and district/city levels. Banten Province has a clear commitment to the preservation and utilisation of mangrove ecosystems. In the

Banten Provincial Spatial Plan in Article 10 on Policies and Strategies for the Development of Spatial Patterns of Protected Areas, it is mandated that one of the strategies for the realisation of integrated use and control of space is to secure, maintain, and develop mangrove forests as a safeguard against abrasion and coastal erosion.

Based on the news page at the Ministry of Maritime Affairs and Fisheries of the Republic of Indonesia, the Ministry of Maritime Affairs and Fisheries has a Cooperation from 2022-2025 with the Indonesian Biodiversity Foundation (KEHATI), Cooperation on the Protection, Preservation and Sustainable Use of Coastal and Marine Biodiversity is intended to strengthen the marine space management programme. Where the KEHATI Foundation will support the management and rehabilitation of mangrove areas through planting and maintaining critical land mangroves spread across 4 locations namely Brebes, Majene, Palu, and Pandeglang.

In addition, the KEHATI Foundation also supports its use to strengthen ecotourism and mangrove learning centres. Therefore, the collaboration that occurred in Pandeglang Regency involved the academics of the Sultan Ageng Tirtayasa University, the mangrove management activities were also used as a learning facility (mangrove learning centre) for students of the Fisheries Science Study Program, Faculty of Agriculture.

This is in accordance with the issuance of the Decree of the Rector of Sultan Ageng Tirtayasa University Number 911/UN43/KPT.DL.17/2023 concerning the Committee for Mangrove Maintenance Activities, Strengthening Stakeholders and Initiating the Sunda Strait Mangrove Learning Tirtayasa Nomor 911/UN43/KPT.DL.17/2023 Centre for the Fisheries Science Study Program of the Faculty of Agriculture of Sultan Ageng Tirtayasa in 2023.

Therefore, based on the problems in the background above and with the cooperation between actors namely government, private sector, and academics. Namely the Banten Provincial Maritime and Fisheries Service, Sultan Ageng Tirtayasa University, PT Asahimas and the KEHATI Foundation. Researchers are interested in examining how collaboration between actors in the development of mangrove rehabilitation in Cigorondong Village, Sumur District, Pandeglang Regency. based on Anshel and Gash's collaborative governance concept (2008) with indicators of initial conditions, institutional design, facilitative leadership, and collaboration processes.

Methods

The method in this research uses descriptive research with a qualitative approach. According to (Sugiyono, 2006) Qualitative research is research that uses data in a larger scale format, such as using data in the form of words, sentences, images, or schemes that are not counted, not a ratio scale. While data collection techniques through the process of observation, interviews and documentation. Then the data that has been collected is analysed using data analysis techniques, namely data reduction, data presentation and conclusion drawing. Sugiyono, (2006:273-283).

The next process after the data is collected is then tested for data validity. Data validity in qualitative data writing techniques requires testing techniques that can make data sources known how data is obtained through the process until the data is presented. Where this process involves credibility testing.

According to Sugiyono, (2006:301) Qualitative data credibility test is a process to assess the extent to which qualitative data collected in research can be considered credible or reliable. Test credibility using triangulation and member check. Meanwhile, the focus of this research departs from the background of the problem, then formulated in the formulation of the problem and reviewed based on the theory in the literature review.

The focus of the research concerned from the formulation of the problem is Collaborative Governance in the Development of Mangrove Rehabilitation in Cigorondong Village, Sumur DistrictPandeglang. Then that will be focused on 4 indicators according to (Ansell and Gash, 2007) namely: Starting condition, Institutional design, facilitative leadership, and collaborative process.

Result and Discussion

Collaboration is joint work with several related parties in an activity to achieve goals. According to (Hanberger, 2004), the collaborative governance model emerges as a response to increasingly complex public problems, so that various actors (multi-actors) are needed to solve these problems. This means that collaborative governance can be understood as an effort to streamline public management through cross-actor involvement in the context of governance. In general, the forms of governance consist of state domination models, government models, and multi-actor models. The multi-actor model is believed to be the root of the collaborative governance approach (Astuti & Rachim, 2020).

In its development, there is a collaboration model from a simple one consisting of two parties, then developing into three, four, and up to five parties. And in every collaboration, stakeholder involvement is needed according to the role of each party. Stakeholders are all parties in society either personally, community groups or communities that have a relationship and interest in issues or problems in the organisation or environment. So in this research there is a collaboration of actors between 4 parties, or also called the Quadra Helix collaboration model, consisting of government, business, academia and civil society / nongovernment organisations. Namely between the Banten Province Marine and Fisheries Service, PT Asahimas Chemical, Sultan Ageng Tirtayasa University and the Indonesian Biodiversity Foundation (KEHATI). And with the theory of collaborative governance (Ansell and Gash, 2007) which consists of indicators of initial conditions, institutional design, facilitative leadership and collaboration processes, it will be examined how cooperation between these actors follows:

1. Starting Condition

Conditions that can help or hinder cooperation between stakeholders and between institutions/organisations and stakeholders are known as initial conditions. These conditions existed before the co-operation process took place. These initial conditions consist of three major variables related to the initial conditions of the stakeholders prior to this cooperation in the development of mangrove rehabilitation in Cigorondong Village. Those variables are:

- An imbalance between stakeholders' resources or power.

According to Ansell and Gash in (Amelia & Priambodo, 2024) explained that the imbalance of resources and knowledge in the collaboration process can make interdependent relationships between stakeholders in the process of achieving a goal. The success of the collaboration process itself can be seen from the cooperative participation of the various actors involved.

From the results of the above research, a discussion can be obtained about the initial conditions related to the unbalanced resources or strength of stakeholders is that the actors who collaborate in the mangrove rehabilitation development programme in Cigorondong Village, Sumur District, Pandeglang Regency. Where between the actors need each other to achieve a common goal, namely the rehabilitation of mangrove ecosystems in Cigorondong Village and the Sunda Strait. Because basically the purpose of collaboration is to fill each other's shortcomings owned by each actor involved in the collaboration process. Or in other words, complement each other's shortcomings according to their respective roles. - Benefits/incentives and constraints to collaboration

In the collaboration process to mangrove rehabilitation development programme in Cigorondong Village, one of the supporting factors for involvement between actors according to Ansell and Gash is the advantage of participating. It is the nature of most of the participating actors to always take into account the benefits gained by joining the collaboration process.

The benefits obtained actually depend on how the actors involved in the collaboration participate. By participating together and with a commitment to achieving goals can create a togetherness and dependence between one another. With the nature of dependence between one another, it will cover the shortcomings of each actor so that it can facilitate the collaboration process.

This research obtained the results that the agency benefited, namely feeling greatly helped because it received assistance or contributions from parties outside the government such as

PT Asahimas Chemical as the private or business world, Sultan Ageng Tirtayasa University as academics and the KEHATI Foundation as civil society. That way one of the main tasks and functions related to rehabilitation from DKP can be carried out.

Furthermore, if from the Sultan Ageng Tirtayasa University, especially the Fisheries Science Study Program, which means that UNTIRTA can involve students to be able to carry out Merdeka Learning Campus Merdeka (MBKM) activities in these activities. There are 4 students (MBKM) and it is a means of learning for each team involved, applying their knowledge in the field and also networking with various partners in banten.

As for PT Asahimas Chemical or it can also be called the private sector, it is one of the stakeholders that can act as an accelerator. The private sector can contribute as a form of responsibility to the environment, through the allocation of corporate social responsibility (CSR) funds. That way the obligations of PT Asahimas Chemical in accordance with Law Number 40 of 2007 concerning Limited Liability Companies (PT) as a form of corporate social responsibility to the environment can be implemented through this mangrove rehabilitation programme.

And finally for the KEHATI Foundation as a non-profit institution that carries out the mandate to collect, manage and distribute grant funds for the conservation and sustainable use of biodiversity in Indonesia for the welfare of the Indonesian people. With this collaboration, the KEHATI Foundation can carry out its duties and functions as an NGO. As well as implementing its programme on marine ecosystems that focus on climate change through the development of a mangrove forest ecosystem rehabilitation programme in Cigorondong.

2. Institutional Design

Institutional design refers to how the basic rules in collaboration, this is very important because it becomes a procedural legitimacy in the collaboration process. What is emphasised in this institutional design is how the rules of the game in participating in collaboration, how the forum is formed, the form of clear implementation rules and how there is transparency in the process of implementing collaboration.

- Ground Rules

Collaboration between parties in the development of mangrove rehabilitation that occurs is not within the legal umbrella of the Provincial Government. But the legal basis of cooperation is based on cooperation between agencies. Like UNTIRTA with Yayassan KEHATI, then the KEHATI Foundation with PT Asahimas Chemical. Then UNTIRTA also has cooperation with DKP Province and Pandeglang Fisheries Service. Where the basic rules are in the MoU between the rector and the governor, then the derivatives are the Cooperation Agreement (PKS), up to the IA (Implementation Agreement).

As for mangrove rehabilitation itself is included in the National Priority Programme or PPN contained in the National Medium-Term Development Plan through low carbon development (PRK), with the blue carbon mangrove programme (blue carbon) is a concept of biodiversity protection and rehabilitation.

- Participation

Actors involved in the collaborative process of developing mangrove rehabilitation in Cigorondong Village, Sumur District consist of the government, then the private sector, academics and civil society. In this case, this participation is built due to the awareness of each actor of the equality of roles, the actors in the collaboration are directly involved in decision making which can be seen from the scheduled meetings. This participation is an important value in Collaborative Governance because there is already an element of active involvement from actors outside the government.

- Exclusive Forum

What is meant by a limited forum according to Ansell and Gash is the emphasis on the existence of an officially organised forum by conducting regular meetings, which are attended by government, private and community parties. In Collaborative Governance between the Banten Province Marine Service (DKP), UNTIRTA, PT Asahimas, and the KEHATI Foundation, there is no special communication forum based on a letter or basic rules. But the communication process is still carried out through the

whatsapp group to carry out the process of sharing activity information.

- Transparency

Transparency in running and building a collaboration is very important because it is based on respect between collaboration actors and can provide information to the wider community. So that there is no impression that nothing is covered up. Transparency can be in the form of transparency about programmes that will be run or programmes that have been run.

Transparency carried out by actors in the collaboration that occurs in the development of mangrove rehabilitation in Cigorondong Village is by publishing activities through news and scientific papers from students who conduct research at mangrove rehabilitation sites and can be accessed by everyone. In addition, the websites of the organisations involved faithfully display the collaboration program and the development itself

3. Facilitative Leadership

According to the statement expressed by Ansel and Gash in (Islamy, 2018) explains that in carrying out the collaboration process that leadership greatly influences the success of the collaboration process. Which is the main element to achieve the goals to be achieved. Based on the results found by researchers that in the collaboration that occurred between the Banten Provincial Marine Service, PT Asahimas Chemical, UNTIRTA and the KEHATI Foundation, no one was used as a leader or mediator of collaboration because everyone played their respective roles.

Furthermore, for the preservation of cultural assets or who will preserve or continue the mangrove rehabilitation programme in Cigorondong Village if the cooperation ends according to the specified time. Then what will preserve is the local community through a community group called Tangguh Sedulur. Which is in accordance with Anshel and Gash's collaborative governance theory, if collaboration is to be successful, it must involve the community as a preserver of its cultural assets.

4. Collaboration Process

The Collaborative Governance process according to Ansell and Gash is explained as the stages of agreement development that explain how the phases of the collaboration programme are carried out starting from the pre-negotiation phase, the negotiation phase to the programme implementation phase. So that the success of collaboration can be assessed from or can be said to be successful by looking at how the collaboration cycle rotates starting from communication, building trust, commitment, sharing understanding, and finally arriving at the results to be achieved (Islamy, 2018).

Collaborative process is a process in which there is a dialogue involving stakeholders. The collaborative process in the development of mangrove rehabilitation in Cigorondong Village, Sumur Sub-district, Pandeglang Regency is carried out through face-to-face dialogue between the parties. Such as through focus group discussion (FGD) activities, through monitoring and evaluation during every 3 months, submitting reports every 3 months, and others. Where sometimes face-to-face dialogue is carried out by the parties to find joint solutions related to problems in mangrove rehabilitation carried out.

Where in the process also stakeholders equalise views or mutual understanding to reach an agreement on what can be achieved for existing problems. In addition, each actor is also committed to the success of the mangrove rehabilitation programme which can be seen from the sense of dependence between the parties, where the mangrove rehabilitation programme in Cigogrondong Village will be sustainable if cooperation between these parties is still needed.

The interim results obtained in the process of developing mangrove rehabilitation in Cigorondong Village after the initial planting in 2023, which means that one year of the process has resulted in the following results: mangrove rehabilitation has been carried out in an area of 1 hectare with a total of 3000 mangrove trees

Figure 1. Mangrove Seedlings that Have Been Planted in Cigorondong. Source: Activity Commite (2024)

Figure 2. Area of Planting Area. Source : Researcher, 2024

Conclusion

Mangrove rehabilitation is a National Priority Programme or PPN contained in the National Medium-Term Development Plan through low carbon development (LDC), with a blue carbon mangrove programme, which is a concept of biodiversity protection and rehabilitation. And the government needs the involvement of stakeholders outside the government. Therefore, the government, academics, communities, and businesses have adopted various initiatives and programmes in the form of rehabilitation projects that aim to rebuild damaged mangrove forests and establish mangrove centres. Especially in Pandeglang Regency as one of the areas with a high disaster risk index and a high probability of potential tsunamis, and rehabilitation of mangrove ecosystems is one of the solutions that can be done for various long-term benefits for the environment and as an effort to protect communities in coastal areas, especially in Cigorondong Village.

Based on the results of the above research, collaborative governance in the development of mangrove rehabilitation in Cigorondong Village, Sumur Subdistrict, Pandeglang Regency involves several stakeholders, namely the Banten Provincial Maritime and Fisheries Service as the government, PT Asahimas Chemical as the private sector, Sultan Ageng Tirtayasa University as academics and the Indonesian Biodiversity Foundation (KEHATI) as civil society. The collaboration process that occurs through the theory of Anshel and Gash (2007) which consists of starting conditions, institutional design, facilitative leadership, and collaborative process. Results:

Starting Condition, there is no imbalance of resources, because each party has its own

main tasks and functions or in other words they act according to their roles. Untirta acts as a partner of academic practitioners who have relevant knowledge and experience for project/policy development in implementing mangrove rehabilitation. KEHATI Foundation in the implementation of mangrove rehabilitation programme in the Sunda Strait.

PT Asahimas Chemical acts as a donor institution because it is part of social responsibility or social responsibility to carry out environmental management. And DKP Banten Province itself as a government agency that can make policies, has responsibilities in the coastal areas of Banten province that can encourage rehabilitation efforts to become a massive activity.

Institutional Design, in the practice of implementing collaboration, has clear basic rules in the collaboration process. The rules are listed in the MoU, Cooperation Agreement, and Implementation Agreement (IA). For central government regulations regarding mangrove rehabilitation, one of them is the Regulation of the Minister of Environment and Forestry of the Republic of Indonesia Number 23 of 2021 concerning the implementation of forest and land rehabilitation. And local regulations governing mangrove management and utilisation can be found in the Regional Spatial Plan (RTRW) both at the provincial and Pandeglang District levels.

Facilitative Leadership, that there is no collaborative mediator in the cooperation that occurs because all have equality or equality. And later those who will be used as preservers of cultural assets are local community groups in Cigorondong Village.

Collaborative Process, in the indicators of face to face dialogue, trust building, commitment to the process, sharing understanding, and intermediate outcomes that have been implemented have been running well, by involving various parties from the government, private sector, academics, NGOs and the community.

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