

## Coastal Community Perception of Environmental Conservation (Case Study of Fishermen's Village in Nipah Hamlet, Malaka Village, North Lombok, NTB)

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ARTICLE INFO	ABSTRACT
Published Online: 13 August 2020	The purpose of this study was to determine: 1) the perception of coastal communities about the main damage that occurred in the coastal and marine environment, 2) the cause of damage to the coastal and marine environment, as well as the party most responsible, and 3). efforts to protect the coastal and marine environment. The subjects of the study were coastal communities in Nipah Hamlet, Malaka Village, North Lombok. The number of respondents 40 people, as a representation of 10% of the total 400 heads of households, with the criteria for ages 20-60 years and male sex. Data collection techniques through documentation, observation, and interviews. Observation data were analyzed with Miles & Hubbermans Analysis. The results showed that: 1) there were two main damages, namely over-fishing 77.50% and water pollution 17.50%; both occur because of the exploitative behavior of fishing communities in the past that did not heed the conservation aspects; 2) there are three main causes of damage, namely rural communities (62.50%), Bupatis / Pemda (35.50%), and tourists (2.50%); and there are two parties most responsible for dealing with environmental damage, namely the village community (52.50), and the local government (47.50%); 3). Efforts to protect the coastal and marine environment in settlement environments include; worked together to clean up the settlement and beach environment on a weekly and monthly basis, beach planning and cleaning, tree planting, fish processing training. While activities at the fishing community level include; participate in fisherman group programs, help planting and maintaining coral reefs, preserve ornamental fish, monitor and prohibit the use of fishing gear that is not environmentally friendly (bombs, potassium and others).
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### I. INTRODUCTION

The direction of government policies in the past, including those that prioritized the development of urban communities and rural agricultural development, did not involve the participation of local communities, and unclear regulations, causing coastal communities to be less noticed, even impressed. This condition according to Imron (2003), Thorpe & Smith (2008), and Kusnadi (2009) causes coastal communities, especially fishing settlements to become pockets of poverty. Not only economically poor, but also socio-cultural, socio-political and various other aspects.

As is known, that during the previous decades, the direction of development was indeed prioritized for agricultural development in rural areas and urban community development, whereas coastal communities only received a relatively small portion (Nurmalasari, 2013). The impact is that coastal settlements tend to be left behind compared to

other regions, even though their access is very limited (in addition to the limited resources that can be utilized in the coastal areas, also because of the unstable condition of the marine environment in certain seasons). This marginal condition, according to Retnowati (2011) and Hakim (2016), makes fishermen vulnerable to conflict (internal and external), and is often used as an object of exploitation by other parties who want to exploit their powerlessness.

The management of coastal and marine resources that have been centralized for decades by the previous government, without involving the participation of local communities, caused the community to become apathetic. The impact is that their sense of belonging and understanding of the importance of environmental preservation is almost non-existent. Yet they are the parties who feel the most impact of each policy made by the central government / regional

government. Therefore, in the management of coastal and marine areas, local communities should be involved.

Community-based management of coastal and marine areas uses two approaches, namely: structural in nature, which emphasizes structuring socio-political systems and structures; and non-structural, which prioritizes community empowerment mentally in order to improve the ability of community members to participate in the management and problems of the sea coast (Nurmalasari, 2013). Although the aim is to improve the quality of life of fishermen and preserve the environment, the involvement of local communities in the management of coastal and marine resources is also not without obstacles. The success of this program is highly dependent on the quality of the resources owned by an area. Hiariey & Romeon's research (2013) shows that local community participation in coastal and marine management is greatly influenced by the level of education, perception, and income.

The limited resources owned by coastal communities have an impact on many aspects (Imron, 2003), one of which is the low awareness of the preservation of the coastal environment. This is characterized by a variety of behavior that is not environmentally friendly, including the habit of littering, the habit of burning trash, cutting down mangrove trees without any effort to replant, extracting beach sand and mining of Group C excavated material on a large scale which causes very high abrasion rates .

Real efforts are needed to increase public awareness of the preservation of the coastal environment, while simultaneously suppressing various behaviors that are not environmentally friendly. One of them is through community-based coastal areas management. The conservation strategy used is involving local communities. Erwiantono (2006) states that conservation strategies that involve local communities are seen as more effective than those that only involve the government. By increasing public awareness of the importance of the preservation function in an area, it will be able to maintain the balance function of the ecosystem and the economic function of the area for the local community, so that with the balance of the environmental ecosystem it is expected to achieve optimization and sustainability of the management of the region.

Nipah Hamlet is a coastal area inhabited by fishermen, which is located south of Kombal Bay, Pemenang District. The landscape of the Nipah Hamlet region, from the hills to the gentle slopes, to the gentle sloping coastal areas. With varying landscape conditions, it is possible for people in this area to have a variety of livelihoods aside from being a fisherman, for example farming, gardening, and raising livestock.

The population in Nipah Hamlet is increasing, while the area of coastal areas which tends to shrink, has the potential to lead

## II. MATERIALS AND METHODS

The subjects in this study were coastal communities in Nipah Hamlet, Malacca Village, Pemenang District, North Lombok. With consideration of the productive age, the subject is limited to residents aged between 20-60 years. Likewise with sex, with the consideration that work as a fisherman in the sea is dominated by men, then the selection of sex is also limited to men. The object of this research is people's perception of environmental preservation. The environment in question is the environment of the coast and the ocean in the area of Nipah Hamlet.

The sample in this study was determined by purposive sampling. The number of samples taken is 10% of the total households in Nipah Hamlet, aged 20-60 years and having male sex; so we get 40 people. Data collection techniques used in this study are: 1). Documentation, used to collect data related to the surrounding environmental conditions in Nipah Hamlet, 2). Observation, which is in the form of a questionnaire, is used to collect data related to the level of awareness of coastal communities in preserving the environment. The questionnaire used in this study was derived from the modification of the questionnaire used by In et al., (2011), and 3). Interviews are used to collect data related to efforts that have been made to increase awareness of coastal communities towards environmental sustainability in Nipah Hamlet, North Lombok. The data analysis technique used in this study is Miles and Hubberman analysis.

## III. RESULT AND DISCUSSION

### 1. Community Perceptions of Major Damages in Coastal and Ocean Environments

Respondents selected 4 out of 11 problems that have the potential to become major problems related to coastal and marine environmental conditions in Nipah Hamlet, namely: overfishing 77.50%, water pollution 17.50%, followed by fish bombing, and fishing with fish traps, with each of them 2.50% (Table 3.1).

**Table 3.1.** The main problems that occur in the coastal and marine environment in Nipah Hamlet

	Ocean and coastal problems	Choice of respondents	
		Total	Percentage(%)
<b>The main problems that occur in the sea and coast around the village (most dangerous, and most often the case)</b>	1. Overfishing	31	77,50
	2. Fish bombing	1	2,50
	3. Fishing with potassium	-	-
	4. Catching fish with traps	1	2,50
	5. Mangrove felling	-	-
	6. Intake of coral reefs	-	-
	7. Water pollution	7	17,50
	8. Deforestation of the surrounding area	-	-
	9. Erosion of land around the village	-	-
	10. Too much population in the village	-	-
	11. There are no major environmental problems	-	-

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There are two main problems that occur in Nipah Hamlet, related to the management of the coastal and marine environment, namely overfishing 77.50%, water pollution 17.50%. Both of these cases occurred because of the exploitative behavior of the fishing communities which did not heed the conservation aspects. The reason for the possibility of ignorance was triggered by low human resources, dense population, limited employment, and pressure on meeting short-term oriented economic needs.

Overfishing is felt to be the main problem because they can compare the amount of catch in the past with the present. The fishermen really feel that the amount of their catch continues to decline, even though the demand for the fulfillment of their needs of life continues to increase. This case according to Zulfikar (2011) emerged as a direct result of fishing activities that are not environmentally friendly. Fishing activities that tend to be exploratory and do not pay attention to the rules of conservation because they often use explosives (bomb), cyanide poison (anesthesia), trawling (still being debated), bubu piercing and muroami. However, of all that, which is considered the most significant in damaging coral reefs is the use of bombs and poisons.

Based on the level of education, 57.50% of respondents were elementary school educated. This shows that the human resources owned by Nipah Hamlet are still relatively low. The low level of education has an effect on the pace of development in Nipah Hamlet, including in terms of coastal and ocean resource management.

The condition of the low level of education, allegedly as one of the triggers of environmental destruction in the past in the Hamlet of Nipah. As shown in Table 3.1, the majority of respondents (62.50%) stated that villagers were the main cause of environmental damage. Past natural resource exploitation practices that ignored environmental sustainability (for example the use of fish bombs, the use of potassium), are only now clearly felt to have a negative impact. Bene & Friend (2009), and Kusnadi (2009) suggest that education in coastal communities is generally low, and often categorized as people who are usually struggling with poverty and underdevelopment.

In terms of livelihood, 95% of respondents in Nipah Hamlet work as traditional fishermen. As is known, that traditional fishermen with very limited fishing gear, is a common characteristic of the condition of fishermen households in Indonesia (Kusnadi, 2003). The same thing was stated by Pramono (2005) that coastal village communities in general are more traditional communities with very low socioeconomic strata. The same condition was experienced by residents of Nipah Hamlet. This is evident from the data in the Malacca Village Profile in 2015, which showed that 52.94% of the 1574 inhabitants of Nipah Hamlet were poor residents. The condition of fishermen like this has a very unstable household economy. The reason, not only because of their very limited range, and uncertain marine environment conditions, but also because they

generally have relatively many family members. Related to this poverty condition, Primyastanto (2011) states that the lack of awareness of fishermen because they are busy making a living to meet the needs of families, causes anything will be done to get a lot of catch and family needs can be met. To the extent that fishermen do not realize that in fishing using fishing gear that can cause damage to marine resources.

Water pollution is the second major problem. This condition arises, partly because of the low awareness of the community regarding household waste management, and the limited facilities and services for disposal of human waste. According to Santosa (2013) sewage wastewater (sewage) is one of the direct impacts caused by dense settlements in coastal areas. Indications of such pollution include river water or well water in the vicinity of the polluted location, which was originally clear in color, turned into muddy turbid and foul smelling, so it is no longer suitable for use by local residents for bathing, washing, especially for drinking water raw materials. Towards the health of the surrounding community, various diseases can arise, from mild ones like itching on the skin to severe ones in the form of genetic defects.

### 2. Causes of Damage and Responsible for Overcoming It

The party appointed as the main cause of damage according to respondents, only 3, namely the village community, the Regent, and tourists. Meanwhile, those who best met the conditions to overcome it, and those who were most responsible for overcoming it, were the village community and the Bupati (Table 3.2).

**Table 3.2.** Respondents' perceptions about the cause of the damage and those who must be responsible in handling it

Parties related to environmental problems	Form of involvement of certain parties in environmental problems according to the respondents' choice (%)		
	Parties as the main cause of the problem	The party most qualified to overcome them	The party most responsible for overcoming it
Village community	62,50	45,00	52,50
Visitors/tourists	2,50	-	-
Regent	35,50	55,00	47,50
Village Head	-	-	-
Central Government	-	-	-
Private entrepreneurs	-	-	-
Fishermen	-	-	-
Ministry of Maritime Affairs and Fisheries	-	-	-
NGO (NGO)	-	-	-
Law enforcement (Police/ TNI / Jagawana)	-	-	-

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Respondents' choice of the community as the main cause, and those who fulfill the requirements, as well as those who share responsibility, is a form of collective awareness that the environmental exploitation activities that they carry out have a negative impact. Bene & Friend (2009) states that in general, coastal communities are characterized by, among others: densely populated environments with sub-standard quality of life, low education, access to educational facilities, health, and limited markets; and opportunities to get side jobs, besides being a fisherman are also limited.

Based on these conditions, it is natural that until now most of the coastal communities dominated by fishermen, are still constantly in poverty. Because poverty too, is one of the reasons for the difficulty in developing the quality of human resources in coastal areas.

Various phenomena of environmental damage according to the Balitbangpedalda of Gorontalo Province (2004) can also be associated with these poverty conditions, due to their compulsion to exploit resources that are ecologically very vulnerable (such as coral reefs which are nursery and spawning areas of fish) in ways that are not environmentally friendly and solely the eye is driven by the tendency to meet short-term orientation economic needs. All of this is due to the lack of alternative livelihoods for this community.

In general, the Gorontalo Province Balitbangpedalda (2004) states that there are three main factors that are interrelated, as a cause of damage to the coastal and marine environment, namely: a) low quality of human resources, b) limited allocation of funds for public facilities on the coast, c) the tendency to meet short-term orientation economic needs. If assessed from the causal factors, then the three indicators are met for the region in Nipah Hamlet. The low quality of human resources (dominated by elementary school graduates), with age above 40-60 (57.50%), the number of poor people (more than half), the lack of public facilities (far from education, health, and market facilities), and behavior economic activities namely fishermen (95%) who are short-term oriented, are the real things that are owned by this hamlet.

The Regent was chosen as the party who also caused damage to their environment, perhaps because they still did not feel much the direct impact of development, both physical and human resource development, which could prevent them from excessive exploitative behavior towards the environment. This is reasonable, because North Lombok as a newly formed district, certainly has limited funds and also human resources, so it has not been able to reach all regions equally. However, one thing that must continue to be encouraged, that managing the environment must be based on the strength they have, namely self-management through joint action, is far more effective, because it does not have to depend on and wait for the government alone. The existence of activities carried out independently

according to Coleman & Fleischman (2011) is one of the characteristics of the ability of local people in environmental management.

The choice of respondents to the Regent as the party most qualified to overcome them (55.00%), and as the party responsible (47.50%) (Table 3.2), because based on awareness of their limited abilities. The self-help programs that they have carried out so far have not been felt effective enough if they were not facilitated by the Bupati who was considered as a representation of the regional government. This indicates that their dependence on the government is still very strong in implementing environmental management, even though the capacity of the Regional Government is still relatively limited. For this reason, it is necessary to make a more comprehensive coastal and marine environmental management policy, by integrating all potentials owned (community, government, NGOs, private sector, and other stakeholders). The government is expected to be able to hold all parties to contribute in building the Nipah Hamlet. Pomeroy & Berkes (1997) states that the role of government is needed in the development of coastal and marine areas, including through the decentralization of rules and policies, as well as the strengthening of mediator agents to be able to ward off oligarchic competition and protect fishermen from the clutches of renters' financiers.

### 3. Safeguards for Coastal and Oceanic Environments

The respondents' choice of protection measures shows that they still have a high concern for the preservation of the coastal and marine environment. In general, they chose not to agree (87.50%) if neglecting environmental sustainability (coral reefs, mangroves, and other aspects). They also realize that many things can be done to protect the coastal and marine environment, both individually and collectively (Table 3.3).

**Table 3.3.** Respondents' perceptions of efforts to protect the coastal and marine environment in Nipah Hamlet

No.	Observed environmental aspects	Respondents' perception (%)		
		Agree	Disagree	Do not know
1.	The coral reefs in my village don't need special protection	10,00	87,50	2,50
2.	The mangrove forest in my village does not need special protection	12,50	87,50	-
3.	Most people in my village don't care about protecting nature	10,00	90,00	-
4.	People who pay attention to the protection of coastal and marine areas are more concerned about fish and coral reefs than humans	5,00	90,00	5,00
5.	I as an individual can do many things to protect the marine environment, including coastal resources around where I live	90,00	-	10,00
6.	By working together, the people in my village, many things to protect the marine environment, including coastal resources	90,00	2,50	7,50
7.	People who damage the environment must be punished	100,00	-	-
8.	People who take / protected animals must be punished	100,00	-	-
9.	Damage to nature in the surrounding environment now will make our lives more difficult	100,00	-	-



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Regarding protection measures, 87.50% of respondents agreed to protect the coastal and marine environment. They also agreed with the imposition of punishment / decisive action against people who damage the environment. This means that the majority of them are already aware that the environmental elements (abiotic, biotic, and social) in their surroundings need to be protected, because everything is needed to fulfill their daily needs.

There is something that should be appreciated, namely that they are aware of their mistakes in managing the environment in previous periods. This is proven, because 100% of respondents claimed to have erred in exploiting coastal and marine environmental resources in the past. They also realize that coral reef management will benefit their families and coastal communities in the future. Their awareness is shown by 100% of them agreeing to three items related to the existence of coral reefs, namely: 1) important to protect beaches and villages from the threat of storm surges, 2) important to ensure the sustainability of the livelihoods of young people in their villages, and 3) fishing on coral reefs needs to be regulated to provide opportunities for fish and corals to grow. Local community awareness is important in environmental conservation activities because according to Aisyah (2013) the awareness, besides being able to contribute in supporting the lives of the surrounding community, can also sustain national development in a sustainable manner.

Respondents realized the potential they had to protect the coastal and marine environment. There are 90% of them, claiming that they can do many things to protect the coastal and marine environment, both individually and in groups. From this data, it is clear that the fishing communities in Nipah Hamlet already have social capital to jointly manage the environment around them. Now, just how the government and other stakeholders can synergize social capital with government programs in developing Hamlet Nipah and surrounding areas.

There are various activities that have been carried out by respondents as efforts to protect the coastal and marine environment. Activities in the residential environment, including: working together to clean the settlement and beach environment on a weekly and monthly basis, structuring and cleaning the beach, planting trees, training fish processing, and others. Activities at the fishing community level include: joining fishermen group programs, helping planting and maintaining coral reefs, preserving ornamental fish, monitoring and banning the use of fishing gear that is not environmentally friendly (bombs, potassium, etc.).

### IV. CONCLUSION

Based on the analysis of the results and discussion, it was concluded that people's perceptions of the condition of the coastal and marine environment in Nipah Hamlet were as follows: 1) there were two main damages that occurred,

namely overfishing 77.50% and water pollution 17.50%; both occur because of the exploitative behavior of fishing communities in the past that did not heed the conservation aspects; 2) there are three main causes of damage, namely rural communities (62.50%), Bupatis / Pemda (35.50%), and tourists (2.50%); and there are two parties who have the most responsibility in dealing with environmental damage, namely the village community (52.50), and the Regent / local government (47.50%); 3) various activities have been carried out by respondents as an effort to protect the coastal and marine environment, both in the neighborhood and in the community as fishermen. All these activities are carried out as a form of collective awareness in protecting the environment in order to maintain the sustainability of the coastal and marine environment in a sustainable manner.

### V. RECOMMENDATION

The occurrence of environmental destruction is triggered by the lack of understanding of the meaning of conservation and the demands of meeting economic needs with a short-term orientation. For this reason, efforts are needed to improve the human and economic resources of the fishing community of Dusun Nipah to prevent them from exploitative coastal and ocean environment management activities.

Various efforts to protect the coastal and marine environment have been carried out by the fishing communities in Nipah Hamlet, both independently and following government programs. However, facilitation from all parties is needed to increase the effectiveness of their environmental management activities.

### VI. REFERENCES

1. Aisyah, S. (2013). Peningkatan peran pemerintah dan masyarakat sebagai upaya menjaga ekosistem dan konservasi lingkungan di Dieng Plateau. *Jurnal Organisasi dan Manajemen*, 9(2), 135-144.
2. Balitbangpedalda Provinsi Gorontalo, (2004). Kajian dan evaluasi wilayah pesisir dan laut. <http://directory.ung.ac.id/.../lingkungan/.../Laporan%20Pesisir>. Diakses 15 Desember 2013.
3. Bene, C. (2003). When fishery rhymes with poverty, a first step beyond the old paradigm on poverty in small-scale fisheries. *World Dev.* 31 (6), 949-975.
4. Béné, C. & Friend, R.M. (2009). Water, poverty and inland fisheries, lessons from Africa and Asia. *Water Int.*, 34 (1), 47-61.
5. Coleman, E.A. & Fleischman, F.D. (2011). Comparing forest decentralization and local institutional change in Bolivia, Kenya, Mexico, and Uganda. *World Development*, 40 (4), 836-849. doi:10.1016/j.worlddev.2011.09.08
6. Erwianto, (2006). Kajian Tingkat Partisipasi Masyarakat Dalam Pengelolaan Ekosistem

- Mangrove di Kawasan Teluk Pangpang-Banyuwangi. *EPP.*, 3(1), 44-50.
7. Hakim, M. (2016). Social structure and poverty in the fishing community at Pandang-Pandang, Jeneponto in South Sulawesi Province. *Mediterranean Journal of Social Sciences*, 7(1), 188-193. oi:10.5901/mjss.2016.v7n1s1p188
  8. Hiariey, L. S., & Romeon, N. R. (2013). Peran serta masyarakat pemanfaat pesisir dalam pengelolaan wilayah Pesisir Teluk Ambon Dalam. *Jurnal Matematika, Sains, dan Teknologi*, 14(1), 48-61.
  9. Imron, M. (2003). Kemiskinan dalam masyarakat nelayan. *Jurnal Masyarakat dan Budaya*, 5(1), 63-82.
  10. Kusnadi. (2003). *Polemik Kemiskinan Nelayan*. Yogyakarta: LkiS.
  11. Kusnadi, (2009). Keberadaan nelayan dan dinamika kehidupan pesisir. Jogjakarta: Lembaga Penelitian Universitas Jember dan Ar-Ruz Media.
  12. Lawson, E.T., Gordon, C. & Schluchte, W. (2012). The dynamics of poverty-environment linkages in the coastal zone of Ghana. *Ocean. Coast. Manag.* 67, 30-38.
  13. Nurmalasari, Y. (2013). Analisis Pengelolaan Wilayah Pesisir Berbasis Masyarakat. *Stmikim. Ac. Id*, 1-8.
  14. Pada, D.N., Fauzan, A.Y. & Sulistyaningrum, W., (2011). Persepsi Masyarakat di Kawasan Konservasi Laut Daerah Kabupaten Kaimana. *Conservation International (CI) Indonesia, Kaimana Program Papua Barat, INDONESIA*.
  15. Pomeroy, R. S., & Berkes, F. (1997). Two to tango: the role of government in fisheries co-management. *Marine policy*, 21(5), 465-480.
  16. Pramono, D. (2005). *Budaya Bahar*. Jakarta: Gramedia Pustaka Utama.
  17. Primyastanto, M. (2011). Feasibility study usaha perikanan: sebagai aplikasi dan teori studi kelayakan usaha perikanan. Malang: Universitas Brawijaya Press.
  18. Primyastanto, M., Marno, S., Efani, A. & Muhammad, S. (2013). Economic of household analysis and influential on poverty Payang fisherman at Madura Straits. *Eur. J. Dev. Ctry. Stud.*, 14, 2668-3687.
  19. Profil Desa Malaka 2015, Kecamatan Pemenang, Kabupaten Lombok Utara.
  20. Retnowati, E. (2011). Nelayan Indonesia dalam pusaran kemiskinan struktural. *Perspektif*, 16(3), 149-159.
  21. Santosa, R.W. (2013). Dampak pencemaran lingkungan laut oleh perusahaan pertambangan terhadap nelayan tradisional. *Lex Administratum*, 1(2), 65-78.
  22. Thorpe, A., Reid, C., & Smith, S. F. (2008). Mainstreaming fisheries in development and poverty reduction strategies in the Asia-Pacific region. *Journal of the Asia Pacific Economy*, 13(4), 518-541.
  23. Zulfikar, M. (2011). Destructive fishing ancam kelestarian ekosistem laut. <http://indomaritimeinstitute.org/2011/11/destructive-fishing-ancam-kelestarian-ekosistem-pesisir-dan-laut/>. Diakses 10 Desember 2013.