

# Environmental Communication Planning in the Development of Mangrove Ecotourism in Bengkalis-Indonesia

Yasir

Department of Communication Science  
Riau University  
Pekanbaru, Indonesia  
yasir@lecturer.unri.ac.id

**Abstract**— Damage to mangrove forests and abrasion is a coastal problem in Bengkalis Regency which continues to worsen even more. Preservation of mangroves and community-based ecotourism development can be the best solutions to this problem. This paper aims to explain environmental communication planning in the development of mangrove ecotourism in Bengkalis Regency. The research method used is descriptive qualitative. The researcher collected data through interviews, observation and documentation. The results showed that environmental communication planning in the development of mangrove ecotourism in Bengkalis Regency was guided by the Ministry of Home Affairs regulation number 33 of 2009 concerning Guidelines for the Development of Ecotourism in the Region. Communication planning developed was carried out through problem analysis and goal setting; selection of media and communication channels; message development and media production; and implementation and evaluation. Community-based environmental communication planning is a very important aspect in the success of mangrove ecotourism development. Environmental communication planning must be creative, integrated and involve the cooperation of all stakeholders.

**Keywords**—environmental communication, communication planning, ecotourism, mangrove

## I. INTRODUCTION

Mangrove forests are under threat by the impacts of erosion, which is also intensified by human activity and aggravated by global warming and climate change [1]. Mangrove are one of the primary features of Indonesia especially in east coastal of Sumatera. People in mangrove communities have utilized ecosystems of mangrove for firewood, charcoal, timber and others. The mangroves in the coastal ecosystem are rapidly damage due to general forest degradation. The degradation of this ecosystem has a negative impact on the environment and economic activities of the local communities [2].

Damage to mangrove forests in Bengkalis District has been getting worse lately. Data from the Riau Province Environment Office in 2018 noted that the area of mangrove damage in Bengkalis District reached 8,090 hectares. On Bengkalis Island itself in 2014, abrasion could reach 59 hectares per year [3]. This is due to the high exploitation of mangrove forests as raw material for charcoal, coconut milk and firewood even smuggled into Malaysia. The high exploitation of mangrove forests and low law enforcement make the destruction of mangrove forests on Bengkalis

Island increasingly widespread. The decreasing mangrove forest accelerates abrasion. This damaged mangrove forest also causes damage to other ecosystems such as the reduction in marine products of fishermen. To overcome this problem, the Bengkalis Regency government through the Department of Environment facilitates and forms groups to develop mangrove ecotourism. This ecotourism development policy plan has been regulated in the Ministry of Home Affairs Regulation number 33 of 2009 concerning Guidelines for the Development of Ecotourism in Regions [4]. Ecotourism is nature-based tourism by including aspects of education and interpretation of the natural environment and culture of the community with ecological sustainability management [5].

Community-based ecotourism is an ecotourism business that focuses on the active role of the community [6]. Coastal communities have a distinctive life, because they are faced with harsh ecosystem conditions and sources of life that depend on coastal and marine resources [7]. Several community groups on Bengkalis Island have been conserving mangrove forests and some have been used as tourist attractions. Villages that have mangrove forest conservation for ecotourism include Sebauk Village, Teluk Pambang, Deluk, Penebal, and others. Sebauk Village, for example, has a Community Nature Care Group called Kempas and Penebal village has Kedabu group. In 2016, Kempas won an award from the Environment Agency of Riau Province as an environmental savior category. Kempas itself is an example and one of the solutions to the problems that occur in mangrove forests in the coastal area of Bengkalis Regency.

Ecotourism of mangrove forests managed by Kempas is an area affected by tides. The existence of tidal pools with mangrove forests can preserve the sustainability of the coastal ecosystem which functions as the cultivation of lokan, snails, crabs, shrimp, and others. The mangrove ecosystem is very complex, consisting of flora and fauna of coastal areas that have ecological and socio-economic functions [8]. The ecological function of mangroves is to maintain, protect and stabilize the coastline from abrasion, waves and tides. Mangrove ecosystems also function as the survival of habitats, namely breeding, foster care and foraging for various types of fish, birds and primates. On the other hand, the socio-economic functions of mangroves are sources of livelihood, building material sources, natural tourism, aquaculture areas and others [8].

The success of Kempas's mangrove conservation has become a communication that inspired other community groups in Bengkalis Regency that generally experienced the same thing. Kempas's concern for the environment and efforts to utilize the mangrove conservation area as an attractive ecotourism are examined in the environmental communication approach. Environmental communication needs to be built to achieve understanding among communities even with regional and central government, so that environmental problems have alternative solutions that can be pursued jointly through community behavior and actions independently [9].

Environmental communication is a constitutive and pragmatic means for human understanding of the environment and the relationship between humans and nature [10]. Pragmatically, environmental communication activities are related to education, alertness, convincing, mobilizing, and helping people to overcome environmental problems. Whereas in terms of constitutive understanding, environmental communication includes aspects of regulating, compiling, representing nature and environmental problems themselves as subjects for human understanding.

Environmental communication is also defined as intentional information exchange both in the form of knowledge and environmental policies [11]. Another opinion explained that environmental communication is an exchange of human messages in, from, to, and about the world around humans and human interaction with nature in a systematic manner [12]. Environmental communication is also the use of approaches, principles, strategies, and communication techniques in an effort to manage and protect the environment [11]. Furthermore, Flor and Cangara add that there are three main functions in environmental communication, namely exchanges or transactions: material, energy, and information between the environment and other living systems. Environmental communication plays a role for the survival of every living system, both organisms, ecosystems, and social systems.

Environmental communication adheres to the principle that the purpose of human communication is mutual understanding. Therefore, communication in an environmental perspective is not only seen as an instrument or a tool supporting the implementation of environmental management, but rather becomes an integrated part of environmental management itself [11]. It means, without communication, environmental management will face many crucial problems. Besides having to be able to generate community participation, environmental communication must also be able to empower community members not to remain silent as passive recipients, but can also be an active source of information.

Departing from the study of some experts, this study seeks to explore environmental communication planning in the development of mangrove ecotourism on Bengkalis Island. Communication planning is inseparable from the communication policy itself because communication policy provides a basic framework for planning to be implemented [13]. The environmental communication planning study includes the formulation of campaign goals and objectives, analyzing audiences and available communication resources

and determining the implementation [12]. Communication planning is a guide to business or communication activities carried out throughout the project. It becomes a work document that is constantly updated according to changes in audience needs [13]. Communication planning can explain how to disseminate the right message, and the right audience through the right channel at the right time. In this case, communication planning is very crucial in the preservation and development of mangrove ecotourism.

## II. RESEARCH METHOD

This study uses qualitative research methods with descriptive approaches [14]. The research location is Bengkalis Island in Bengkalis Regency. Bengkalis Island suffered severe abrasion damage along with the destruction of mangrove forests on the coast of the island. The research subjects were Kempas mangrove forest conservation groups; Staff of the Office of the Environment of the Marine Service; Employees of the Fisheries and Marine Services, village heads and community leaders whose total number of informants was eight people selected using a purposive technique.

The researcher collected data by conducting in-depth interview, observation and documentation techniques. In this case, interviews were conducted with informants, both main informants and supporting informants. Interviews were conducted by directly observing the object under study related to environmental communication in the development of mangrove ecotourism. Moreover, the researcher also collected data through documentation techniques, namely by collecting several archives of communication activities, regulations and policies produced by the government as well as decisions issued. The researcher used an interactive model analysis technique developed by Miles and Huberman [14]. In addition, the researchers used data validity checking techniques, namely by using triangulation, peer checking and extension of participation.

## III. RESULTS AND DISCUSSION

Communication planning for ecotourism development is closely related to the development of forest areas [15]. Efforts to rehabilitate and conserve mangrove forests for ecotourism development require active participation of local residents as actors of conversion [8]. The government has placed the community through groups to rehabilitate and develop mangrove forests as ecotourism. Discussion and mutual cooperation are always used by local groups as a step to break down the goals and activities in building mangrove ecotourism. Routine meetings are held not only for discussion, but aim to maintain friendship between members, and also as a forum for sharing ideas. Ecotourism development that involves local communities in their management can provide economic benefits to the community or the local government [16].

Concern to save Bengkalis Island from abrasion and efforts to develop mangrove ecotourism is not only done by residents, but also a concern for the Bengkalis Regency government. This has been regulated in the Ministry of Home Affairs Regulation number 33 of 2009 concerning Guidelines for Ecotourism in Regions in chapter 3 that

development must have planning, utilization and control [4]. The regulation also stipulates that local governments in making policies must empower the community and coordinate with various agencies. The government has made policies and communicated to the community through several empowerment programs by fostering fishing communities or community groups. Government programs to overcome abrasion were also carried out by building breakwaters and making coastal walls in certain areas, but were not effective.

In addition, various approaches, programs and methods of communication have been used to prevent further damage to mangrove forests and abrasion. However, environmental communication is still not an important component. Even if there is implementation, it has not been fully integrated. In fact, environmental communication cannot be separated from planning and communication strategies to support policy making, public participation, and its implementation on environmental concerns. However, environmental communication planning has used several stages.

#### *A. Problem Analysis, Public Analysis and Setting of Communication Objectives*

This stage consists of steps of situation analysis and problem identification, analysis of public/actors involved, and setting of communication objectives. Research on problem of damage to mangrove and the usability of communication methods is audience dependent, and often requires long-term interaction with target audiences in order to understand their particular needs [17]. Determining the purpose of communication is to utilize and focus the power of the communication system produced to make communication more effective and efficient [12]. There is awareness and understanding of the community about environmental issues and is responsible for jointly seeking solutions to solve the problem of abrasion and damage to mangrove forests in the area, especially those in the coastal area of Bengkalis Island. In addition to land damage due to abrasion, there is ongoing logging of mangrove forests for charcoal, fuel wood and building materials without replanting [18]. Some people already have an awareness to protect their environment. The Chairman of Kempas revealed:

"The beginning of the formation of the Kempas group was because on average our members are fishermen, so they know how the coastal area is. Therefore, there was a desire from our members to manage the area. We were looking for partners to government institutions to give some assistance, and finally we cooperate with the Office of Maritime Affairs and Fisheries. We consulted with members and involved one person from the Marine and Fisheries Service. The result of the discussion is in the form of making a Mangrove Forest program ". (Interview, Zakaria, Chair of KEMPAS, 26/02/2019).

Anxiety and restlessness of some people towards mangrove forest destruction and abrasion is a form of community awareness as a way of analyzing and resolving the problem. That is why ecotourism development is one of the development alternatives that can help overcome the problem [15]. Discussion and mutual cooperation activities

become community strength as a form of group communication. This analysis through discussion seeks to respond to existing mangrove forest environmental problems. As a joint business group in Sebauk Village, Bengkalis Subdistrict, Kempas was initially only engaged in fishing. Over time this group's strong willingness encouraged them to create and develop mangrove forest tourism and campaign for other groups.

Environmental communication campaigns are carried out in response to issues of problems and needs for a better environment [12]. Management of mangrove forests in several villages on Bengkalis Island is carried out not only by community initiatives but has become part of the government's problems. The Department of Marine Affairs and Fisheries, whose role has recently been taken by the Environmental Service, also plays an active role in giving ideas to Kempas to manage mangrove forests as tourist destinations.

#### *B. Selection of Media and Communication Channel*

This stage includes efforts to develop communication strategies, selection of media and communication channels and use of approaches to motivate and mobilize the community. Considering the overall budget, communication planners must decide on the choice of mass media that might be effective in conveying the message and achieving the objectives of the plan [12]. With the existence of a mangrove forest development program as ecotourism, the Bengkalis Regency Environmental Service uses interpersonal, group, public (socialization) communication channels and the use of other mass media to provide environmental awareness to the community. Interpersonal communication was used mostly by village elders, government officials and family members [2].

The channel that relies on communication group or community groups that care about the environment of mangrove forests is the priority. This service has chosen a group communication channel by involving community leaders to provide information to the general public. In this case, community leaders and civil servants as an extension of the government and community spokespersons hold the key to the development of mangrove ecotourism [6].

The success of a tourist destination cannot be separated from the role of the government as it plays a very important role in tourism infrastructure providers [16]. The government formed groups and was facilitated with assistance in the form of nursery costs, provision of polybags and various agricultural equipment. The Bengkalis Regency Environmental Service also asked each village head to oversee the program so that the program could run well. The government through the related agencies involved the Fisheries and Marine Services, village heads, and other community leaders in their communications. Unfortunately, this coordination is not done by involving broader stakeholders, even ecotourism development without involving the tourism agency. Whereas integrated tourism marketing communication requires a coordinated and integrated approach between interpersonal communication and other communication channels [5].

Community-based social marketing intent is on affecting behaviors toward a common goal or outcome that would



benefit the “community”, highlighting the need for more targeted, local-level initiatives over reliance on large-scale mass communication campaigns to promote sustainability behaviors [19]. Nowadays, the social media has emerged as an opportunity for marketing communication, and it is the easiest cheapest way of advertising products and services [20]. Social media marketing encourages the use of interpersonal communication channels and community leaders to supplement other communication channels.

This Kempas communication environment can be considered successful in motivating, marketing, transmitting and giving awareness about the management of mangrove forests. This success is supported by the choice of communication channels combined with word of mouth. Gethok tular (chain message) is a very effective communication strategy to convey information about environmental sustainability to the community [21]. The success of this communication can be seen from the planting of new mangrove forests in Pangkalan Batang Village, which is a village adjacent to Sebauk Village. In addition, there is an increase in the demand for mangrove seedlings from other groups to be planted in the region, as an effort to overcome abrasion-affected areas and efforts to replicate the development of mangrove ecotourism areas.

Coaching through intense interpersonal communication makes environmental communication more effective. Interpersonal communication acts as a liaison between individuals or groups. But the choice of group communication channels is very effective in empowering with the participatory communication approach [7], [22]. The policy and support of government officials through proper communication is very important in the success of this mangrove ecotourism program.

### C. Message Development and Media Production

This stage consists of steps to develop messages and produce media. The combination of messages and media is considered to be based on the audience [12]. The media is very important to produce, reproduce and distribute messages both by the government and society [22]. The message of environmental communication is directed in an effort to change the habits of an unconcerned audience to be concerned about the environment. The packaging of environmental communication messages is carried out by the Department of Living Environment by collaborating with groups such as KEMPAS. The message disseminated by the government is still very formal. The instructions are generally by conducting socialization such as conducting training for several community groups. The socialization and formation of the environmental management group was motivated by damaged environmental issues. In addition, the government seeks to preserve and maintain the balance of the ecosystem so that there is a buffer for the coastal environment. Therefore, it is necessary to re-plant Mangrove forests.

Environmental communication is effective if the messages become planned campaigns [12]. The government uses messages to appeal and invite the public to safeguard and preserve existing ecosystems through billboard on certain beaches. This message choice adjusts the environmental

conditions of the coastal waters in Bengkalis Regency which have been damaged due to abrasion. The environmental communication message was packaged in a documentary video about the process of managing the Kempas program, such as playing at the stand of the Environmental Service at the MTQ event in Selatbaru. The video presentation is to promote and form an environmental campaign. In addition, the Environmental Service Stand also featured physical sketches from the master plan for the mangrove ecotourism program.



Fig. 1: Examples of Message and Communication Channels

The Bengkalis Regency Government through the Department of Environment gave an appeal and an example to the community and visitors of the event to always care about mangrove forests. In addition, there are still several media choices such as using warning board media, banners or billboards. This message was made with the hope that the community and visitors in mangrove ecotourism have a sense of responsibility to protect the environment.

### D. Implementation and Evaluation

This stage consists of managing steps to implement message dissemination through the media, concrete action, monitoring and evaluation. The environmental communication plan must always include a description of how the project will be evaluated [12]. Evaluation of communication in an effort to raise awareness of the community towards the environment of mangrove forests has not yet proceeded because evaluation was not carried out optimally. Environmental communication is the key to priority, commitment to implementing government policies. The implementation of policies for disseminating environmental communication messages must be coordinated between agencies and integrated with various types of media and communication channels. The process of monitoring and evaluating environmental communication programs in ecotourism development cannot be done for a short time, but it must be carried out in

a sustainable manner with the principle of discussion and mutual cooperation. The activities of mangrove rehabilitation and conservation require ongoing supervision and maintenance [8].

Environmental communication with discussion is a unique form of community culture. The members always consult and work together in solving problems and managing the mangrove area. Any problems can always be justified through discussion between members, especially in evaluating each program that has been carried out. Documentation is always taken to evaluate the extent to which the progress made and this is also stored to be archived for each activity carried out. This documentation is also used later as a media campaign in raising awareness and fostering the community or other groups who want to learn to join this program.

Implementation of ecotourism development can increase public awareness and participation in conservation activities if they benefit [23]. Therefore, environmental communication programs through fostering groups such as Kempas are more effective because they can be an example for other communities or groups. This group has contributed to the development and improvement of the mangrove replanting movement.

Cooperation between Kempas and Generations of Indonesian Charm (Genpi) Bengkalis to hold a festival to eat durian in mangrove forests can promote mangrove ecotourism. In addition, the durian party festival program can also increase public awareness in preserving mangroves and their concern for the environment. In the long term Kempas wants the community to change public awareness about the importance of managing their environment.

civilization and natural biological systems [10]. In this case, the Bengkalis Regency Environmental Agency plays an important role in making communication policies and planning to address environmental problems in Bengkalis Regency. In accordance with Minister of Home Affairs Regulation No. 33 of 2009 in Article 1 point 6 which states that "ecotourists are government, regional government, business world, and communities engaged in tourism" [4]. Communication programs are carried out through socialization, coaching and facilitators of community groups.

Environmental communication in developing mangrove ecotourism should use a mix of channels and communication media by using various communication techniques and methods more creatively. This study proposed an integrated methods of environmental communication among stakeholders for improved livelihoods of the society and mangroves conservation by developing mangrove ecotourism. Communication carried out is indeed dialogical or interactive with a model of discussion and mutual cooperation. Communication through the development of groups concerned with the mangrove environment by the government strengthens cohesiveness among members. The government strengthens messages related to environmental issues, mangrove damage, abrasion, through groups that are fostered to be passed on to other communities. This environmental communication must be continuously evaluated for sustainable development so that it continues to experience improvements to reach an agreement and the desired goals, namely the sustainability of mangrove forests and the welfare of the community.

#### IV. CONCLUSION

Environmental communication for the development of mangrove ecotourism in Bengkalis Regency is carried out with the principle of discussion and mutual cooperation. Communication can be grouped following the communication planning process with several stages. The first stage is problem analysis and goal setting. Situation analysis and identification of social, economic, and environmental problems are carried out to assess the feasibility of the mangrove development program as ecotourism. This stage also analyzes the actors or audiences involved and determines the purpose of communication, namely to provide understanding, awareness and concern for mangrove forests. The second stage is the choice of media and communication channels. This stage includes the development of communication strategies; selection of communication channels; and the development of approaches to motivating and mobilizing the community. The third stage is message development and media production. This stage seeks messages to be well packaged and produce media accompanied by trials. The fourth stage is program management and communication evaluation. The implementation phase requires good and sustainable management, especially in the dissemination through the media and the implementation of communication programs made. This fourth stage includes management in monitoring, documenting and evaluating environmental communication activities in the development of mangrove ecotourism.

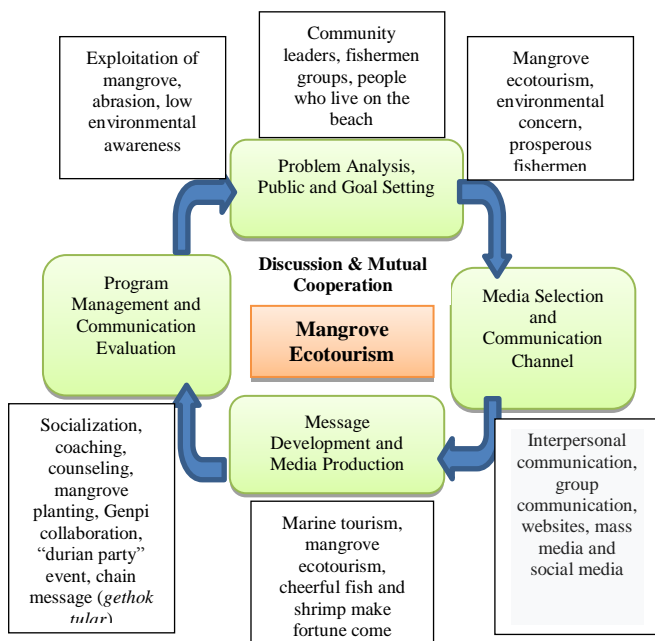


Fig. 2: Environmental Communication Planning Model in the Development of Ecotourism in Bengkalis Regency

Environmental communication seeks to improve the ability of communities to respond appropriately to environmental signals relevant to the well-being of human

Environmental communication is a very important aspect in the development of mangrove ecotourism and it must be implemented in an integrated manner. Environmental communication planning must be creative and involve cooperation or coordination to all elements, especially the tourism department. Now is the time to design, research, develop and apply the most effective communication for protecting our mangrove and strengthening the communities. This research can be further developed by developing a model of environmental communication that is based on culture and local wisdom with an ethnographic approach to local communities.

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