

EMPOWERMENT OF PAPADAK LOCAL WISDOM IN SUPPORTING COASTAL AND MARINE RESOURCES MANAGEMENT IN NUSAK TERMANU, ROTE NDAO DISTRICT

Eny Yurni Anita LOAINAK¹, Melkiesedek. N. B. C. NEOLAKA², Hendrik TODA³

^{1,2,3}Nusa Cendana University, Kupang, Indonesia

Corresponding author: Eny Yurni Anita Loainak

E-mail: enyyal0101@gmail.com

Volume: 4

Number: 1

Page: 224 - 239

Article History:

Received: 2022-12-14

Revised: 2023-01-10

Accepted: 2023-01-15

Abstract:

The adoption of Papadak local wisdom in Rote Ndao Regency's coastal and marine areas is motivated by the destruction of coastal and marine ecosystems and the increasing use of this area in destructive ways, such as the use of destructive fishing gear, bombs and poisons, logging of mangrove trees, mining of sea sand, and fishing protected species such as turtles and dolphins. Implementation involved the Village Government, traditional leaders, religious leaders, youth leaders, community leaders, fishermen, and professional representatives in Rote Ndao Regency. The research method used was descriptive research with a qualitative approach, while the data sources in this study were obtained from 39 informants. Data collected by interview, observation and document search were then analyzed using the spiral data analysis technique proposed by Creswell. The empowerment of papadak local wisdom in supporting coastal and marine resource management in Nusak Termanu, Rote Ndao Regency, was analyzed using Latama, Gunarto's opinion that community empowerment is considered comprehensive if it displays five characteristics, with the conclusion that papadak local wisdom empowerment in supporting coastal resource management and sea in Nusak Termanu, Rote Ndao Regency; (1) locally based; (2) oriented towards improving welfare; (3) based on partnership but has not fulfilled the aspect of (4) sustainability while the inhibiting factors for empowering papadak local wisdom in supporting the management of coastal and marine resources in Nusak Termanu, Rote Ndao Regency were found; (a) there is no program/activity design and (b) the lack of human resources, budget and supporting infrastructure.

Keywords: Local Wisdom, Coastal, Empowerment.

Cite this as: LOAINAK, E. Y. A., NEOLAKA, M. N. B. C., & TODA, H. (2023). "Empowerment of Papadak Local Wisdom in Supporting Coastal and Marine Resources Management in Nusak Termanu, Rote Ndao District". *International Journal of Environmental, Sustainability, and Social Sciences*, 4 (1), 224 - 239.



INTRODUCTION

In indigenous/primordial or traditional communities, to mobilize village communities in contrast to urban communities, communities can be driven by local customs. Local customs are customs that live and develop, followed and maintained by the local community or what is often referred to as local wisdom (local wisdom). Haba, 2007:11; Abdullah, 2008:7; Pudentia, 2003:1; Sibarani, 2013:21-22 or local genius (Wales, 1948) or local knowledge "local knowledge" (Fajarini, 2014, p. 123). society is considered an entity that determines human dignity (Geertz, 2007, p. 32). It shows that local wisdom, knowledge and moral intelligence form the basis of the development of a society's civilization.

As a component forming the Republic of Indonesia and a mirror of Indonesia's pluralism, Indigenous Peoples are spread throughout the archipelago. Around 70 million Indigenous Peoples are divided into 2,371 indigenous communities spread across 31 provinces in the country. The most

extensive Indigenous communities distribution is in Kalimantan, with a total of 772 Indigenous Communities and Sulawesi, with 664 Indigenous Communities. While in Sumatra, it reached 392 Indigenous Communities, Bali and Nusa Tenggara 253 Indigenous Communities, Maluku 176 Indigenous Communities, Papua 59 Indigenous Communities and Java 55 Indigenous Communities. These Indigenous Communities are members of the Alliance of Indigenous Peoples of the Archipelago (AMAN).

As of 2018, the area of traditional territories that have been mapped has reached 10.86 million hectares (ha). Meanwhile, traditional territories cover a high to very low probability. For a high probability of 42.049 million ha, while a very low probability close to 0 reaches 45.126 million ha (Katadata.co.id, 2020). Since the beginning, Indonesia has recognized the existence of Indigenous Peoples through the 1945 Constitution. Recognition and respect for Indigenous Peoples are stated in Article 18B paragraph (2) and Article 28I paragraph (3). Meanwhile, referring to the United Nations (UN) Declaration on the Rights of Indigenous Peoples (UNDRIP), the defining characteristics of Indigenous Peoples include self-identification; historical continuity (before being invaded by colonial or colonial powers); origin (history); spiritual connection with customary lands and territories; distinctive identity (language, culture, beliefs); and a distinctive socio-political and economic system.

At the National Indigenous Peoples Conference (KMAN, 1999), it was stated that there are four heritages or origins as differentiators between Indigenous Peoples and other community groups. These elements, among others; (1) the same cultural identity, including language, spirituality, values, as well as attitudes and behaviors that distinguish one social group from another; (2) value and knowledge systems, including traditional knowledge, which can be in the form of traditional medicine, traditional farming, traditional games, traditional schools, and traditional knowledge as well as other innovations; (3) traditional territories (living space), including land, forests, seas, and other natural resources (SDA) which are not merely seen as production (economic) goods, but also involve religious and socio-cultural systems; and (4) customary laws and traditional institutions, rules and management procedures for living together to regulate and manage oneself as a social, cultural, economic and political group and one of the areas that have an ancestral heritage that continues to be maintained is Rote Ndao Regency. Through "Papadak" Local Wisdom in Nusak Termanu.

The word papadak is used by people in the Central Rote area to the east (Pantai Baru, East Rote and Landu Leko), while the word hoholok is used by people in the Lobalain District area to the west (South Rote, Northwest Rote, West Rote and Rote Southwest). The papadak rule was born from the community, then partnered with the government in solving problems on the coast and sea. The settlement of coastal and marine problems is not always done through formal law but also considers the applicable customary law (Ketti, 2020). Local wisdom is one of the things that must be considered in environmental protection and management activities. It is stated in Law Number 32 of 2009 that environmental protection and management includes planning, utilization, control, maintenance, supervision, and law enforcement, where all activities related to environmental protection and management must pay attention to several things, including;

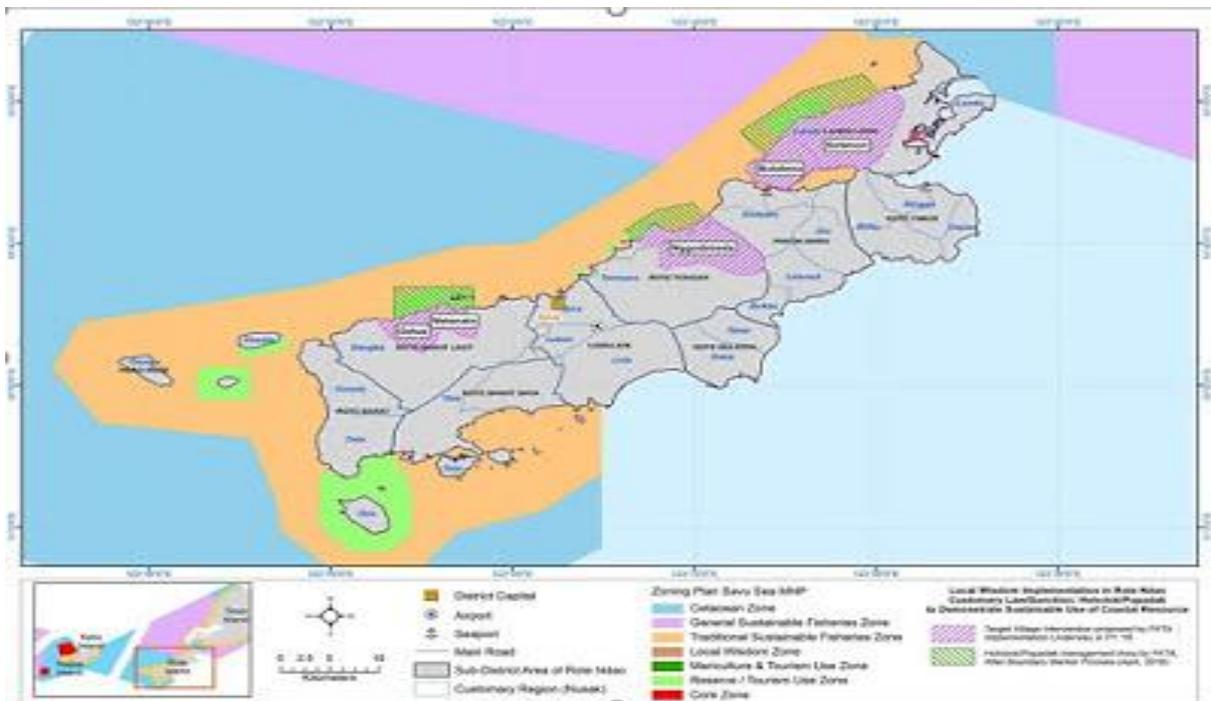
- 1) Diversity of characters and ecological functions;
- 2) Population distribution;
- 3) Distribution of potential natural resources;
- 4) Local wisdom;
- 5) Community aspirations;
- 6) Climate change.

In the context of local wisdom, the application of Papadak wisdom in coastal and marine areas in Rote Ndao Regency, which was carried out on land first and has an effect on resource sustainability, is deemed necessary to be adopted and applied in coastal and marine areas, primarily to support management and supervision TNP Sawu Sea. The Communication Forum initiated the application of Papadak in coastal and marine areas for Indigenous People Concerned Culture (FKTAPB) of Rote Ndao Regency facilitated by the Kupang National Marine Protected Areas Agency (BKKPN), which is the management agency for the national marine conservation area of the Sawu Sea TNP and The Nature Conservancy (TNC), an international non-governmental organization engaged in conservation.

The adoption of Papadak local wisdom to the coastal and marine areas of Rote Ndao Regency is motivated by the increasing destruction of coastal and marine ecosystems, as well as the increasing use of this area in destructive ways, such as the use of destructive fishing gear, the use of bombs and poisons, logging of mangrove trees, sand mining. Sea, fishing for protected species such as turtles and dolphins, and the increasing number of uncontrolled tourism activities. Efforts to implement this was carried out through various processes involving relevant stakeholders in Rote Ndao Regency, including the Village Government, traditional leaders, religious leaders, youth leaders, community leaders, fishermen and professional representatives. So that these Stakeholders can understand the aims and objectives of the program and support Papadak to be implemented in coastal and marine areas by appointing Manaholo (papadak supervisor), it is necessary to stipulate prohibitions and sanctions.

From several Nusak (traditional territories) in Rote Ndao Regency, 3 Nusak were selected, which were used as examples of the application of Papadak in coastal and marine areas. Next, Papadak in 3 nusak, namely;

- (1) Nusak Dengka, located in the coastal area of Netenain Village and Oelua Village, Northwest Rote District, there is Dengka Island in this area and is a utilization zone. Important ecosystems in this area are mangroves, coral reefs, seagrasses, and turtle nesting habitats. They are the next Setasea corridor
- (2) Nusak Landu, located in the coastal area of Sotimori Village and Bolatena Village, Landu Leko District. This area includes the traditional sustainable fishing zone and the utilization zone. The beach is a nesting habitat for green turtles (*Chelonia mydas*), and the waters are the Setasea corridor, especially dolphins. At the same time, the essential ecosystems are coral reefs and seagrasses
- (3) Nusak Termanu, located in the coastal areas of Nggodimeda Village and Siomeda Village, Central Rote District. This Nusak is included in the zone of traditional sustainable fisheries and utilization. This zone includes Batu Termanu, which the community believes to be a haunted/mystical area. There are coral reef and seagrass ecosystems, and the coast of this area is a nesting habitat for the Hawksbill Turtle (*Eretmochelys imbricate*) and the green turtle (*Chelonia mydas*).



Source: Traditional Leaders Concerned Culture Communication Forum (FKTAPB) Rote Ndao District, 2022

Figure 1. Map of the implementation of Papadak in coastal and marine areas in Rote Ndao Regency

Papadak's local wisdom is also equipped with prohibitions and sanctions that all relevant stakeholders have agreed upon in 3 Nusak. Furthermore, the FKTAPB of Rote Ndao Regency formed Manaholo (supervisors) in 3 Nusak, overseeing the designated Papadak area. Papadak's prohibition and sanctions were disseminated to all levels of society in Rote Ndao Regency by involving all parties, including the village government, church congregations and other forums. The prohibition against destructive activities in the coastal and marine areas of 3 Nusak includes cutting down mangroves, destructive fishing, damaging coral reefs, throwing garbage in the sea, and prohibition catching turtles and whales.

However, in the 3 Nusak, it is known that Nusak Termanu is an area with coastal marine ecosystems that are often damaged. Coastal and marine resources in Nusak Termanu are often over-exploited without considering their conservation and balance. Information to community leaders in Rote Ndao District, coastal communities in this area often carry out activities that harm the preservation of coastal and marine resources, such as logging mangroves and destructive fishing activities (bombs, potash, destructive fishing gear). Other toxic materials include tuba roots), poaching of protected fauna species (turtles, dolphins and dugongs), coastal land conflicts, tourism activities, and sand and stone extraction, even though arrangements are related to sanctions/fines from the implementation of Papadak. Arrangements related to prohibitions and sanctions/fines from applying Papadak local wisdom in Nusak Termanu will be described in the table below (FKTAPB Rote Ndao Regency, 2022).

Table 1. Prohibition Rules and Sanctions/Fines for the Papadak Nusak Termanu Area

No.	Types of Prohibition	Prohibition Fines
1.	It is forbidden to mine sand without a permit	Rp. 5.000.000,-
2.	It is forbidden to mine sand using heavy equipment	Rp. 100.000.000,-
3.	It is forbidden to cut down Mangrove (Boak) and Sentigi trees	Rp. 25.000.000,-
4.	It is forbidden to take turtle eggs	Rp. 5.000.000,-
5.	It is prohibited to take and or damage: Seagrass, Sea Cucumbers, Sea Corals, Coral Reefs and Bahar Roots.	Rp. 25.000.000,-
6.	It is forbidden to catch fish and lobsters using this. <ul style="list-style-type: none"> • Bombs/explosives • Tiger Trawl • Potassium/poison, Tuba or similar 	Rp. 50.000.000,- Rp. 100.000.000,- Rp. 25.000.000,-
7.	It is prohibited to catch and kill Crocodiles, Whales, Dolphins and Dugongs.	Rp. 100.000.000,-
8.	It is forbidden to throw garbage into the sea	Rp. 10.000.000,-
9.	It is forbidden to catch and kill turtles	Rp. 5.000.000,-

Source: FKTAPB Rote Ndao Regency, 2022

Local wisdom is a view of life and knowledge as well as various life strategies in the form of activities carried out by local people responding to various problems and meeting their needs. It is often conceptualized in foreign languages as local policy, wisdom, knowledge, or genius Fajarini (2014: 123). The local community carries out various policies to maintain their culture, one of which is Papadak in Nusak Termanu, as a form of local community participation in natural resource management.

Even though the community lacks in terms of program planning, they can understand how to manage natural resources through local wisdom that is environmentally friendly and also has strong cultural roots incorporated in a belief (religion). Community management systems are given opportunities and responsibilities in managing their natural resources. The community defines the needs, forms and goals of their aspirations, and they make decisions for welfare through community empowerment.

Local-based community empowerment is good if the planning and implementation are carried out at local locations and involve local resources, return to local resources, and local communities enjoy the results. Thus, comparative competitiveness will be implemented as a basis or initial step to achieve competitive competitiveness. Locally based community development and empowerment programs do not make residents just spectators and observers outside the system but involve them in the development itself.

Empowerment has become something new mainstream to improve welfare and poverty alleviation in the community. In this context, empowerment means that what is owned by the community is a development resource that needs to be developed to make its use more accurate for the community. Empowerment also occurs because people, organizations, and society gain control over their affairs (Strzelecka et al., 2017).

Mardikanto & Soebianto (2012: 77) state that empowerment is a deliberate effort to facilitate local communities in planning, deciding, and managing their local resources through collective action and networking. In the end, the community has the ability and independence economically, ecologically and socially. Even though prohibitions and fines have been given in maintaining Papadak local wisdom in Nusak Termanu, in practice, illegal activities carried out by the community still often damage the coastal marine ecosystem in Nusak Termanu so that the author is interested in conducting research by formulating the title "Empowering Papadak Local Wisdom in Supporting Management Coastal and Marine Resources in Nusak Termanu, Rote Ndao Regency".

To analyze this research, the authors use the theory of community empowerment, which is generally designed and implemented comprehensively. Borrowing the Asian Development Bank (ADB) definition, 59 development activities, including community empowerment activities, are considered comprehensive if they display five characteristics: (1) locally based; (2) oriented towards improving welfare; (3) partnership based; (4) holistically; and (5) sustainable (Latama, Gunarto et al., 2002:4).

METHODS

The research method used in this study is a descriptive research method with a qualitative approach. In contrast, the data sources in this study were obtained through primary and secondary sources, with a total of 39 informants. The data collected by interview, observation and document search methods are analyzed using the spiral data analysis technique proposed by Creswell (2016: 264-268).

RESULT AND DISCUSSION

Empowerment of Papadak Local Wisdom in Supporting the Management of Coastal and Marine Resources in Nusak Termanu, Rote Ndao Regency. Local-based community empowerment is good if the planning and implementation are carried out at local locations and involve local resources, return to local resources, and local communities enjoy the results. Thus, comparative competitiveness will be implemented as a basis or initial step to achieve competitive competitiveness. Locally-based community development and empowerment programs do not make residents just spectators and observers outside the system but involve them in the development itself, mainly through papadak local wisdom in Nusak Termanu, Rote Ndao Regency, which is located in the coastal area of Nggodimedea Village and Siomedea Village, Rote District. Middle. This Nusak is included in the zone of traditional sustainable fisheries and utilization. This zone includes Batu Termanu, which the community believes to be a haunted/mystical area. There are coral reef and seagrass ecosystems, and the coast of this area is a nesting habitat for the Hawksbill Turtle (*Eretmochelys imbricate*) and the green turtle (*Chelonia mydas*).

Even though prohibitions and fines have been given in maintaining Papadak's local wisdom in Nusak Termanu, in its implementation, illegal activities carried out by the community still often damage the coastal marine ecosystems in Nusak Termanu, so to analyze this research. The authors use the opinion of Latama, Gunarto et al. (2002: 4), which states that community empowerment is considered comprehensive if it displays five characteristics with the results of research and discussion.

Local Based. Locally based in this case is Papadak's local wisdom extracted from cultural products that concern the life and life of the community that owns it (Pudentia, 2003, p. 1; Sibarani, 2013, pp. 21-22) or local culture like Papadak which grows and develops in a known society, trusted, and recognized as essential elements that can strengthen social cohesion in the community (Haba, 2007, p. 11; Abdullah, 2008, p. 7) in line with the noble values that apply in the local community's life system to, among other things, protect and manage the environment in a sustainable manner (Wibowo, 2015, p. 17).

Based on the results of interviews and observations conducted by the author, it is known that Papadak is a local-based wisdom in Nusak Termanu, Rote Ndao Regency. Local wisdom models such as Papadak are also found in several other areas in Indonesia, such as Sasi in Maluku (Putri et al., 2021), Laot Customary Law and the Panglima Laot Institution in Aceh (M. Puspita, 2017) and Nyepi Segara on Nusa Penida Island, Bali (Adnyani, 2014) and like several other areas that have been mentioned, the papaya rule was not born from the community, then partnered with the

government in solving problems in the coast and sea. The settlement of coastal and marine problems is not always done through formal law but also considers the applicable customary law (Ketti, 2020).

The word papadak is used by people in the Central Rote area to the east (Pantai Baru, East Rote and Landu Leko), while the word hoholok is used by people in the Lobalain District area to the west (South Rote, Northwest Rote, West Rote and Rote Southwest). The papadak rule was born from the community, then partnered with the government to solve the coast and sea problems. The settlement of coastal and marine problems is not always done through formal law but also considers the applicable customary law (Ketti, 2020). Papadak local wisdom is a view of life and knowledge as well as various life strategies in the form of activities carried out by local people responding to various problems in meeting their needs. In foreign languages, it is often conceptualized as local policy, local wisdom or knowledge, or local genius Fajarini (2014: 123).

In the context of local wisdom, the application of Papadak wisdom in coastal and marine areas in Rote Ndao Regency, which was carried out on land first and has an effect on resource sustainability, is deemed necessary to be adopted and applied in coastal and marine areas, primarily to support management and supervision. TNP Sawu Sea. The Communication Forum initiated the application of Papadak in coastal and marine areas for Indigenous People Concerned Culture (FKTAPB) of Rote Ndao Regency facilitated by the Kupang National Marine Protected Areas Agency (BKKPN), which is the management agency for the national marine conservation area of the Sawu Sea TNP and The Nature Conservancy (TNC), an international non-governmental organization engaged in conservation.

The adoption of Papadak local wisdom to the coastal and marine areas of Rote Ndao Regency is motivated by the increasing destruction of coastal and marine ecosystems, as well as the increasing use of this area in destructive ways, such as the use of destructive fishing gear, the use of bombs and poisons, logging of mangrove trees, sand mining. Sea, fishing for protected species such as turtles and dolphins, and the increasing number of uncontrolled tourism activities. Efforts to implement this was carried out through various processes involving relevant stakeholders in Rote Ndao Regency, including the Village Government, traditional leaders, religious leaders, youth leaders, community leaders, fishermen and professional representatives. These stakeholders can understand the aims and objectives of the program and support Papadak to be implemented in coastal and marine areas by appointing Manaholo (Papadak supervisor) and need to stipulate prohibitions and sanctions with the primary objective being environmental protection which ultimately has an impact on empowering coastal communities by exploiting their potential. Fisheries in the coastal area of Nusak Termanu are for sale and generate economic value for the community.

Local-based community empowerment will be good if the planning and implementation are carried out at local locations, involving local resources and returning to local resources. The results are enjoyed by local communities, such as Papadak's local wisdom. Thus, comparative competitiveness will be implemented as a basis or initial step to achieve competitive competitiveness. Locally based community development and empowerment programs do not make residents just spectators and observers outside the system but involve them in the development itself. Mardikanto and Soebianto (2012: 77) state that empowerment is a deliberate effort to facilitate local communities in planning, deciding, and managing their local resources through collective action and networking so that in the end, the people in Nusak Termanu have the ability and economic independence, ecological and social influences that bring positive results from the existence of Papadak's local wisdom.

Oriented To Welfare Improvement. Empowerment can be interpreted as the "authorization" of weak people (Isbandi, 2008, p. 78). Empowerment is increasingly popular in the context of development and poverty alleviation (Oos, 2017, p. 48). However, the important thing in the

empowerment process is raising awareness. A conscious society is a society that understands matters and responsibilities politically, economically and culturally. From an environmental perspective, empowerment refers to securing access to natural resources and sustainably managing them and is oriented toward increasing welfare (Mitchell, 1995, p. 45). The results of the interviews with the authors found that papadak local wisdom aims to prosper the people of Nusak Termanu by maintaining marine and fishery potential for sustainability in the future. The results of the author's research based on document data from the Kupang National Marine Protected Area Center (BKKPN) also found that from 2021 data, the number of fishing households (RTP) located on the coast within the Sawu Sea TNP Area, including in Rote Tengah District totaled 1,247 households with a total fishing fleet in as many as 482 units.

In 2011, according to data from the Kupang National Marine Protected Areas Agency (BKKPN), the number of fishing ports and resource supervisors was minimal, and the practice of illegal, unreported and unregulated fishing (IUU fishing) was still very high in Rote Ndao District. The increase in destructive activities has impacted the preservation of shallow marine ecosystems, especially mangroves and coral reefs, with an average level of damage to both coastal ecosystems reaching 70%. However, with the existence of Papadak's local wisdom, the damage to marine ecosystems can be reduced by up to 80%, so that wisdom Papadak local wisdom is also stated in the Decree of the Minister of Maritime Affairs and Fisheries of the Republic of Indonesia Number 6/Kepmen-Kp/2014 concerning Management and Zoning Plans for the Savu Sea Waters National Park and its Surroundings in East Nusa Tenggara Province Year 2014-2034 as one of the local pearls of wisdom that can maintain community welfare in Rote Ndao Regency, especially in Nusak Termanu.

Papadak's local wisdom approach, which is based on welfare development, underlies the insight of local resource management (community-based resource development), a people-centered development planning mechanism that emphasizes social learning technology and program formulation strategy. Whatever goal you want to achieve is to increase the ability of the community to actualize its capabilities (empowerment) (Hikmat, 2004, p. 2) for their welfare (Kartasmita, 1997:3, Sibarani, 2013:22, Alfian, 2013:428). The application of Papadak is intended to protect marine biota and their habitat. All marine biota, apart from those that are endangered, in the Papadak area may be taken by the community in a traditional and environmentally friendly way. The fishing gear prohibited are tuba roots, pesticides, bombs, and trawlers. Everyone from inside or outside the village who violates Papadak will be fined in the form of livestock or money. Livestock will be slaughtered with Manaholo through a series of traditional ceremonies, and the meat will be distributed to the local community. Fines in the form of money are used for marine conservation purposes in the Papadak area.

The application of Papadak provides space for local communities to participate in managing traditional marine conservation areas, which incidentally also include the Savu Sea TNP area. Papadak has changed the management of coastal and marine resources in Siomeda Village. Local communities also can build effective institutions in efforts to conserve natural resources (Oktavia et al., 2018). Communities that initially over-exploited turtles and used non-environmentally friendly fishing gear began to comply with the prohibitions listed in the Papadak. This obedience is a form of local community loyalty to the customary elders and the rules that have been set. It shows that Papadak's local wisdom is a community-based marine conservation strategy applied correctly.

Partnership Based. Partnership, according to Surjono and Nugroho (2008:29-37), from an etymological perspective, is adapted from the word partnership. The partnership is translated into partnership or partnership. A partnership can be interpreted as an alliance between two or more parties that forms a cooperative bond based on agreement and mutual need to increase capacity in

a particular business field. A partnership can be formed if it fulfills several requirements; (a) there are two or more parties, (b) they have the same vision in achieving goals, (c) there is an agreement, and (d) they need each other. Based on the results of interviews and observations conducted by the author, it was found that Papadak's local wisdom was also based on partnerships. It was done due to the large coastal area supervised by the Manaholo. This partnership involves the Village Government, traditional leaders, religious leaders, youth leaders, community leaders, fishermen and professional representatives, NGOs, Provincial BBKPN, students and the police.

The purpose of the partnership in empowering Papadak local wisdom in supporting the management of coastal and marine resources in Nusak Termanu, Rote Ndao Regency, is to achieve better results by providing mutual benefits between partners so that partnerships can provide benefits to partner parties and not on the contrary. The partnering parties can have equal or subordinate status, have the same vision and mission and complement each other functionally in supporting Papadak's local wisdom because of the empowerment process carried out to overcome problems in the community at the field location during the data collection process. In addition, empowerment must be carried out by community members from all walks of life together (Coleman, 2010, p. 418).

The existence of a partnership pattern in empowering Papadak local wisdom to support the management of coastal and marine resources in Nusak Termanu, Rote Ndao Regency, is in line with the opinion of Ife and Tesoriero (2008:35) that partnerships in community empowerment aim to build a community. Partnerships in community development aim to increase social capital, strengthen social interaction within communities, unite people and help them to communicate with each other in a way that can lead to genuine dialogue, understanding, and social action, provide support for communities to take action together and The reciprocity obtained is the effort to preserve the coastal environment through Papadak, and the reciprocity is welfare and sustainability.

Sustainable. As one of the programs that position the community as the main subject, empowerment brings big ideas for the welfare of society through the potential that belongs to the community itself. Empowerment must bring positive changes to society. Good empowerment will impact society with evidence that independence and self-reliance are created by managing their environment sustainably (Sobahi & Suhana, 2011, p. 43).

In realizing sustainable community empowerment, a long-term vision is needed that integrates sustainability in all projects and activities. It is necessary to ensure that the outreach and communication process of the program is controlled and that the implementation process involves all key stakeholders. Various aspects of financing and inventory of resources and donors can also support the realization of community empowerment (Theresia et al., 2014, p. 99). The results of interviews and observations conducted by the author show that the empowerment of papadak local wisdom in supporting the management of coastal and marine resources in Nusak Termanu, Rote Ndao Regency, still needs to fulfill the sustainability aspect in its implementation.

It is stated by the authors because, based on the authors' findings, there is no intervention in the form of budgets or facilities and infrastructure to support this activity. For example, when you want to catch people who use fish bombs, boats are needed. However, boats are not provided by the government or stakeholders responsible for the sustainability of Papadak. While NGOs only participate in turtle farming for the Manaholos, the government has never asked for reports on the progress of this activity. Papadak's local wisdom is only an initiative of the manaholo to remind the public about applicable prohibitions such as sand mining and turtle catching. If this activity continues without government assistance, it is not sure that this local wisdom will continue.

This finding is in line with the opinion (Suetomo, 2012, p. 354) that one of the failures of development practitioners in the context of community empowerment in implementing social

change theories is to create a program that the community can enjoy for a long time. The trickle-down effect is not only carried out by certain people or groups of people, and the results are only enjoyed by those people or groups of people too, but it also ignores community participation. It means the process, planning, implementation, results, and evaluation are only temporary. The specialty of the principle of sustainability is that it can build structures, organizations, businesses and industries that can grow and develop under various challenges. It is because a strong, balanced and harmonious society will be created. Strong because it does not depend on other parties, balanced and harmonious because it is carried out proportionally and together. A sustainable program that prioritizes community participation will provide the most comprehensive opportunity for improvement (Suetomo, 2012, p. 355), but this does not happen in the empowerment of Papadak local wisdom in Nusak Termanu while sustainable development is a development that never goes extinct (Suetomo, 2012, p. 148).

Factors Inhibiting the Empowerment of Papadak Local Wisdom in Supporting the Management of Coastal and Marine Resources in Nusak Termanu, Rote Ndao Regency. Local wisdom is one of the things that must be considered in environmental protection and management activities. It is stated in Law Number 32 of 2009 that environmental protection and management includes planning, utilization, control, maintenance, supervision, and law enforcement, where all activities related to environmental protection and management must pay attention to several things, including; (1) diversity of characters and ecological functions; (2) population distribution; (3) distribution of potential natural resources; (4) local wisdom; (5) community aspirations; and (6) climate change.

In the context of local wisdom, the application of Papadak wisdom in coastal and marine areas in Rote Ndao Regency, which was carried out on land first and has an effect on resource sustainability, is deemed necessary to be adopted and applied in coastal and marine areas, primarily to support management and supervision. TNP Sawu Sea. The Communication Forum initiated the application of Papadak in coastal and marine areas for Indigenous People Concerned Culture (FKTAPB) of Rote Ndao Regency facilitated by the Kupang National Marine Protected Areas Agency (BKKPN), which is the management agency for the national marine conservation area of the Sawu Sea TNP and The Nature Conservancy (TNC), an international non-governmental organization engaged in conservation.

The background of adopting Papadak local wisdom to the coastal and marine areas of Rote Ndao Regency is the increasing destruction of coastal and marine ecosystems, as well as the increasing use of this area in a destructive manner. Termanu Rote Ndao Regency, namely as follows. No Program/ Activity Design. Prohibitions and sanctions complement Papadak's local wisdom that all relevant stakeholders agreed upon in 3 Nusak. Furthermore, the FKTAPB of Rote Ndao Regency formed Manaholo (supervisors) in 3 Nusak, overseeing the designated Papadak area. Papadak's prohibition and sanctions were disseminated to all levels of society in Rote Ndao Regency by involving all parties, including the village government, church congregations and other forums. The prohibition against destructive activities in the coastal and marine areas of 3 Nusak includes cutting down mangroves, destructive fishing, damaging coral reefs, throwing garbage in the sea, and prohibition catching turtles and whales.

FKTA-PB Decree of Rote Ndao Regency No. 01/FKTA-PB/KEP/2016 dated 28 August 2016 determined that seven Manaholo people in Siomeda Village (Hoholok/Papadak Monev/Monev Team, 2017). In addition, Nggodimeda Village Regulation Number 5 of 2015 stipulates a community group for turtle watchdogs and conservationists. This group was named Gull Laut and consisted of seven people. Manaholo and Seagull are the executors and supervisors of Papadak in Siomeda Village with different roles. Manaholo is tasked with carrying out coastal monitoring, outreach to

the community, and enforcing regulations and sanctions for violators (Oktavia et al., 2018). Manaholo is determined based on the agreement of the Maneleos and is appointed traditionally by sprinkling coconut water with pandan leaves. It implies a daily responsibility that Manaholo and the entire village community bear. Camar Laut is tasked with organizing activities at the turtle hatchery, including monitoring, hatching and releasing turtles. However, the Manaholo do not have an activity program they will carry out within a specific time. The work program is essential for the organization to achieve a goal (Hetzer, 2012, p. 13).

In its implementation, FKTA-PB Decree of Rote Ndao Regency No. 01/FKTA-PB/KEP/2016 dated 28 August 2016 and Nggodimeda Village Regulation No. 5 of 2015 only stipulate community groups consisting of Manaholo as beach coast supervisors and Sea Gulls as sea turtle supervisors and conservationists, but in the findings, the authors do not know the programs what programs will be carried out by Manaholo while Sea Gulls as sea turtle supervisors and conservationists have their programs because NGOs have supported them.

The Manaholos, as the executors and supervisors of Papadak should have a work program in the form of an arrangement of work activity plans that have been designed and agreed upon together to be carried out within a specific time. The work program must be made in a directed manner because it will become the organization's guide in achieving a goal. Moreover, besides that, the work program itself can also be a benchmark in achieving targets when going to do work. The results will be evaluated at the end of the management period (Soesanto, 2011, p. 17). However, the Manaholo needs to do this, hindering the empowerment of Papadak's local wisdom in supporting the management of coastal and marine resources in Nusak Termanu, Rote Ndao Regency.

Lack of Resources. Based on the author's findings, the phenomenon is the lack of limited resources in supporting the empowerment of Papadak local wisdom in supporting the management of coastal and marine resources in Nusak Termanu, Rote Ndao Regency. In contrast, resources are a potential value possessed by a particular material or element in life. Resources are not always physical but also non-physical (intangible). The limited resources in supporting the empowerment of Papadak's local wisdom in supporting the management of coastal and marine resources in Nusak Termanu, Rote Ndao Regency, will be explained as follows.

The professionalism of Human Resources. Manaholo's professionalism as a policy implementer will develop their creativity at work. Creativity in question is using skills, both concepts and applications, to complete coastal monitoring activities from efforts to damage the coastal ecosystem. A solid commitment to carry out tasks with pleasure by not only relying on the aspects of rights and obligations alone will have a comprehensive impact on the completion of tasks effectively. Implementers aware of their responsibilities and commitments in implementing policies will mobilize all their potential and capabilities.

Based on the results of the author's observations, it is known that the Manaholos technically have high creativity to make adequate solutions for the advancement of community empowerment activities. However, it cannot be carried out properly because of the motivational aspects and implementation commitments in Manaholo because he feels that the government needs to pay attention. In the absence of incentives and supporting facilities and infrastructure, as Manaholo.

Budget. The budget is a managerial plan for action to facilitate the achievement of organizational goals (Nafarin, 2007, p. 11). The existence of limited funds owned by the government is why budgeting is the most critical mechanism for allocating resources (Mardiasmo, 2009, p. 44). The allocation of some budgets for the implementation of the empowerment of Papadak's local wisdom in supporting the management of coastal and marine resources in Nusak Termanu, Rote Ndao Regency, aims to strengthen the role of Manaholo and Camar Laut, namely maintaining culture and customs and empowering the village community itself, but in implementing the

empowerment of Papadak's local wisdom did not receive a budget allocation for each of their activities so that the Manaholo became indifferent to carrying out their activities. Some did not even carry out Papadak activities at all. The manaholo stated that this could happen because the Papadak, carried out in the paddy fields or the yield fields, would be shared a few percent of Manaholo, but this did not happen at sea, so the men slowly withdrew. The absence of a deposit mechanism and the distribution of fines awarded to violators is also a different problem.

Facility. Facilities are an important factor in policy implementation. The implementer may have sufficient, capable and competent staff, but with supporting facilities (facilities and infrastructure), the implementation of the policy will be successful (Daradjat, 2012, p. 230). In its implementation in Nusak Termanu, one of the inhibiting factors for empowering Papadak local wisdom in supporting the management of coastal and marine resources from a resource standpoint is the availability of facilities in the form of facilities and infrastructure that support successful empowerment where the Manaholo are not equipped with boats to oversee the waters around Nusa Termanu.

The Manaholo needs boats because the activities of destroying marine ecosystems occur not only on the coast but also at sea with fish bombs and trawling. Hence, the absence of supporting facilities and infrastructure is a different inhibiting factor for empowering Papadak's local wisdom in support of the management of coastal and marine resources in Nusak Termanu, Rote Ndao Regency.

CONCLUSION

Based on the results of the research and discussion in the previous chapter, the authors can conclude as follows:

1. The empowerment of papadak local wisdom in supporting the management of coastal and marine resources in Nusak Termanu, Rote Ndao Regency, was analyzed using the opinion of Latama, Gunarto(2002:4), which states that community empowerment is considered comprehensive if it displays five characteristics with the conclusion that empowerment papadak local wisdom in supporting the management of coastal and marine resources in Nusak Termanu, Rote Ndao Regency; (1) locally based; (2) oriented towards improving welfare; (3) based on partnership but not fulfilling aspects (4) sustainable.
2. The inhibiting factors for empowering papadak local wisdom in supporting the management of coastal and marine resources in Nusak Termanu, Rote Ndao Regency were found; (a) there is no program/activity design and (b) the lack of human resources, budget and supporting infrastructure.

REFERENCES

- Abdullah, I. (2010). *Konstruksi dan Reproduksi Kebudayaan*. Yogyakarta: Pustaka Pelajar.
- Abdullah, I., Mujib, I., & Ahnaf, M. I. (Eds.). (2008). *Agama dan kearifan lokal dalam tantangan global*. Sekolah Pascasarjana UGM.
- Adi, I.R. (2008.) *InteroensiKomunitas Pengembangan Masyarakat*. Jakarta. Raja Grafindo Persada.
- Adnyani, N. K. S. (2014). Nyepi Segara sebagai kearifan lokal masyarakat Nusa Penida dalam pelestarian lingkungan laut. *Jurnal Ilmu Sosial dan Humaniora*, 3(1). <https://doi.org/10.23887/jish-undiksha.v3i1.2921>
- Agung, A. M. (2006). Membincangkan Kearifan Ekologi Kita, dalam Kompas, 30 Nopember 2006.
- Alfian, M. (2013). Potensi kearifan lokal dalam pembentukan jati diri dan karakter bangsa. *Prosiding the*, 5.

- Any, A.R.L. (2017). *Peran Lembaga Adat Dalam Pelestarian Kearifan Lokal (Orom Sasadu/Makan Adat) Suku Sahu Di Desa Balisoan Kecamatan Sahu Kabupaten Halmahera Barat*.
- Ap, A. R. (2018). Snap Mor (Tradisi Penangkapan Ikan Masyarakat Biak). *Jurnal Ilmu Budaya*, 6(2), 196-206. <https://doi.org/10.34050/jib.v6i2.5459>
- Aprianto, Y., Pardede, I. A., & Fernando, E. R. (2008). *Kearifan Lokal Dalam Mewujudkan Pengelolaan Sumberdaya Air yang Berkelanjutan*. PKL Penulisan Ilmiah. IPB: Bogor.
- Aritonang, E. (2001). *Pendampingan Komunitas Pedesaan*. Sekretariat Bina Desa/In DHRRA. Jakarta. Sekretariat Bina Desa.
- Bakhtiar, D. (2016). Peran Pendidikan, Sains, dan Teknologi dalam Membangun Intelektual Bangsa dan Menjaga Budaya Nasional di Era MEA. In *Seminar Nasional Pendidikan*, 2527, 650-660.
- Bani, K.B. (2018). *Fungsi Mosalaki dalam pelaksanaan pembangunan Desa di Desa Ngalupolo Kecamatan Ndona Kabupaten Ende*.
- BKKPN Kupang. (2016). *Pengukuhan Manaholo (pengawas Papadak/Hoholok) wilayah pesisir TNP Laut Sawu, Kabupaten Rote Ndao: Kupang*.
- Clifford, G. (2007). *Abangan, Santri, Priyayi dalam Masyarakat Jawa*. Jakarta: Pustaka Jaya.
- Cook, S., & Macaulay, S. (1997). *Perfect Empowerment-Pemberdayaan yang Tepat*. PT Elex Media Komputindo, Jakarta.
- Creswell, J. W. (2016). *Research design: pendekatan metode kualitatif, kuantitatif, dan campuran*. Yogyakarta: Pustaka Pelajar, 5.
- Danesi, M. (2010). *Pesan, tanda, dan makna*. Yogyakarta: Jalasutra.
- Departemen Pendidikan Dan Kebudayaan. (1978.) *Adat Istiadat Daerah Nusa Tenggara Timur*. Jakarta: Pusat Penelitian Sejarah Dan Budaya A Proyek Penelitian Dan Pencatatan Kebudayaan Daerah.
- Dewi, A. A. I. A. A. (2018). Model Pengelolaan Wilayah Pesisir Berbasis Masyarakat: Community Based Development. *Jurnal Penelitian Hukum p-ISSN*, 1410, 5632.
- Erwin, M. (2017). Peran Lembaga Adat Dalam Pembangunan Desa Sidomulyo Kecamatan Tabang Kabupaten Kutai Kartanegara. *E-Jurnal Ilmu Pemerintahan*, 5.
- Fajarini, U. (2014). Peranan kearifan lokal dalam pendidikan karakter. *SOSIO-DIDAKTIKA: Social Science Education Journal*, 1(2), 123-130. <https://doi.org/10.15408/sd.v1i2.1225>
- Fandeli, C. (1995). *Dasar-dasar manajemen kepariwisataan alam*. Yogyakarta: Penerbit Liberty.
- Ginanjari, K. (1997). *Administrasi Pembangunan, Perkembangan Pemikiran dan Prakteknya di Indonesia*. Jakarta. LP3ES.
- Gregor., P. (2009). *Empirical Research Method*. Jakarta: Poster
- Gunarto, L. (2002). *Pengelolaan Wilayah Pesisir Berbasis Masyarakat di Indonesia*. Program Pascasarjana IPB. Filsafat Sains. Bogor.
- Hetzer, E. (2012). *Central and Regional Government*. Jakarta: Gramedia.
- Hidayat, R. 2017. *Dukungan kearifan lokal Hoholok/ Papadak dalam pengelolaan Taman Nasional Perairan Laut Sawu di Kabupaten Rote Ndao*.
- Hikmat, H. (2001). *Strategi Pemberdayaan Masyarakat*. Bandung. Humaniora Utama Press.
- Ife, J., & Tesoriero, F. (2008). *Community development: Alternatif pengembangan masyarakat di era globalisasi*. Yogyakarta: Pustaka Pelajar, 265.
- Iskandar, J. (2014). *Manusia dan Lingkungan dengan Berbagai Perubahannya*. Yogyakarta: Graha Ilmu.
- Istiawati, F. N. (2016). Pendidikan Karakter Berbasis Nilai-nilai Kearifan Lokal Adat Ammatoa dalam Menumbuhkan Karakter Konservasi. *Cendekia*, 10(1), 1-18. <https://doi.org/10.30957/cendekia.v10i1.78>
- James, C. 2010. *Dasar-Dasar Teori Sosial*. Jakarta: Nusa Media.

- John, H. (2007). *Revitalisasi Kearifan Lokal: Studi Resolusi Konflik di Kalimantan Barat, Maluku, dan Poso*. Jakarta: ICIIP dan European Commission.
- Kementerian Kelautan dan Perikanan. (2017). *Dukungan Kearifan Lokal "Hoholok/Papadak" dalam Pengelolaan Taman Nasional Perairan Laut Sawu di Kabupaten Rote Ndao*. Retrieved from. <https://kkp.go.id/djprl/bkkpnkupang/artikel/3570-dukungan-kearifan-lokal-hoholok-papadak-dalam-pengelolaan-taman-nasional-perairan-laut-sawu-di-kabupaten-rote-ndao>.
- Keputusan FKTA-PB Kabupaten Rote Ndao No.01/FKTA-PB/KEP/2016 tanggal 28 Agustus 2016.
- Ketty, N. C. (2020). *Peranan kearifan lokal papadak dalam pengelolaan pesisir dan laut di Desa Nggodimedda dan Desa Siomeda, Kecamatan Rote Tengah*. JPLB, 4(2):513-527, 2020. <https://doi.org/10.36813/jplb.4.2.513-527>
- Koentjoroningrat. (1981). *Pengantar Ilmu Antropologi*. Jakarta: Aksara Baru.
- Konvensi ILO Nomor 169 atau Konvensi Masyarakat Adat 1989.
- Kun, P. Z. (2013). *Pembelajaran Sains Berbasis Kearifan Lokal*. Prosiding Seminar Nasional Fisika dan Pendidikan Fisika. Surakarta: FKIPUNS.
- MacKinnon, K., Dudley, N., & Sandwith, T. (2011). Natural solutions: protected areas helping people to cope with climate change. *Oryx*, 45(4), 461-462. <https://doi.org/10.1017/S0030605311001608>
- Mardiasmo. (2009.) *Perpajakan*, edisi revisi. Yogyakarta: Andi.
- Mardikanto, T & Soebiato, P. (2012). *Pemberdayaan Masyarakat dalam Perspektif Kebijakan Publik*. Bandung: Alfabeta.
- Mitchell, M.H. (1995). *Introduction to Guidance*. New York: Macmillan.
- Nafarin, M. (2007). *Penganggaran Perusahaan*. Edisi Ketiga. Jakarta: Salemba Empat.
- Nasir, M. P. D. (2005). *Metode Penelitian Edisi Empat*. *Ghalia Indonesia: Jakarta*.
- Oktavia, P., Salim, W., & Perdanahardja, G. (2018.) Reinventing papadak/hoholok as a traditional management system of marine resources in Rote Ndao, Indonesia. *Ocean and Coastal Management*, 161, 37-49. <https://doi.org/10.1016/j.ocecoaman.2018.04.018>
- Peraturan Menteri Kelautan Dan Perikanan Nomor 34/PERMEN-KP/2014 Tentang Perencanaan Pengelolaan Wilayah Pesisir Dan Pulau-Pulau Kecil.
- Peraturan Menteri Kelautan Dan Perikanan Nomor 40/PERMEN-KP/2014 Tentang Peran Serta Dan Pemberdayaan Masyarakat Dalam Pengelolaan Wilayah Pesisir Dan Pulau-Pulau Kecil
- Pranarka, P.O. (1996.) *Pemberdayaan Konsep, Kebijakan, dan Implementasi*. Jakarta. Centre For Strategic and International
- Prior, D., Surroca, J., & Tribó, J. A. (2008). Are socially responsible managers really ethical? Exploring the relationship between earnings management and corporate social responsibility. *Corporate governance: An international review*, 16(3), 160-177. <https://doi.org/10.1111/j.1467-8683.2008.00678.x>
- Pudentia. (2003.) *Hakikat Kelisanan Dalam Tradisi Melayu Mak Yong*. Jakarta: FIB-UI.
- Puspita, M. (2017). Kearifan Lokal dalam Pengelolaan Sumber Daya Pesisir dan Laut Hukum Adat Laot dan Lembaga Panglima Laot di Nanggroe Aceh Darussalam. *Sabda: Jurnal Kajian Kebudayaan*, 3(2). <https://doi.org/10.14710/sabda.v3i2.13253>
- Putri, N. I., Chandrika, N. L., Pangestu, G. L., & Suryanda, A. (2021). Peranan Kearifan Lokal Sistem Sasi Dalam Pengelolaan Sumber Daya Laut Indonesia. *Jurnal Ekologi, Masyarakat & Sains*, 2(1). <https://doi.org/10.55448/ems.v2i1.24>
- Riant, N. (2006). *Kebijakan Publik Untuk Negara-negara. Berkembang; Model-model Perumusan, Implementasi, dan Evaluasi*. Jakarta: Elex Media Komputindo

- Ridwan, B. (2013). Kesadaran dan tanggungjawab pelestarian lingkungan masyarakat muslim Rawa Pening Kabupaten Semarang. *INFERENSI: Jurnal Penelitian Sosial Keagamaan*, 7(2), 321-342. <https://doi.org/10.18326/infsl3.v7i2.321-342>
- Ridwan, M., Fathoni, R., Fatihah, I., & Pangestu, D. A. (2016). Struktur Komunitas Makrozoobentos di Empat Muara Sungai Cagar Alam Pulau Dua, Serang, Banten. *Al-Kauniah: Jurnal Biologi*, 9(1), 57-65. <https://doi.org/10.15408/kauniah.v9i1.3256>
- Salim, M. (2016). Adat Sebagai Budaya Kearifan Lokal untuk Memperkuat Eksistensi Adat ke Depa. *Al Daulah: Jurnal Hukum Pidana dan Ketatanegaraan*, 5(2), 244-255. <https://doi.org/10.24252/ad.v5i2.4845>
- Satria., A. (2002). *Pengantar Sosiologi Masyarakat Pesisir*. Cidesindo: Jakarta.
- Sedarmayanti. (2000). *Good Governance (Kepemimpinan yang Baik)* Jilid II. Bandung. Mandar Maju.
- Zakiah, D. (2012). *Fasilitas Transportasi Konsumen*. CV Alfabeta.
- Sibarani, Robert. 2012. *Foklore sebagai Media dan Sumber Pendidikan: Sebua Ancangan Kurikulum dalam Pembentukan Karakter Siswa Berbasis Nilai Budaya Batak dalam Kearifan Lokal*. Hakekat, Peran, dan Metode Tradisi Lisan (Endraswara Suwardi ed.) Yogyakarta: Lontar.
- Sobahi Karna dan Suhana Cucu. 2011. *Pemberdayaan Masyarakat dalam Pendidikan di Era Otonomi Daerah*. Bandung: CV. Cakra
- Soenarko. 2003. *Public Policy: Pengertian Pokok Untuk Memahami dan Analisa Kebijakan Pemerintah*. Cetakan Kedua. Surabaya: Airlangga University Press.
- Strzelecka M., Boley B.B., & Strzelecka C. (2017). Empowerment and resident support for tourism in rural Central and Eastern Europe (CEE): the case of Pomerania, Poland. *Journal of Sustainable Tourism*. <https://doi.org/10.1080/09669582.2016.1224891>
- Suetomo. (2012). *Pembangunan Masyarakat*. Yogyakarta: Pustaka Pelajar.
- Sugiyono. (2012). *Metode Penelitian Kuantitatif Kualitatif dan R&B*. Bandung: Alfabeta.
- Sugiyono. (2017). *Metode Penelitian Kuantitatif, Kualitatif, dan R&D*. Bandung: Alfabeta.
- Sutrisno & Putranto. (2005). *Teori-teori Kebudayaan*. Yogyakarta: Kanisius.
- Theresia, A., Andini, K. S., Nugraha, P. G., & Mardikanto, T. (2014). *Pembangunan berbasis masyarakat: acuan bagi praktisi, akademisi, dan pemerhati pengembangan masyarakat*. Penerbit Alfabeta.
- Tohopi, R. (2014). Pendidikan Karakter Berwawasan Lingkungan di Gorontalo. *Al-Ulum*, 14(1), 43-66.
- Trenouth, A. L., Harte, C., de Heer, C. P., Dewan, K., Grage, A., Primo, C., & Campbell, M. L. (2012). *Public Perception Of Marine And Coastal Protected Areas In Tasmania, Australia: Importance, Management And Hazards*. *Ocean and Coastal Management*, pp. 67, 19-29. <https://doi.org/10.1016/j.ocecoaman.2012.04.007>
- Sastrawijaya, T. (2000). *Pencemaran Lingkungan*. Jakarta: PT. Rineka Cipta.
- Undang Dasar (UUD) 1945 Pasal 18B ayat (2) dan Pasal 28I ayat (3).
- Undang-Undang Nomor 1 Tahun 2014 tentang Perubahan Atas Undang-Undang Nomor 27 Tahun 2007 Tentang Pengelolaan Wilayah Pesisir dan Pulau-Pulau Kecil.
- Undang-Undang Nomor 23 Tahun 1997 tentang Pengelolaan Lingkungan.
- Undang-Undang Nomor 23 tahun 2014 tentang Pemerintahan Daerah.
- Undang-Undang Nomor 31 Tahun 2004 Tentang Perikanan.
- Undang-Undang Nomor 32 Tahun 2009 tentang Perlindungan dan Pengelolaan Lingkungan Hidup. <https://doi.org/10.30736/ji.v2i2.22>
- Wahyono, A.& Masyuri, I. (2001). Pemberdayaan masyarakat nelayan. *Yogyakarta: Media Pressindo*.
- Wales, H. Q. (1948). Culture change in greater India. *Journal of the Royal Asiatic Society*, 80(1-2), 2-32.
- Wibowo, A. (2015). *Pendidikan Karakter Berbasis Kearifan Lokal di Sekolah*. Yogyakarta: Pustaka Pelajar.

- Yafie, A. (2006). *Merintis Fiqh Lingkungan Hidup*. Jakarta: Ufuk Press.
- Prasetyo, Z.K. (2013). *Pembelajaran sains berbasis kearifan lokal*. Prosiding, Seminar Nasional Fisika dan Pendidikan Fisika. Surakarta: FKIP UNS.
- Zulkarnain, A. A., & Febriamansyah, R. (2008). Kearifan lokal dan pemanfaatan dan pelestarian sumberdaya pesisir. *Jurnal Agribisnis Kerakyatan*, 1(1), 69-84.