

## **Mangrove Plantation Program in the Lenses of Bajau in Kaledupa Island, Wakatobi Regency: Community Perceptions**

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### **ABSTRACT**

The restoration of the coastal areas through mangrove plantations has become an appropriate practice to substantiate sustainable resources management. Community involvement and targeted program implementation are the main factors affecting social welfare and environmental security. Labour Intensive Mangrove Planting (PKPM) is a program initiated by the Ministry of Environment and Forestry of the Republic of Indonesia as a national economic recovery during the Covid-19 pandemic. Kaledupa Island, Wakatobi Regency, Southeast Sulawesi is one area that was replanted mangroves about 81 hectares. As implemented, this program works with some communities such as Bajau Sampela and Mantigola. This research aimed to investigate the community perceptions of socio-cultural changes of the Bajau community in Kaledupa in the short term from the PKPM program. A qualitative approach with an ethnographic method was applied to this study and in-depth interview (n=6) to Wakatobi National Park (WNP) authority from September 2020 to June 2021. Bajau is having a strong relationship with nature in an ecological complexity system. The perception of the Bajau community to PKPM was based on short-term economic motives. Various existence issues as follows community participation and leadership, co-management system, customary conflicts in coastal area management, and strengthening traditional ecological knowledge are the points of discussion in this study. Bajau communities are presuming the degradation of their cultural identity and governance system that is very vulnerable to adopting the disruptive era without proper knowledge and dependency on nature. Involvement of customary institutions in sustainable mangrove management of Bajau in Kaledupa island should acknowledge the transdisciplinary integration and shareholders participation. Nevertheless, PKPM briefly helps in giving back the trust issue of Bajau communities to WNP authority and accelerates community-based conservation bridging to sustainable development goals from local practices.

**Keywords:** Community perception; Socio-cultural changes; Mangrove Plantation Program; PKPM; Bajau Wakatobi

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### **1. INTRODUCTION**

The global society has been hit by the glamorous spreading of the Coronavirus Disease 2019 (Covid-19) pandemic whose impact is still being felt until now [1]. This pandemic impacts many sectors such as health, education, public services, livelihoods, the economy, and even the environment. The Covid-19 pandemic predicts a decrease in Indonesia's economic growth rate between 1-4% and indicates an increase in poverty of around 12.4% [2]. One of

the affected groups is the coastal and small island communities, which have limited access to the trade chain and are vulnerable to environmental threats.

Coastal communities in Indonesia consist of people who have domiciles on the coastal border and some even live above sea waters such as the Bajau community. Bajau is one of the ethnic groups in Indonesia whose livelihood fully lies on coastal and marine resources. In Southeast Asia, their communities are widespread in the Philippines, Malaysia, and Indonesia [3]. The Bajau live near the coast, on small islands, some of them still practicing a nomadic life, but others build houses in the water areas as sedentary communities [4]. The Bajau people are known as sea gypsies or sea nomads [4] [5]. The Bajau culture does not only depend on the sea but also land as a transactional relation, cultural assimilation, and collective security. This can be seen from how the Bajau people imply their social norms that explain the relationship between humans (praxis dimension), humans, and the environment (corpus dimension), as well as humans and their gods (cosmos dimension).

On the corpus dimension, the closest relationship that reveals the Bajau community with terrestrial ecology is Bajau and mangroves. Mangrove forests have long been unvalued by anyone except groups of low-technology, indigenous coastal dwellers, or sea-dependent communities such as Bajau who have traditionally used the mangrove resource as an area of habitation and as a source of food and materials [6]. The Bajau people also take advantage of the mangrove resources around their place for fishing, collecting other marine products, and practicing cultural activities. Their dependence on mangrove resources is threatened by the loss of mangroves due to irresponsible practices. Overexploitation and land-use conversion are the main causes of mangrove loss on this occasion. Mangrove ecosystems consist of a special group of halophytic flower plants that thrive in brackish water and are the main support for coastal communities' livelihood [7]. Also, mangrove plays a vital role in reducing and recycling the excess atmospheric carbon dioxide burden through sequestration and storage of carbon within the soil and forest biomass [8].

The Southeast Asia region has the highest rates of mangrove loss and degradation. The International Union for Conservation of Natural Resources (IUCN) reports that between 1996 and 2016 this region represented 40% of global losses and 60% of degradation across Indonesia, the Philippines, Thailand, and Vietnam [9]. Indonesia has more than 3 million ha of mangroves [10], unfortunately, 637,624 ha have been degraded [9]. Based on One Map Mangrove from The Ministry of Environment and Forestry Republic of Indonesia, there is 57,919 ha of mangrove in Southeast Sulawesi Province that needs to be restored including the Wakatobi Regency. Administratively Wakatobi National Park (WNP) covers all areas of Wakatobi Regency. In the WNP area, Kaledupa Island is an island that has the potential for planting good mangrove forest ecosystems which are included in several zones, namely marine protection zones, tourism zones, and local utilization zones. The WNP authority in its agenda for the restoration of degraded conservation areas for the protection of water resources has made various technical and persuasive efforts, but in practice, it is still constrained by the low awareness and participation of the Kaledupa coastal community [11].

In anticipation of responding to the economic downturn due to the Covid-19 pandemic and efforts to restore damaged mangroves, Indonesia through the Ministry of Environment and Forestry has designed a program called the *Padat Karya Penanaman Mangrove* (PKPM) or translated into Labour Intensive Mangrove Planting. Practically, community involvement in the PKPM considers a key success indicator. From socio-cultural lenses, the PKPM is expected to increase public awareness and community sense of belonging to mangroves and their ecosystems. This program also provides economic benefits for the community as a compensation approach as a reward for replanting mangroves. In the WNP, PKPM targets the

replanting of 108 ha of degraded mangroves located on Wangi-Wangi Island, Kapota Island, and Kaledupa Island. The program is led by the WNP authority and *Balai Perlindungan Daerah Aliran Sungai dan Hutan Lindung* (BPDASHL) *Sampara* (translated to Sampara Watershed Control and Protected Forest). Kaledupa Island is the largest area as a target for replanting mangroves which covered an area of 81 ha and involves two Bajau communities, namely the Bajau Sampela (Samabahari Village) and Bajau Mantigola (Mantigola Village and Horuo Village). The Bajau communities in these two locations are the closest communities to the damaged mangroves and the users of these mangrove resources.

Implicitly, this PKPM gives a sense of responsibility to the Bajau community to increase the sense of ownership and conservation of mangroves. With the existence of long-term PKPM, there will certainly be a process of social interaction in the Bajau community structure, especially socio-cultural changes to programs that involve their direct participation. Although this program is not entirely a volunteer-based program, the concept of compensation funds from PKPM also certainly determines side impacts to short-term social change in the Bajau community in Kaledupa. It is a long way to determine the PKPM program changes the local livelihood of the Bajau Sampela and Mantigola communities. The seedling of the mangrove propagules program briefly guides long-term initiation, commitment, and socio-cultural changes in strengthening the ecosystem services. This study aimed to determine community perceptions of socio-cultural changes of the Bajau community in Kaledupa in the short term from the PKPM program.

## 2. METHOD

Qualitative research was applied to this research through an ethnography setting. Ethnographic research is implied to obtain deeper and detailed information to elaborate on the social phenomenon [12] that occurs in Bajau communities in Kaledupa. The Bajau community as one of the customary communities in Indonesia is a unique society with their nomadic life in the past. The ethnographic approach is the most suitable approach to see the socio-cultural changes in the PKPM case and specific and unique marine-based communities such as the Bajau people. This study began with multi-lens ethnographic observations as a general approach to cultural relativism and participant observation to see a short-term mangrove planting program implemented from October to December 2020 through the extension of the WNP Authority. As collaboration research, the basic information about PKPM was gathered from WNP authority as part of the research team through in-depth interviews (n=6).

Regarding the community participation assessment, the previous studies used the quantitative through the questionnaire [13] [14], but this research implied the qualitative ethnographic setting which suitable to execute working with indigenous peoples [15] [16]. In order to see community perception for the first phase of PKPM (three months planting program) which impacted socio-cultural changes, the research method in ethnography [17] gathered real-time information from the Bajau community where the researcher positioned himself as being a local. Advance informal interviews as a tool of ecological anthropology [18] in ethnography were implemented during the observations with the Bajau community until June 2021.

Data processing in this study uses the narrative method. The data obtained in the ethnographic records and in-depth interviews were analyzed periodically and reflected on the situation that occurred at that period to see the depth of analysis and the existence of the issue in the field [19]. The tabulated data were then validated using the triangulation method to reduce the bias of qualitative data.

### 3. RESULTS AND DISCUSSION

#### 3.1. Bajau in Kaledupa Island

The Bajau people in Wakatobi are historically a group of the *Kepunggawaan Sama* (Bajau retainer system). This retainer system was marked by the arrival of the marine nomad group which was predicted to enter the Wakatobi islands between the 17th-18th centuries. This lordship is known as *Kepunggawaan Mantigola* bringing the banner of the greatness of the Bajau community (like a flag) or known as *Ula-ula*. Initially, the Bajau community in Wakatobi resided in the Bajau Mantigola village on Kaledupa Island, then due to a big movement namely *Darul Islam/Tentara Islam Indonesia* or DI/TII (translated to *Darul Islam*/Islamic Armed Forces of Indonesia), was an Islamist group that fought for the establishment of an Islamic state in Indonesia. Caused by DI/TII movement, this group was threatened because it was considered to have joined an Islamic separatist movement. Finally, in 1956-1958 the Bajau community dispersed from Bajau Mantigola village to find new displacement locations. Currently, there are five Bajau villages in Wakatobi, one village on Wangi-wangi Island known as Bajau Mola. Then there are three Bajau villages on Kaledupa Island, namely Bajau Sampela, Mantigola, and Lohoa. Also, there is one Bajau village on Tomia Island, namely Bajau Lamanggau.

As a group of ethnic groups in Indonesia, the Bajau have traditions, culture, and customary practices that certainly include ecology on land, coast, and sea. This Bajau community chooses to live in a place with various considerations such as the place must have tidal areas, seagrass area, coral reefs area, and of course mangroves ecosystem. In the terrestrial ecosystem, the Bajau community requires a source of clean water, large trees for cultural activities, markets, and other customary groups as the giver of permits and obtain protection according to the relations with the customary community when domiciled in one place. In Kaledupa, the Bajau live altogether with the customary law community known as *Barata Kahedupa*.

Since the Bajau community are sedentary in a certain place, there is no clear source for the building materials and firewood they can use. They do not have land on land to meet these needs. They also lack reliable legal avenues to fight regulatory restrictions on their traditional livelihoods at sea. Kaledupa Island which is controlled by *Barata Kahedupa* has arranged the allotment of territory for their native group and ancestral domains. *Barata Kahedupa* does not think about Bajau as part of their indigenous community, they consider Bajau to be migrant people. Bajau, in essence, is caught between two ways of life namely land and sea. Also, the Bajau find themselves marginalized by a council system established to give locals a voice [20] [21].

The Bajau in Kaledupa depends for their livelihood on the mangrove ecosystem located around their village. Their cultural practices are not only supporting their livelihood but also socio-cultural activities such as the tradition of *Kinakang Kadilok Kadarok* (translated to preserving rice to the land and the sea) which is a worship ritual that provides *Sajen* (offerings to the spirit) to land nearest mangrove forest. The land area next to the mangrove forest is considered the most suitable area for burial sites for Bajau people. Another value in the mangrove ecosystem according to the Bajau community is as a spawning site and nursery ground for marine biota which is their source of income [22]. The Bajau community has a potion made from a mixture of shoots of one type of mangrove known as *Bangkau luar* (*Rhizophora spp.*) mixed with other medicinal plants. This drink-shaped herb is considered a supplement to keep the body healthy. It is undeniable that the life of the Bajau in Kaledupa is very close to the mangroves as the beneficiaries of ecosystem services.

Traditional ecological knowledge as an asset owned by indigenous peoples is the main force that can be used as a tool to see community participation and socio-cultural changes that occur to them [23]. Bajau people have traditional ecological knowledge to identify mangroves based on ecological covered area, species, and their uses. This PKPM is a program that can be a turning point for changing the mindset and sense of belonging to the Bajau community for their mangrove forests. Traditionally, the Bajau people do not recognize the existence of a farming process like land community practices. However, the PKPM approach with a focus on replanting mangroves in the area where they live is a newly introduced practice for the Bajau community. In addition, this activity is a series of activities from the process of seeding, planting, and monitoring. Mangrove is one of the eight main targets of conservation for WNP authority altogether with coral reefs, sea turtle, seagrass ecosystems, coastal-bird, marine mammal, spawning aggregation site, and high economic value fish. In terms of national conservation targets and economic recovery programs, PKPM has a well-accepted impression from the Bajau community in Kaledupa and has been continuing to do so as long-term programs.

### **3.2. PKPM and Community Participation**

PKPM is one of the national economic recovery programs carried out by the Coordinating Ministry for Maritime Affairs, the Ministry of Environment and Forestry, and the Ministry of Marine Affairs and Fisheries in 34 provinces, with a target of 600 ha by 2024 [24]. Supporting the local economic development is the core of PKPM's mangrove restoration design activities on Kaledupa Island, Wakatobi Regency, Southeast Sulawesi Province, along nine other provinces. Nationally, throughout the year 2020, the PKPM was estimated to involve 203,500 local workers. With an allocation of 1.5 billion IDR or equivalent to 105,212 USD, and more than 50% is spent on nursery and planting activities for mangrove propagules carried out by people who get benefit from the mangrove ecosystem.

This research found that the Bajau participation in the PKPM depends on the communication style of the group coordinator to their registered members. 90% of the Bajau community are fishermen when they have turned their activities into seeding the mangrove propagules, Bajau needs to change their advanced mindset as sea people into islanders with cultivation-based culture. The PKPM showed that Bajau Kaledupa is very adaptive to this new mangrove plantation concept. In the early assumption of this research, it might be Bajau people currently have the potential to become a cultivator for mangrove propagules or even common farmers. They could do it gently with an appropriate process. There is a need to develop more evidence questioning this early statement. The area that became the PKPM in Kaledupa was 24 ha and 79,280 planted mangroves propagules (**Figure 1**). Those areas were previously the firewood harvesting area for both Bajau Sampela dan Mantigola.



**Figure 1.** Map of Bajau villages and PKPM Site

Based on Figure 1, in both Bajau Sampela and Mantigola, the issue of PKPM has been attached to politics for the election of regional heads, village heads, and members of the legislature. Bajau people who have low knowledge are intimidated by several political winning groups in the village. In practice, this issue was developed for the reason that if you do not choose certain political actors, PKPM or other forms of mangrove planting programs will not be continued. Because the economic motives of the Bajau people are fragile, this mindset must be pressured into using their voting rights forcefully.

### 3.3. Bajau Sampela

Bajau Sampela is a community whose ecology and livelihoods are dependent on life on land as economic-based relationships. Historically, the Bajau of Sampela does not have a customary agreement to inhabit their present territory. They built a village in the Sampela area and then developed a mutualism symbiosis with the islander community from Ambeua Raya, as part of Barata Kahedupa's customary law community. In terms of accessibility, the Bajau Sampela or administratively known as Samabahari village is separated from the mainland of Kaledupa. To reach there, a sea transportation mode is needed approximately 300 meters from the nearest land (Ambeua's traditional market). Most Bajau Sampela's livelihood is small-scale capture fisheries.

The PKPM was implemented in Bajau Sampela under "Pada Kauang" group (means unity group). The group has a conservation partnership approach and is well accepted in the Bajau Sampela community. The PKPM area at Bajau Sampela was administratively not executed in the Samabahari village area. It is in Sombano village which is part of the mainland of Kaledupa. The WNP authority in selecting the site considers the level of ecosystem damages and its ecological function through access rights and responsibilities from the surrounded community who get benefits from the mangrove forest. Bajau Sampela as active users of the Langira mangrove area was acknowledged as a group that has contributed to the existence of this mangrove area and vice versa as a threat. For instance, this area is practically vulnerable to being used as a place to look for firewood and raw materials for stilt house construction by the Bajau Sampela community.

The perception of socio-cultural change observed in the Bajau Sampela community was a short-shifting mindset of community for the usage of mangroves for firewood and stilt house construction. This indirectly grows in the Bajau community as a short-term social change in a progressive way. The involvement of the Bajau community from collecting mangrove propagules to the planting period instills an understanding of a sense of responsibility. Predictably in the long-term, PKPM drives a new social construction and norm that will grow in the future regarding the protection of mangroves. Another interesting finding is that at the planting stage, which uses an intensive cropping method, the Bajau attends the planting activities by rowing boats and bringing all their family members to accelerate their works. They spend a full day at the planting site by leaving their daily fishing activities during the PKPM planting program. Bajau people could work faster from the planting target and deadline.

Besides, the social change that occurred in Bajau Sampela is the lack of involvement of traditional ecological knowledge in this PKPM. As a government program PKPM was designed through scientific observation in selecting the suitable mangrove species and plantation method to be implemented. This study found that the scientific approaches for the PKPM are different from this kind of sea nomad practice. The Bajau Sampela community stated that there were miscalculations regarding planting season. The WNP authority instructs the Bajau community to plant *Bangkau Luar* or *Bangkau Akar Tinggi* (*Rhizophora spp*). For the Bajau people, this species should be planted in the outer mangrove ecosystem. This type of species does not survive if planted at the beginning of the west monsoon because sea currents and strong waves can erode the planting area and wash away the mangrove propagules. The best season to grow mangroves in the Bajau Sampela perception is around the end of the west monsoon and before the east monsoon (approximately February to April).

Nevertheless, to mitigate the risk of west monsoon, PKPM islander-participants (non-Bajau) initiated to build a traditional fence as wave protector which considering their traditional ecological knowledge. This traditional fence was made from loosely woven bamboo. Bamboo was used due to its flexibility, cheap price, and local plant in Kaledupa Island. This loose woven bamboo strengthens the protection for mangrove propagules and reduces the sea current hits. Regarding this practice, the Bajau people did not communicate their traditional ecological knowledge. They do not have cultural practice in mangrove planting as part of ancestor instruction overhanded by generations. The Bajau Sampela people obviously adapted the practice from PKPM islander-participants.

PKPM also has an impact on the competitive spirit of the Bajau community to think economically based on nature-based works. This is contrary to the five philosophies of life of the Bajau which explain the relationship between humans and nature. The term is known as *Sikarimanan* (protecting), *Sikamasean* (loving), *Sikatutuang* (caring), *Sipakarisa* (feeling), and *Situtuloh* (helping). In this concept, the Bajau people are advised not to compete in using nature (land and sea) because of the concept of efficiency in nurturing nature. PKPM has a compensatory motive, so this cultural belief is being ignored as short-term observation. There is a changed norm which degraded over the times. It is not only a side effect of PKPM, but it is also about the eroded cultural identity of the Bajau around the Wakatobi regency due to internal and external influences.

### **3.4. Bajau Mantigola**

In contrast to Bajau Sampela, the Bajau Mantigola community, which is administratively divided into two villages, namely Mantigola Makmur Village and Horuo Village, has a marine nomadic life pattern that is oriented towards farming systems on land. The Bajau Mantigola people see the atoll in Kaledupa as a cultivation ground where they will

spend most of their time collecting sea products in the atoll or known as *Pamamiaan* (good fishing period). They will move temporarily Kaledupa's atoll or known as *Pongkok to Sapak* (Sailing to atoll) from September to early December every year. This activity has been handed for generations because of the geographical location of those who live on the west coast of the island of Kaledupa which is approximately 10 nautical miles to the Kaledupa's atoll.

The Bajau Mantigola community as the oldest Bajau village in Wakatobi has a strong relationship with the customary community on land, namely *Barata Kahedupa*. Historically, the ancestors of the Bajau here were permitted to use marine areas but had to help the *Barata Kahedupa* as coastal and marine guards from outsider's threat. In addition, the education level of the Bajau Mantigola community is higher than that of the Bajau Sampela. This can be seen from the number of undergraduate graduates and the literacy level of the community.

The Bajau Mantigola community is more easily influenced by provocation issues and motions of no confidence in the government system. Regarding the PKPM program, the Bajau Mantigola community, which had previously partnered with WNP, had a more complicated grassroots polemic. The existence of differences in the understanding of the community in receiving programs from the government triggers the conflict [25]. In a protracted manner, this difference of understanding has led to unfair management according to the Bajau Mantigola community. Currently, the Bajau Mantigola community is divided into people who are members of groups and people outside the group. The WNP authority uses a participatory approach by inviting community members to gather and discuss in a group related to the PKPM program. There are groups of people who still think that the PKPM program is merely a financial aid program. They are reluctant to hold meetings and discussions so that it creates a one-sided perception and assesses the program in terms of visible output without paying attention to the detailed program stages.

On the other hand, the PKPM system leaves adaptive management to the Bajau Mantigola community because it has the practice of utilizing waste in the form of plastic cups of mineral water as a container for raw propagules. The mangrove planting program in Bajau Mantigola is not a newly introduced project. Some programs prior to PKPM, the Bajau Mantigola community was already familiar with this partnership system and even without compensation. In 2018, the Bajau Mantigola community carried out volunteer planting of mangroves and considered traditional ecological knowledge and has been continuing presently.

### **3.5. Bajau, mangrove, and co-management system**

The socio-cultural changes that occurred in the two Bajau groups in Kaledupa because of the PKPM program were seen in the process of implementing traditional ecological knowledge. On the one hand, due to PKPM being a cross-ministerial top-down program, there is a knowledge gap of understanding of localities issues and implementing environmental rehabilitation programs that consider the indigenous peoples and local communities such as the Bajau people. It is about the standing point of academic approach versus experience approached from indigenous groups.

Regarding the PKPM mission, the objective to recover the economic crisis during the Covid-19 pandemic is successfully achieved. The Bajau community as beneficiaries get additional income when participating in PKPM. Even the profits they get can be used to buy engine boats to go to sea in the next good fishing season. There is a need for the synchronization of activities in the form of co-management in strengthening the program roadmap and the livelihoods of the Bajau community as a future target. Also, inappropriate stimulus programs encourage misperception for program collaboration and social-cultural changes.



The Bajau community continues to experience degradation of cultural identity which is very vulnerable to adopting the era of disruption without the right knowledge and modalities. This can be seen from the transactional cultural practices of PKPM activities. Bajau people presume that the existing social systems and institutions in Bajau culture exacerbate this situation because there is no longer a Bajau community leader who can maintain the co-existence of their local wisdom and cultural modalities. This study sees that if this phenomenon continues with its activities that do not consider traditional ecological knowledge, and it approaches that are not using the perspective of cultural relativism, then the declining of cultural practices and beliefs related to the environment will be accumulated. The resilience of the Bajau community to the environmental and socio-cultural crisis will worsen over time.

Indeed, sustainable management of mangrove plantations has a very important role in the context of inclusive coastal area management. Sustainability in this context refers to the involvement of customary institutions in environmental, economic, and social development. The lesson learned in this unpracticed transdisciplinary integration can be seen clearly in this top-down PKPM practice in Bajau Kaledupa. If there are no integrated activities, the chances of conflict regarding environmental, group dynamics, socio-economic, and cultural damages will be accumulated and broader for coastal communities and small islands [26]. As a cultural and social unit that is not separated, its quality and existence in the Bajau community will be potentially threatened if there is a stronger economic motive in it.

Although, the PKPM helped in minimizing the issue and gap of the Bajau people's trust in the WNP authority. Bajau people used to have mistrust issues and bad impressions due to the zoning system which were considered detrimental to them [27] [28]. Inadequate understanding of the Bajau community regarding the regulation of the zonation system in the WNP leads to the perception that limits the Bajau's activities in utilizing marine natural resources in the Wakatobi waters area. The WNP authority often finds illegal practices whose carried out by unscrupulous Bajau people in damaging the marine and coastal areas. However, Bajau views the WNP's communication approach as less humane because they are often scolded and intimidated when they interrogate whenever they do fish in Wakatobi water areas. A highlight of these two paradoxes can be simplified that both WNP authorities and Bajau communities have been caused by the emergence of people who show a wary attitude towards authorities and marine resource users. It surely creates a gap in social relations between the two parties.

On the other hand, there are groups of Bajau people who are starting to understand the importance of environmental sustainability and its impact on their lives and opening themselves up to the WNP authority. Through PKPM, it is gradually reducing the gap between those two parties, as well as providing wider opportunities for Bajau community members to have direct contact with TNW authority. Positively, the Bajau community can build a sense of trust in their shared role in preserving mangrove forests on Kaledupa Island. The existence of a sense of responsibility to preserve the environment, especially the mangrove forest area that has been planted by the Bajau community, is expected to create a sense of responsibility to remind and reprimand other communities who practice destructive ecosystems. It reminds back the Bajau marine culture and traditional ecological knowledge that nurtures nature in sustainable ways.

PKPM provides indirect education to the Bajau community that caring for the mangrove forest is a shared responsibility based on the conservation of coastal resources. Also, the Bajau people are going to get benefits from their current activities such as a deposit for the future. In an even more ambitious target at the national and global levels, practices such as PKPM will accelerate sustainable development goals through grassroots movements on

mangrove restoration. Indeed, it must be followed by free prior and informed consent in every step of the collaborative works.

#### **4. CONCLUSION**

PKPM is a stimulation program that considers long-term socio-cultural change for the Bajau community. Undoubtedly, there will be two sides to how this socio-cultural change leads to the good or contributes to the loss of the identity of an indigenous group. PKPM has provided good education to Bajau Kaledupa about the importance of protecting the environment that supports ecosystem services. This PKPM activity contributes to improving the belief system of the two groups implicitly. As Bajau perceptions, the side that needs to be considered is the decline in the quality of life and the Bajau traditional ecological knowledge who are vulnerable to social-cultural changes in Horuo-Mantigola and Samabahari village. Modality in terms of social capital of the Bajau community makes socio-cultural changes unconsciously threaten the existence of their customs. Top-down stimulus programs such as PKPM drove the misperception to program collaboration if there is no informed consent in the beginning. There needs to be a synchronization of activities in the form of co-management in strengthening the program's roadmap and the livelihood of the Bajau communities which considers sustainable resource management.

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