

# Mangrove Preservation Policy Recommendations Based on Women's Role in Bahowo Environment, Bunaken, Manado, North Sulawesi Province

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**Abstract:** *The city of Manado, North Sulawesi Province, especially in the Bahowo Neighborhood, Tongkaina Sub-District, Bunaken Sub-District, resides in coastal communities which predominantly work as small or traditional fishermen and are categorized into poor communities, but coastal areas in the Bahowo Environment are well maintained, especially mangrove forests. This is inseparable from the role of women living in the neighborhood. Therefore gender issues are important in developing efforts that support equality between men and women. Women's participation is not only demanding equality but also expressing its role in development. The purpose of this study is to formulate recommendations for mangrove conservation policies from the aspects of women's responsible human behavior. This study used qualitative research methods. The study was conducted in the Bahowo Environment in Tongkaina Sub-District, Bunaken District, Manado City. Respondents were determined using a key person, because the researcher wanted to obtain initial information about the respondent and then use the snowball sampling, so that eventually the researcher could conduct observations and interviews with the research subjects (coastal women). Data collection techniques were carried out by in-depth interviews, observations, FGD and life history methods and documentation. To answer the objectives of the research, gender analysis was carried out, namely Harvard analysis and Gender Analysis Pathway (GAP). The formulation of recommendations for mangrove conservation policies from the aspects of the human resource behavior of women responsible is 1) Carry out awareness raising awareness of gender roles for all groups, with the fact that women have the same responsibilities as men in mangrove conservation, 2) Formation of Forest Farmer Women Groups (KWTH) with a participatory approach and conducting training and counseling for KWTH by promoting gender responsive mangrove conservation programs, 3) Conducting socialization on the equality of roles of women and men in productive aspects (mangrove conservation) to the government and the community, 4) Conducting workshops preparation of programs and management activities that are gender responsive mangrove ecosystems.*

**Keywords:** Mangrove conservation policies

## 1. Introduction

The coastal area is an area with a dynamic ecosystem and is a transitional area between land and sea which is physiologically defined as the area between the coastline and the land which is still influenced by the tides of the sea, with a width determined by the slope of the coast and the sea floor, and formed by clay deposits to loose sand and sometimes the material is in the form of gravel (Dahuri, et al. 2004). The transition between land and sea, forms a diverse and highly productive ecosystem and provides economic value to humans.

One ecosystem commonly found in coastal areas is a mangrove ecosystem which is also referred to as a brackish ecosystem or mangrove ecosystem. Mangrove ecosystems are types of tropical ecosystems that typically grow along the coast or river estuary which are still influenced by tides. When compared with other ecosystems, the mangrove ecosystem has specific flora and fauna and has high diversity. Based on this, Bengen (2002) defines mangrove ecosystems in general as "tropical coastal vegetation communities dominated by several types of mangrove trees that grow and develop in muddy coastal tidal areas".

Coastal areas are highly productive ecosystems that serve as the main support for economic growth. More than 55% of national fishery products come from capture fisheries in coastal areas. Coastal, marine and small islands are ecosystem areas that are rich in biodiversity, including coral reefs, mangroves, seagrass beds, lagoons and estuaries. This

is also seen by Salakory, et al. (2017) after conducting an economic valuation of mangrove forest ecosystem in Teluk Ambon Baguala Subdistrict that the high utilization and preference of the community towards mangrove forest ecosystems shows the ability of mangrove forests to produce products that can be used to meet their daily needs.

The results of a study conducted by Zebedee (2015) in West Africa stated that to fulfill their daily needs, the people in the coastal mangrove forests, cutting down mangroves to make wood as a result, mangroves became damaged and many people lost their livelihoods. Likewise the results of the research conducted by Emmerson, et al. (2016), that due to rapid development, mangroves were degraded, mangrove forests were converted into shrimp ponds, so most coastal communities in North Vietnam lost their livelihoods. The same thing was stated by Bando, et al. (2016), that human activity is the main cause of the degradation of mangrove forests in the northern coast of Makassar City.

Efforts made by the government, in this case the Ministry of Maritime Affairs and Fisheries is the Coastal Community Economic Empowerment Program (PEMP), which began in 2001 - 2009. But even this effort seems less successful, such as research conducted by Ferdiansyah (2008) in Semarang and Kutani et al. (2010) in North Halmahera. These studies reveal that the motivation and responsibility of the community receiving PEMP assistance is not optimal, which can be seen in the low participation of group members in group activities. This happened because of the lack of socialization of the PEMP program, the credit system that

used guarantees to make it difficult for the community, and access to credit and the conditions to become members of the PEMP group were felt by the community.

Efforts to improve the welfare of coastal communities, especially fishermen have been carried out, but the condition of the fishing community has not changed, so there needs to be an alternative in its development policy. One alternative policy revealed by Garcia (2014) who conducted research on the Afro Colombia community, was that local communities must become partners of the government in developing coastal resources, because local people have a culture that can be combined with sustainable development. The same thing was expressed by Luciana et al. (2017), that local communities have high traditional knowledge of their environment, therefore they can contribute to sustainable mangrove conservation efforts.

This research is located in the Bahowo Environment, Tongkaina Sub-District, Bunaken District, Manado City, North Sulawesi Province. The selection of research locations was carried out with consideration:

- 1) Coastal areas, especially mangroves are well-maintained, whose management involves coastal women.
- 2) The development of mangrove forests is very significant, in the 1990s the area of mangrove forests was 26 ha and currently the area reaches 62.72 ha (Kelurahan Tongkaiana, 2015).

Bahowo Environment Kelurahan Tongkaiana Bunaken Subdistrict Manado City North Sulawesi Province, is an environment located on the coast and this environment is included in the zone of use of Bunaken National Park which is part of the I Meras National Park Management Section (SPTN).

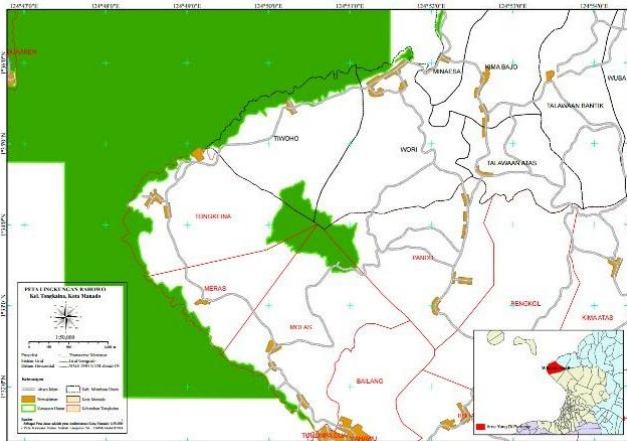


Figure 1: Research Location Map

The existence of mangroves is very beneficial for their survival, namely as a place to look for firewood, raw materials for making roofs, sources of traditional medicines, fishing grounds and other marine biota, and also as a buffer against the negative effects of sea water. But their life support began to break down in 1989 when the area was converted into farmland by PT. Wori Mas. About 20 ha of mangrove forest has been turned into shrimp and milkfish cultivation ponds for approximately 3 years and then abandoned by companies without any recovery. The adverse

effects of land conversion are felt by the people in the Bahowo neighborhood. One of them is the drastic decline in fish production, even though fishing is the main source of livelihood for the majority of people who work as fishermen, if this is allowed to cause increasingly severe poverty (Government of Kelurahan Tongkaina, 2015).

Community awareness and concern for the benefits of mangroves arose when their livelihoods were lost from Bahowo beach, so efforts to rebuild damaged mangrove areas were carried out by the entire Bahowo Environment community, including women in the Bahowo neighborhood. This mangrove conservation movement began with the mangrove nursery. The seeds they get by collecting seeds scattered along the coast of Bahowo. Then, working together to plant in locations of mangrove forests that have been damaged, the area of mangrove forests at that time, around the 1990s was 26 ha and currently the Bahowo Environment has the potential of mangrove forests covering 62.72 ha which is overgrown by 16 mangrove species (Government of Kelurahan Tongkaina, 2015).

The participatory context involving the community, including women in the mangrove conservation movement, is important to see more about how women are involved without releasing an analysis of the involvement of men in the mangrove conservation movement, so that women are no longer only seen from the sexual division of labor, but as a potential that must be taken into account in the preservation of coastal resources, especially mangroves. According to Moerpatomo (1999), women have potential that can be one of the basic capital of development and can be developed as productive workers. Without planned development, the large amount can turn into a national burden.

The results of calculations carried out by the United Nation Development Programs (UNDP) also show that women's resources have not been maximally empowered. The achievement of Indonesia's Gender Development Index (IPG) is 92.74. This figure places Indonesia ranked 6th out of 8 ASEAN countries (world GPA 92.36). Although Indonesia's GPA is slightly above the world GPA, the Indonesian Gender Inequality Index (IKG) is still quite high at 0.49. (UNDP, 2015). This means that gender inequality in Indonesia is still high (IKG values range from 0 to 1, the greater the IKG, the greater the gender imbalance due to discrimination). This figure is the highest among ASEAN countries and is higher than the world IKG (0.02). This means that Indonesia's gender inequality is still high, in other words, Indonesia's gender equality achievement is still low compared to ASEAN countries and the world (KPPPA and BPS, 2016).

The data shows that the potential of Indonesian women has not been fully empowered in the flow of development or in deciding policies, even though the population ratio is almost balanced. According to BPS data (2015), the percentage of Indonesia's population is 49.9 percent of women compared to 50.1 percent of men from a population of around 254.9 million. The sex ratio of the Indonesian population is 101.02, which means that of the 100 female population there are 101 male population.

Based on the problems that have been formulated, the purpose of this study is to formulate recommendations for mangrove conservation policies from the aspects of the responsible human resource behavior of women.

## 2. Methodology

Data collection in this study using observation techniques, in-depth interviews and documentation. This study uses qualitative data analysis. Qualitative data analysis is used to reveal the process and interpretation of meaning that leads to the disclosure of the state of behavior of coastal women in the preservation of the mangrove environment. All data obtained from various sources are reviewed and then described through three lines of qualitative data analysis, namely data reduction, data presentation and conclusion drawing. Data reduction is done through the process of selecting and categorizing data in accordance with the problem, the purpose of the research and the conceptual framework of the study. The next step is to arrange in units which are then categorized while making coding. The final stage is checking the validity of the data, after which data is interpreted (Moleong, 1998). The presentation of the data can be in the form of narrative texts (direct quotes, descriptions) and matrices, graphs, networks and charts.

Furthermore, a gender analysis is carried out, namely a technique that can give a picture of the differences and interdependence between men and women in mangrove conservation, and the differences in the level of benefits obtained by men and women from the results of coastal resources. As a tool, gender analysis not only looks at roles, activities, but also relationships that include: who makes decisions, who benefits, who uses mangrove resources, who controls mangrove resources, what factors (legal, economic or social) that affect the relationship (Handayani and Sugiarti, 2008). In this study the gender analysis used is the Harvard analysis and Analysis Gender Pathway (GAP) analysis.

## 3. Results

Opening data based on the results of research, conducted in the Bahowo Environment can be seen in Table 1.

**Table 1:** Women's activities in mangrove conservation in the Bahowo neighborhood, 2018

No	Activity	Used by	
		Men	Women
<b>A. Productive Aspect</b>			
1	Fishing place	√	-
2	The place to catch shrimp	√	√
3	The place to catch crabs	√	√
4	Producing firewood	-	√
5	Ecotourism	√	√
6	Mangrove nursery	-	√
7	Drug producing external wounds	√	√
<b>B. Reproductive Aspect</b>			
1	Caring for children	√	√
2	Washing clothes	-	√
3	Washing the dishes	-	√
4	Cooking/preparing food	-	√
5	Cleaning in the house	-	√

6	Clean the yard	√	√
7	Serving the interest of husband and child	-	√
8	Repair damaged appliances/furniture	√	√
9	Repair the damaged part of the house	√	√
10	Repair work equipment	√	√
11	Manage family finances	-	√
12	Regulate the division of labor in the family	√	√
<b>C. Socio-cultural aspects</b>			
1	Catch fish (manengkel)	√	√
2	Member of the mangrove conservation group	√	√
3	Arisan	-	√
4	Community service	√	√
5	Religious	√	√
6	Posyandu	-	√
7	Dead	√	√
8	Marriage	√	√
9	Village meeting	√	√

Source: Primary data processed, 2018.

Description: (-) does not do; (√) do

### Gender Access in the Household

The results of the study provide understanding, that women's access to opportunities to utilize the mangrove ecosystem resources in productive aspects is very good, because only fishing activities cannot be done by women. This is because coastal communities place explicitly the sexual division of labor, namely the sea is the realm of men and land work is the realm of women's work (Kusnadi, 2006), and universally there is an assumption that women are more suitable to take care and be responsible for domestic work work in the household), and the view that women are inferior to men, so women are given easy and light tasks, causing limited activities that can be carried out by women.

### Gender Participation in Mangrove Conservation Activities

Women's participation is only to meet practical needs. Because all activities carried out to meet household needs, this reveals that women are still more concerned with improving their condition, compared to their position in society.

Thus, the current needs of women are still fulfilling the practical needs of gender, not prioritizing their strategic needs. This appears in the attitude of accepting a dual role in the household and accepting their position not to demand involvement in political activities such as attending village meetings to make a decision, but the position of women in the household is to control in financial matters.

### Gender Control in Mangrove Conservation Activities

Gender gap in terms of control over mangrove conservation activities, male power is greater than women. Men are still considered as decision makers, if women want to do activities outside the home in this case doing mangrove conservation, so that it can be said that women's movement is restricted around their homes and families.

Based on the results of research on the productive aspects of household activities carried out by men and women, it was found that men exercised control over productive aspects, although it was recognized that women also had a

role in these productive aspects. This is seen when women (wives) want to do productive activities outside the home, must be approved by their husbands. While women control the reproductive aspects.

### Benefits of Control Enjoyed in Mangrove Conservation

The benefits that can be enjoyed in mangrove conservation activities are networking, environmental sustainability, knowledge of mangrove and financial cultivation. Male and female respondents benefit from access differently. This can be seen in Table 2.

**Table 2:** Benefits of Access to Mangrove Conservation Activities Respondents Conducted in the Bahowo Environment, 2018.

No	Benefits of Access in Mangrove Conservation Activities	Used by	
		Men	Women
1	Network	√	-
2	Environmental sustainability	√	√
3	Finance	√	√

Source: Primary Data processed, 2018

The benefits of access felt by male respondents on environmental sustainability is to have a positive impact on fish catches. If in the past, before the preservation of mangroves was carried out, it was very difficult to find fish, had to go to farther places, but now, it is easier to find fish. In addition, environmental sustainability creates a sense of security, because it can be protected from natural disasters and guarantees the sustainability of livelihoods as fishermen.

The financial benefit, felt by the respondents, is that getting additional income from the sale of mangrove seedlings, the community opens food stalls for tourists who come and rent boats for tourists who want to visit the nearby islands. This has created new jobs for the local community.

### Internal and External Gaps

The internal gap in this study was analyzed from the existence of negative stereotypes or labeling of women, namely placing women only as housekeepers and as weak (subordinated) beings. This can be seen from the structure of functionalism and support from socio-cultural factors.

The functionalism structure referred to in this study is a family institution in which a leader consists of a father / man, mother / woman as father and child representative as the successor of father and mother. Functional structure in family life is an important aspect, because every healthy family has a clear division of roles or functions, and these functions are patterned in a harmonious hierarchy structure and are committed to the implementation of such roles or functions, so that they can live peacefully and secure.

The results of the study also found that female respondents who carried out activities outside the home (productive aspects) must be permitted by their husbands, because women who work outside their homes are considered to violate their nature. But a lack of economic life causes the husband to often "want or not" allow his wife to carry out productive activities in order to meet household needs.

The results of the study found that the development programs in the Bahowo Environment, had not involved women especially in mangrove conservation activities, women were only placed as program implementers. This was seen in 2009, when the government carried out mangrove rehabilitation by providing assistance to the community as many as 9,000 mangrove seedlings imported from other regions (KimaBajo, Wori District, NorthMinahasa Regency). Women are only involved when planting on conservation land. Although in the end this plant does not grow well or fail.

### Monitoring and Evaluation

Monitoring is carried out periodically and continuously for a certain period of time, to determine whether a gender responsive mangrove conservation program has been able to achieve its objectives effectively and efficiently as expected. While the evaluation is carried out continuously in the long term to find out whether the gender responsive mangrove conservation program has impacted as expected.

## 4. Conclusions and Suggestions

### 4.1 Conclusion

The formulation of recommendations for mangrove conservation policies from the aspects of the human resource behavior of women responsible is 1) Carry out awareness raising awareness of gender roles for all groups, with the fact that women have the same responsibilities as men in mangrove conservation, 2) Formation of Forest Farmer Women Groups (KWTH) with a participatory approach and conducting training and counseling for KWTH by promoting gender responsive mangrove conservation programs, 3) Conducting socialization on the equality of roles of women and men in productive aspects (mangrove conservation) to the government and the community, 4) Conducting workshops preparation of programs and management activities that are gender responsive mangrove ecosystems.

### 4.2 Suggestion

The importance of the active role of the government in formulating policies on management of mangrove ecosystem resources, should formulate gender responsive policies, because women's human resources have great potential that can be used for development progress.

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