Management of Sustainable Coastal Areas And Small Islands Based On Collaborative Management

by Eko Priyo Purnomo

Management Of Sustainable Coastal Areas And Small Islands Based On Collaborative Management (Case Study in Bima Regency, West Nusa Tenggara)

HAERIL[1], EKO PRIYO PURNOMO[2]
Universitas Muhammadiyah Yogyakarta, Indonesia
haeril.terminator@yahoo.com, eko@umy.ac.id

ABSTRACT

Given the rare terrain of land resources, the primary targets of Indonesia's economic development will be based on coastal zones and small islands and their sources. If not supported by the implementation of appropriate management policies, it can reduce the ability of coastal and small island ecosystems in the provision of sustainable natural resources. This research was conducted in Bima regency of West Nusa Tenggara aims to find out collaborative management in the effort of sustainable management of natural resources of the coastal area and small islands. Data collection is done through observation, interview, and questionnaire distribution. Involve 100 respondents consisting of, Head of Marine and Fishery, Head of Environment Agency, Head of Tourism Office, Community Monitoring Group, Non-Governmental Organization, and Environmental Community, and coastal community of districts Sape, Bolo, Lambu, Langgudu, and Wera. The result showed the implementation of collaborative management in the management of natural resources of coastal areas and small islands in a district of Bima has not active conducted when viewed from the achievements and respondents assessment based on the index scale of 1 to 5 on the indicators of the collaborative implementation management and sustainable development goals. Where the average value of collaborative management is only 3.25 or with enough category, also so in the implementation of sustainable development goals found the average value of the index of 3.32 even with enough class.

Keyword: Sustainable development, collaborative management, coastal area and small islands, Bima Regency West Nusa Tenggara.

ABSTRAK

Dengan adanya kecenderungan sumberdaya daratan yang langka, maka target dasar pembangunan ekonomi Indonesia akan bertumpu pada zona pesisir pantai dan pulau-pulau kecil beserta sumber-sumbernya. Apabila tidak diberengi dengan penerapan kebijakan pengelolaan yang tepat maka dapat mereduksi kemampuan ekosistem pesisir dan pulau-pulau kecil dalam penyediaan sumber daya alam yang berkelanjutan. Penelitian ini dilakukan di Kabupaten Bima Nusa Tenggara Barat bertujuan untuk mengetahui *collaborative management* dalam upaya pengelolaan berkelanjutan sumber daya alam wilayah pesisir dan Pulau-pulau kecil. Pengumpulan data dilakukan melalui observasi, wawancara, *dan* pembagian kuesioner. Penelitian melibatkan 100 responden yang terdiri dari, Kepala Dinas Kelautan dan Perikanan, Kepala Badan Lingkungan Hidup, Kepala Dinas Pariwisata, Kelompok Masyarakat Pengawas (Pokmaswas), Lembaga Swadaya Masyarakat (LSM) dan Komunitas pemerhati lingkungan pesisir, serta masyarakat pesisir Kecamatan Sape, Kecamatan Bolo, Kecamatan Lambu, Kecamatan Langgudu, dan Kecamatan Wera. Hasil penelitian menunjukkan bahwa pelaksanaan *collaborative management* dan pembangunan berkelanjutan belum efektif dilakukan bila dilihat dari capaian dan penilaian responden berdasarkan skala indeks 1 sampai 5 pada indikator-indikator pengelolaan dan pembangunan di Kabupaten Bima. Dimana nilai rerata *collaborative management* hanya sebesar 3,25 atau dengan kategori cukup, juga demikian dalam pelaksanaan pembangunan berkelanjutan (*sustainable development goals*) didapati nilai rerata indeks sebesar 3,32 juga dengan kategori cukup.

Kata kunci: Pengelolaan berkelanjutan, collaborative management, wilayah pesisir dan pulau-pulau kecil, Kabupaten Bima Nusa Tenggara Barat.

INTRODUCTION

Coastal areas and small islands are the most productive part of Indonesia's marine area (Soerjani, Ahmad et al. 2001). There is a tendency for scarce land resources, the primary target of Indonesia's economic development will be based on the coastal zone and small islands and their sources (Harahab 2010). Social and economic factors are the main attraction affecting coastal development (Ferrol-Schulte, Gorris et al. 2015). Coastal resources and small islands in Indonesia with "economic giants that are still asleep" (the sleeping giant of economy), because in reality coastal areas and small islands strongly support the independence of the nation given the enormous potential owned such as physical potential, development potential, recoverable resource potential (renewable resources), unrenewable resources, and geopolitical potential but have not been appropriately managed (Dahuri 2003).

Government policies in managing coastal areas and small islands only focus on economic income not considering environmental aspects and community empowerment (Farhan and Lim 2014). The top-down policy implementation by the government makes coastal communities often have no room to consult, and as a result, their level of participation with government policy is still shallow. Community participation in the preservation of natural resources, especially coastal areas and small islands is very lacking, most of them behave destructively and have threatened sustainable capacity (Iskandar 2012).

The paradigm of government based management as a centralized or top-down approach is not suitable for sustainable natural resource management and is often blamed for increased vulnerability and damage by people who depend on natural resources (Armitage, Berkes et al. 2010). So that it becomes essential to encourage the political will of the government and the community to participate in acting. The action in question is the development and implementation of the concept of collaborative management among stakeholders in conservation program activities, and improvement of local socio- economic empowerment programs (Hidayat, Haba et al. 2011). For this reason, a study was conducted aimed at finding out collaborative management to sustainably manage natural resources in coastal areas and small islands in Bima Regency, West Nusa Tenggara Province.

LITERATURE REVIEW

1. Collaborative Management

Collaborative management is the division of power and responsibility between the government and users of local resources through knowledge partnerships at various levels of the organization (Berkes 2009). The government builds institutions, bridges and provides a forum for interaction from a variety of background knowledge, and coordinates other tasks

that enable cooperation, develop networks, manage resources, build trust and social capital, and resolve conflicts.

Collaborative management is an activity of building trust through collaboration (vertical and horizontal), institutional development, and social learning in enhancing efforts to encourage ecosystem management and resolve dilemmas in the community through multi-stakeholders (Armitage, Plummer et al. 2009). Collaborative management is a collaboration between several stakeholders that is very important for the success of natural resource management (Blumenthal and Jannink 2000). In this approach develop a framework through five principles, namely, participation, institutional analysis, simplification of natural resources, spatial data, and stages in the process of natural resource management.

Collaborative management is a term in protected area management that reference to a partnership, where various stakeholders agree to share functions, rights, and responsibilities for a protected area or natural resource (Borrini-Feyerabend 1996). These stakeholders include not only the government as the responsibilities party but also the various community, the user's of local resources, non-governmental organizational, traditional authorized, research institutions, the private sectors, and others.

Collaborative management is a management concept that can commodate the interested of the community and other user interest a natural resource management, because there is a division of responsibility and authority between the government and the community (Pomeroy, Garces et al. 2010). In the concept of collaborative governance, the local community is essential partners together with the government and other stakeholders in the management of natural resources in an area.

2. Sustainable Development Goals (SDGs)

Whereas sustainable development (SDGs) is an approach described as a building on three essential pillars such as social development, environmental protection, and economic development, which have a related and close relationship with each other (Sahin and Mete 2016). States that the goal of sustainable development is economical and social development activities that must be pursued with sustainability (Fauzi and Oxtavianus 2014). That the entire process of change in which there are activities such as exploitation of resources, the orientation of technological development, direction of investment and institutional reform must be in a harmonious condition and increase the potential of present and future to meet human needs.

Where the others concept or sustainable development is the basis of an ecological perspective, which is developed primarily from the study of biological and physical system which initially focused on population, species survival, pollution, energy and so on, which then applied to the economic and social policy (Ife and Tesoriero 2008).

Sustainable development is a human way to fulfill their basic needs, without damaging or decreasing the natural environmental system in which all humans depend (Robert, Parris et al. 2005). Sustainable development is the result of an international agreement that is to tackle the deterioration of future environmental quality (Wuryandari, Mashad et al. 2015).

3. Coastal Areas And Small Islands Management

The management of the coastal area and small island is processing of planning, utilizing, monitoring, and controlling small coastal island to resources between sectors, the between of government and regional governments, also between land and sea ecosystems, and the next between science and management to improve people's welfare.

In the law of Republic Indonesia, number 1 of 2014 amendment to law number 27 of 2007 concerning management of the coastal area and small island, that coastal area are transitional areas between terrestrial and marine ecosystem that are affected by changed into land and sea. If the viewer from the coastline, then a coastal region two kinds of boundaries, namely: boundaries parallel to the line (Longshore) and a boundary perpendicular to the shoreline (cross-hore). To the purpose of management, determining limits that are parallel to the coast is relatively easy. While small island in an island with an area smaller or equals to 2.000 km2 (two thousand square kilometers) along with the unity of the ecosystem.

The potential of coastal area and small islands of Indonesia in terms of development is a renewable resource such as fisheries (capture, cultivation and post-harvest, mangrove forest, coral reefs, seagrass, industry marine biotechnology, and non renewable res ources such as, petroleum and gas, mining materials and other minerals (Rachmad 2012). Apart from that coastal resources and small.

METHODOLOGY

The study was conducted in July to August 2017, located in the Maritime Fisheries Service, Tourism Agency, Environment Agency, coastal communities in Sape District, Bolo District, Lambu District, Langgudu District, and Wera District, Bima

Regency, West Nusa Tenggara Province, the location was very strategic in looking at case studies and problems that occur. The following picture is a map of the research location;

Figure 1. Bima Regency Administration Map

Source: Bappeda.bimakab.go.id

Types and Data Sources

The types and sources of data used are primary data, namely data obtained directly from the object under study or from information or questionnaire data (questionnaire) from the parties concerned regarding the management of coastal areas and small islands in Bima Regency such as the Head of the Marine Fisheries Service Fisheries, Head of Tourism Office, Head of Environmental Agency, Community Working Group, Community, Non-Governmental Organizations, coastal communities in Sape District, Bolo District, Lambu District, Langgudu District, and Wera District. Secondary data in the form of data obtained from documents, publications, or literature such as official data from the government in the form of strategic planning documents (Renstra), Government Performance Accountability Report (Lakip SKPD), Data on Potential Ecosystems, Energy and Mineral Resources Sea, Coastal and Small Islands the latest district of Bima, and Data from the District UPTD Report.

Method of collecting data

Data collection is done through observation (observation), interviews (interviews), and questionnaires. The questionnaire has been formulated in 5 (five) scales based on a Likert scale with alternative answers and assessment weights of 1

(one) as a minimum value, up to (5) five as the maximum value. Where the indicator is Very Incompatible (STS) (decidedly not corresponding) given an amount of 1, Not Corresponding (TS) (not corresponding) given a value of 2, Ordinary (BS) (Ordinary) given a value of 3, According to (S) (corresponding) given value 4, and Very Corresponding (SS) (very corresponding) is assigned an amount of 5.Then so that the results of this study can be qualified, it is necessary to determine the index scale of each variable. To get a category on the index scale, first look for the value of the average (mean) answers from respondents in each statement. The index value in each dimension is the mean value of all accounts that construct that dimension. Then the mean value for each research variable results will be matched into which categories in the following interpretation table:

Table 1. Interpretation Category.

Category	Range
Very good	4,21 – 5,00
Good	3,41 – 4,20
Enough	2,61 – 3,40
Not good	1,81 – 2,60
Bad	1,00 – 1,80

Data Processed by the writer.

Sampling Method

The sampling method is done through purposive sampling method. The purposive sampling method is a technique of determining samples by considering certain aspects, for example, aspects of his knowledge about the management of coastal areas and small islands in Bima Regency (Tarsito 2014). The population number refers to the demographic data of Bima Regency, namely the Head of the Department of Marine Affairs and Fisheries (1), Head of Tourism Office (1), Head of the Environment Agency (1), Community Monitoring Group (POKMASWAS) (9), NGO Akar Nusa and community activists the life of Bima Regency (2), as well as the coastal communities of Sape District (54,067), Bolo District (37,335), Lambu District (36,553), Langgudu District (37,213), and Wera District (28,232). After counting using Slovin formula with an error margin of 10%, the number of samples to be taken is 99.999483, but to make it easier the number of samples is rounded to 100 people. The following Slovin formula with the statement:

Remarks:

n = Sample size / Sample size

N = Total Population / Population

$$n = \frac{N}{1 + N\,e^2}$$

Data analysis method

The data analysis method used in this study is an interactive model consists of three main things, namely; (1) data reduction; (2) data presentation; and (3) conclusion/verification (Miles, Huberman et al. 1994). These three activities are activities that are intertwined at the time before, during, and after collecting data in the same form and for building general insights. The following is an overview of interactive model data analysis:

Figure 2. Data analysis interactive model according to Miles and Huberman
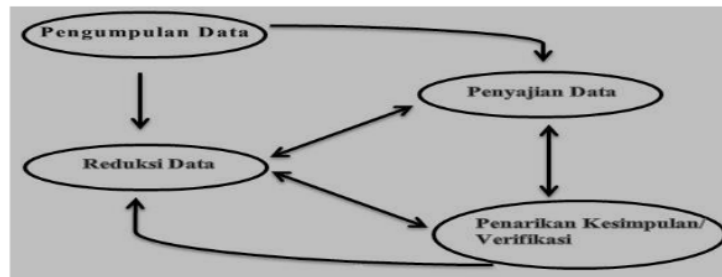
RESULTS AND DISCUSSION

Collaborative management indicators can be seen from institutional buildings (institution building), power-sharing (power sharing), problem-solving (problem-solving), governance (governance), building trust and social capital (trust and social capital) (Berkes 2009). The index value of collaborative management in the sustainable management of coastal areas and small islands in Kabupaten Bima is the average index value of the 5 (five) indicators that construct this variable. In general, the index value of collaborative management in the management of coastal areas and small islands in Bima Regency is 3.25 or in the sufficient category. But a more detailed analysis of collaborative governance in the control of the coastal regions and small islands in Bima Regency can be seen from each dimension of the cooperative management variable as follows.

Institutional Building

In the management of coastal areas and small islands, the role of formal and informal institutions is very influential in development. Both of these institutions always

influence various socio-economic activities of the community and are often used as an option to improve and increase people's income. Therefore, if community participation is much needed in the development process, the strengthening of community social and economic institutions is an essential requirement.

To measure the institutional building can be seen in the dimensions of the partnership built by stakeholders and empowerment of the Supervisory Community Group (Pokmaswas).

Table 2. Institution Building Parameter.

No.	Parameter	Index value	Category
1.	*The existence of partnerships built by stakeholders such as the Marine Fisheries Department, Tourism Office, Environment Agency, NGO, Private, and civil society.*	3,25	Enough
2.	*The strengthening and empowerment of the Community watch (Pokmaswas).*	3,30	Enough
	N=100 Nilai Rata-rata Indeks/*index average value*	*3,28*	**Enough**

Source: Primary Data Processed (2017)

However, based on respondents' assessment that the partnership built by stakeholders found an index value of 3.25 with sufficient categories, this condition indicates that the partnership that has been established has not been maximized. The partnership was only formed at the level of the interests of their respective sectors, but the integration of various sectors could not be fully realized due to differences in interests and perspectives in the management of coastal areas and small islands in Bima Regency.

On the tourism management side for example, there is no tourism conscious group (Pokdarwis), nor any other community formed to collaborate in tourism development in coastal areas and small islands as a whole in Bima Regency, because the attention of groups and communities is new to the scope of potential tourism in the sub-district, even the range of each village. Also, as a first spectrum for regional development, it is not enough to develop tourism in partnership with small communities in the region.

The presence of investors is essential to sustain tourism, especially with limited supporting infrastructure and tourism service facilities, due to the lack of the Regional Budget (APBD) of Bima Regency. However, because the image of the Region is not yet established as a tourism destination, it is also undeniable that the vulnerability of security and legal certainty for investors with the original identity as a conflict-prone Area influences the interest of foreign and local investors to invest in Bima Regency.

Thus in the efforts to rehabilitate the coastal environment and small islands. The rehabilitation of coral reefs and mangroves in the bay of Soromandi, Wera, Ambalawi, Sape, Waworada Langgudu is an activity that seeks to maintain the sustainability of coral reefs and fisheries and mangroves outside the forest area in the bay. But according to the recapitulation data on the results of the evaluation of the implementation of the Environmental Agency SKPD Renja from 2012 to 2016 where the realization of the partnership program results on an average of 51% of the performance target of 100%. This condition indicates that the implementation of the partnership program has not been maximized. The lack of knowledge of the human resources of the Fisheries Department and the Environment Agency and Non-Governmental Organizations as the working partners of the Bima District Government on coastal conservation are often obstacles in partnership and rehabilitation efforts.

Whereas in the aspect of strengthening and empowering the Supervisory Community Group (Pokmaswas), the Government through the Fisheries Marine Service has established 8 Supervisory Community Groups, each of which has a minimum of 10 people who have been confirmed by the Province based on the West Nusa Tenggara Governor Decree, among others, Pokmawas Main Grouper Bajo Pulo, Sape Bugis Bay, Sailing Bugis, Waworada Bay, Sanggar Bay, Pagar Laut, Bajo, and Naga Lere Bajo. The establishment of the Pokmaswas aims to educate the public to have a responsibility to preserve the ecosystem of coastal areas and small islands in Bima Regency.
The presence of the Pokmaswas is essential as a partner of the Marine and Fisheries Agency as well as law enforcement officers to contribute to preventing destructive fishing. However, since the supervisory authority has become a concurrent matter between the Provincial and Regency / City Governments so that it is no longer purely the authority of the Bima Regency Government, the existence of the Pokmaswas is no longer active, especially the integration and monitoring of illegal fishing and fish bombers due to weak coordination. Also, it has created a chain of commands and a long flow of information which also directly causes decision-making procedures to be inefficient.

Power Sharing

Empowerment reflects equitable sharing of power to increase political awareness or weak group power and increase their influence on the process and results of development (Paul 1987). In the sharing of power (power sharing) also reflected the principle of consultation, a delegation of authority, the existence of community control, even the exchange of information, and partnerships. The following is a table of power-sharing parameters;

Table 3. Power Sharing Parameter.

No.	Parameter	Index value	Category
1.	*There is a commitment to share roles;*	3,04	*Enough*
2.	*The principle of consultation with coastal communities.*	3,91	*Good*
	N− 100 nilai rata-rata Indeks/ *Index Average value* **3,48**		**Good**

Source: Primary Data Processed (2017)

Based on its role the actors involved in managing coastal areas and small islands in Bima Regency are divided into two, first, key players who formulate and determine policies that play a role in formulating formal rules of the game through the establishment of Regional Regulations (Perda) in managing and utilizing the coastal area and small islands in Bima Regency, including the Office of Marine and Fisheries, the Office of Tourism, and the Environmental Agency. Second, operational actors are actors who are partners of the government, who directly play a role and are involved in implementing policies in coastal areas and small islands in Bima Regency. The operational level actors, namely among the Supervisory Community Groups (Pokmaswas), Tourism Awareness Groups (Pokdarwis), Non-Governmental Organizations (NGOs), coastal communities, communities, fisheries entrepreneurs, and also tourism actors.

However, based on the respondents' assessment, it was shown that the commitment to share roles in the management of coastal areas and small islands in Bima Regency was still not optimal. This is based on findings other than because the high sectoral ego has become an institutional and political culture that develops in Bima Regency, also inseparable from the low level of trust in resources owned by all actors involved, especially actors involved at the operational level. The funds in question are the quality of human

resources, the ability of financial / funding resources, the availability of physical resources, as well as data, information, and technology resources from the actors involved in the management of coastal areas and small islands in Bima Regency. For this reason, the Government must provide consultation with coastal communities in the hope of improving coordination and cooperation, disseminating management and information, improving the quality and quantity of Human Resources (HR) in coastal areas, spurring community involvement in planning, implementation and supervision, and support for better law enforcement, and to create development management alternatives that benefit and do not damage the coastal environment and small islands in Bima Regency.

Problem Solving

Implies a different choice, while problem-solving must be done by choosing the alternative. In selecting these alternatives requires a collaborative management process to build consensus (Berkes 2009). To find out the opinions of respondents on the level of problem-solving (problem-solving) in the management of coastal resources and small islands in Bima Regency can be seen in the following table:

Table 4. Problem Solving Parameter.

| No.	Parameter	Index value	Category
1.	The availability of alternative solutions in the management of coastal areas and small islands;	3.74	Good
2.	Implementation of socio-economic empowerment of society.	3,67	Good
N=100	Index Average Value 3,71		Good

Source: Primary Data Processed (2017)

The implementation of socio-economic empowerment of the community is getting better, especially coastal communities through efforts to strengthen the Pokmaswas, Pokdarwis, Coastal communities and the Creative Economy Group (Ekraf). Likewise with the establishment of fishermen and coastal communities, as well as mentoring the

Community Salt Business Empowerment (PUGAR), in addition, 25 community cooperation groups have been formed to improve the introduction of superior fishery products and foster motivation and cooperation among coastal fishing communities to excel in groups in coastal area of Bima Regency.

For the PUGAR Program, even though based on the production details the People's Salt Business Empowerment (PUGAR) in Bima in 2016 was lower than the production in 2015 which was 7.24%, and 8.73% from production in 2014. However, the PUGAR program in Kabupaten Bima is still as the highest contributor to salt production in West Nusa Tenggara Province at 50.78 with a total output of 11,055.19 tons. The following is a picture of the realization of the Regency / City PUGAR program in NTB Province;

Figure 3. Program Realization (PUGAR) in Bima West Nusa Tenggara
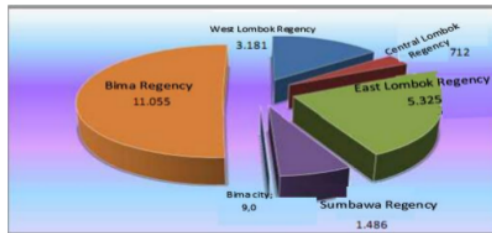
Source: Accountability Report in Marine and Fishery Government Institution West Nusa Tenggara Province (2016);

Governance

The basic idea or ideas of governance develops from collaborative management is about the approach of government as the person in charge of management and organizing partnerships (Berkes 2009). So that in this study concentrated governance from the perspective of participation and ability of stakeholders to achieve common consensus and activities based on legal rules/frameworks that guarantee the sustainability of social and economic development.

Table 5. Governance Parameter.

No.	Parameter	Index value	Category
1.	Strengthening Local regulation on coastal and small island management;	3,11	Enough
2.	Sanctions for those who undermine coastal resources and small islands;	2,54	Not good

3.	Alignment in the management of coastal areas and small islands.	2,35	Not good
N=100	Index Average Value	2,67	Enough

Source: Primary Data Processed (2017)

In general, the index of governance in the management of coastal areas and small islands in Bima Regency is 2.67 or in the sufficient category. The low level of respondents' assessment of governance in Kabupaten Bima refers to the weak enforcement of regulations in the regions regarding the management of coastal areas and small islands, which also affect the weakness of sanctions for those who destroy coastal and small island resources, as well as integration in the management of coastal areas and small islands that are considered by the respondent has not been maximally carried out. In 2016, for example, complaints made by the community on fishing activities by fishermen who were still using fishing gear resulted in damage to aquatic ecosystems,

Which was followed up by increasing monitoring activities by the Supervisory Group, Pol Air, and the Navy to capture the perpetrators' hands. Fishers who conduct destructive activities on coastal ecosystems and small islands. In a case like this, what is usually an expert witness is from the Maritime Fisheries Service as the government executor in the field of marine, coastal and small islands in Bima Regency.

However, the perpetrators were never given criminal sanctions even in the condition of being caught with evidence in the form of bombs and fish. Even though the sanctions in the Law of the Republic of Indonesia Number 45 of 2009 Amendment to Law Number 31 Year 2004 concerning Fisheries that Everyone is prohibited from possessing, controlling, carrying, and/or using fishing equipment and/or fishing equipment that disturbs and damaging the sustainability of fish resources shall be punished with a maximum imprisonment of 5 (five) years and a maximum fine of Rp. 2,000,000,000.00 (two billion rupiah). Even after the memorandum of understanding (MoU) related to increased supervision in coastal areas and small islands between the Governor, the Regional Police Chief, the Navy, and the High Prosecutor's Office in West Nusa Tenggara Province to maximize law enforcement in coastal areas and small islands not yet able to influence respondents' assessment of law enforcement in managing coastal areas and small islands in Bima Regency.

Building Trust and Social Capital

Effective implementation of collaborative management is not only a matter of building institutions but also about building trust between stakeholders involved in

management. The aspect of faith or belief is an essential element in shaping social capital, because it is the core of social capital (a center of social capital), especially in building networks (Lin 2017). Present as a critical factor, not only in the practice of collaborative management but also in all cases as a prerequisite for collective action and social learning needed to realize good governance (Ife and Tesoriero 2008). in managing the resources of coastal areas and small islands in Bima.

Table 6. Trust and Social Capital Parameter.

No.	Parameter	Index Value	Category
1.	*Collective decision-making;*	2,89	Enough
2.	*Social learning.*	3,45	Good
N=100	*Index Average Value*	3.17	**Enough**

Source: Primary Data Processed (2017)

In general, the index values of the parameters of trust and social capital of stakeholders in the management of coastal areas and small islands in Bima Regency are 3.17 or fall into the adequate category. Not yet the maximum assessment of respondents on aspects of trust and social capital, first due to differences in perspectives and interests in management is the leading cause of weak collectivity in decision making in the Government sector in Bima Regency. Then, on the other hand, the emergence of government distrust of the resources possessed by operational level actors led to partnerships and opportunities for participation which were expected as a process of distributing power in decision making especially with coastal communities to be very tokenistic and showed only apparent cooperation, where public opinion was heard, but his ideas were not always used primarily in the implementation of the Development Plan Deliberation in the Coastal Zone of Bima Regency.

Likewise, the practice of managing the Regional Government of Bima, which has been considered weak especially in developing integrated management, has reduced the level of government social capital in governance and development, which significantly affects the behavior, feelings, and beliefs of communities, NGOs and coastal communities in supporting direction specific, especially in mobilizing and seeking management agreements. in accordance with government directives to eliminate bars in places of tourism ignored by the local community and management of tourist park parking areas that are not included in the regional treasury.

While on the aspect of social learning through the Adiwiyata program which is the flagship program of the Environment Agency, it is considered increasingly more comfortable for the government to socialize the environmental care program. Considering the experience of counseling and socialization of the environment for the general public that has been carried out so far is considered not too optimal, maximizing counseling and socialization in schools that have used environmentally sound curriculum through Adiwiyata school is viewed as an effort to instill cultural values and environmental concerns for students participatory based student.

Sustainable Development Goals (SDGs)

This section highlights the implementation of sustainable development in Bima Regency in the context of managing coastal areas and small islands [1] in the context of economic growth, social development, and environmental protection. The following is a table of values for the index of sustainable development in Bima Regency;

Table 7. Indeks Number of Sustainable Development Activity in Bima.

Indicator	Parameter	Index value	Category
Socio-economic aspects	*Redistribution of income and welfare;*	3,19	*Enough*
Environmental aspects	*Protection and rehabilitation of coastal resources and small islands.*	3,45	*Good*
	N= 100 Index Average Value 3,32		**Enough**

Source: Primary Data Processed (2017)

In general, the index value of the implementation of sustainable development in [1] the management of coastal areas and small islands in Bima Regency is 3.32 or in the sufficient category. A large number of damaged road infrastructures in coastal areas has not

only caused accessibility so difficult that it has an impact on the development of tourism in coastal areas and small islands in Bima Regency, which have been severely hampered. Whereas the number of foreign tourists coming to Bima Regency has greatly increased. Where in 2016 based on data from Bima District Tourism Office there were 4,758 visitors to tourism in coastal areas and small islands which in previous years were deserted from foreign tourist visits. So to respond to that the provision of tourism infrastructure, facilities and services, and accessibility is essential to do. Currently, lodging accommodations for domestic and foreign tourists in the tourist area of the coastal sub-district have increased. Provision of these facilities as a step to support the economic income of coastal communities.

Bima Regency has 64 coastal villages with as many as 14,201 people who are registered as fishermen but among them are also still using traditional forging boats to search for fish, which are 1,203 number of vessels, while those who have used motorboats and motorized boats are 1,317 and 1,907 units respectively. Also, there were 2,838 households with aquaculture businesses in coastal areas, but there were still high numbers of underprivileged families in the coastal regions as evidence of weaknesses in the social and economic development of communities in Bima Regency.

Table 8. Classification of the coastal area community prosperity based on subdistrict in Bima.

Subdistrict	Pre prosperous family (year)		Wealthy family (2016)
	2014	2016	
Sape	271	1841	2820
Langgudu	1548	1834	689
Lambu	693	1195	1731
Wera	2806	1126	1438
Palibeo	1561	2158	1036
Bolo	1521	1879	2870
Soromandi	1777	415	1123
Sanggar	3567	718	728
Total	13744	11166	11707

Source: Processed from the data of the Central Statistics Office in Bima (2017)

The conditions above show that the empowerment programs carried out by stakeholders have not shown significant impacts on the socio-economic improvement of

---

coastal communities so far. The People's Salt Empowerment Business Program (PUGAR) for example, every year there has been a decline in production output, which is an average of 8 percent since 2013. If stakeholders have not been able to recommend management improvements that affect the reduction in PUGAR program in Bima, such technology is still Traditionally, increasing cooperation partners of farmers who currently depend on middlemen, and uncertain prices in the harvest season will undoubtedly cause a significant decrease in salt production which will also affect the motivation and income of salt farmers in the coastal area of Bima Regency.

Whereas from the aspect of environmental protection, typical resources which are threatened in coastal areas and small islands of Bima Regency are mangrove forests. The causes of damage other than those caused by coastal communities such as the use of mangrove wood for cooking needs and the extensification of ponds, residential areas, were also due to the intervention of the capital city development plan in the southern part of Bima Regency. Where the government plans to build and extend the "runway" of Sultan Muhammad Salahuddin Airport in Bima Regency, even though there are dozens of hectares of Alam mangrove areas right around the airport. The following is the latest data on the condition of mangrove forests in the coastal city of Bima Regency and the level of damage;

Table 9. Mangrove forest condition in Bima

Year	Large mangrove area (Ha)	Still good (Ha)	Medium Damage (Ha)	Severe Damage (Ha)
2011	861,68	102.69	307,85	451,14
2013	550,8	158,79	125,07	266,95

Source: Data on the Potential of Ecosystems, Energy and Marine Resources, Coastal and Marine Resources The small islands of Bima Regency, (2014)

Based on the above data, there is a significant reduction in mangrove forest area from year to year. So that in the effort to protect and rehabilitate mangroves each sector has a different pattern of approach. The Marine and Fisheries Agency, for example, starting from data collection and identification activities on the extent of damage to the area, determining the location of rehabilitation, nursery and identify areas for the suitability of mangrove species with the city, mangrove planting activities to monitoring in coastal areas

through community empowerment approaches. Unlike the case with the approach taken by the Environment Agency that uses third parties in this case CV (Private) service utilization for the procurement of mangroves. Empowerment of community groups is intended to improve the community's perspective on the environment, which is what has intervened and damaged so that it also helps in the conservation of mangroves.

CONCLUSION

The collaborative management approach is a solution to form coastal communities groups assisted. But the partnership in the institution that was built has not been effective in improved regional management performance. In addition to the lack of coordination and cooperation, the lack of dissemination regarding regional management in coastal communities, also due to regulations in area management, where the authority to manage coastal areas and small islands is a concurrent matter between the West Nusa Tenggara Provincial Government and Bima Regency, the division of power has caused the procedure for make decisions in management becomes inefficient. So that balanced effort between social, economic and environmental development has not shown an indication in realizing sustainable development in Bima Regency. The lack of provision of socio-economic infrastructure for coastal communities has finally affected the level of fulfillment of the needs of coastal communities in sustainable resource management.

REFERENCES

Armitage, D. R., et al. (2009). "Adaptive Co-Management for Social–Ecological Complexity." Frontiers in Ecology and the Environment **7**(2): 95-102.

Armitage, D., et al. (2010). Adaptive Co-Management: Collaboration, Learning, and Multi-Level Governance, UBC Press.

Berkes, F. (2009). "Evolution of Co-Management: Role of Knowledge Generation, Bridging Organizations and Social Learning." Journal of environmental management **90**(5): 1692-1702.

Blumenthal, D. and J.-L. Jannink (2000). "A Classification of Collaborative Management Methods." Conservation Ecology **4**(2).

Borrini-Feyerabend, G. (1996). Collaborative Management of Protected Areas: Tailoring the Approach to the Context, IUCN-The World Conservation Union Gland, Switzerland.

Dahuri, R. (2003). "Paradigma Baru Pembangunan Indonesia Berbasis Kelautan Naskah Orasi Ilmiah Pengukuhan Guru Besar Tetap Ilmu Pengelolaan Sumberdaya Pesisir dan Lautan. Institut Pertanian Bogor, Bogor.

Farhan, A. and S. Lim (2014). "Assessment of Ocean and Coastal Policy Effectiveness in Seribu Islands, Indonesia." International Journal of Geoinformatics 10(3).

Fauzi, A. and A. Oxtavianus (2014). "The Measurement of Sustainable Development in Indonesia."

Ferrol-Schulte, D., et al. (2015). "Coastal Livelihood Vulnerability to Marine Resource Degradation: A Review of The Indonesian National Coastal and Marine Policy Framework." Marine Policy 52: 163-171.

Harahab, N. (2010). Penilaian ekonomi ekosistem hutan mangrove & aplikasinya dalam perencanaan wilayah pesisir, Graha Ilmu.

Hidayat, H., et al. (2011). Politik Ekologi: Pengelolaan Taman Nasional Era Otda, Yayasan Pustaka Obor Indonesia.

Ife, J. and F. Tesoriero (2008). "Community Development: Alternatif Pengembangan Masyarakat di Era Globalisasi." Yogyakarta: Pustaka Pelajar: 265.

Iskandar, Z. (2012). "Psikologi Lingkungan: Teori dan Konsep." Bandung: Refika Aditama.

Lin, N. (2017). Building a Network Theory of Social Capital. Social capital, Routledge: 3-28.

Miles, M. B., et al. (1994). Qualitative Data Analysis: An Expanded Sourcebook, sage.

Paul, S. (1987). Community Participation in Development Projects, World Bank Washington, DC.

Pomeroy, R., et al. (2010). "Ecosystem-Based Fisheries Management in Small-Scale Tropical Marine Fisheries: Emerging Models of Governance Arrangements in The Philippines." Marine Policy 34(2): 298-308.

Rachmad, D. S. K. (2012). "Sosiologi Lingkungan dan Sumber Daya Alam Perspektif Teori dan Isu-isu Mutakhir." Yogyakarta: Ar-Ruzz Media.

Robert, K. W., et al. (2005). "What is Sustainable Development? Goals, Indicators, Values, and Practice." Environment: science and policy for sustainable development 47(3): 8-21.

Sahin, S. and J. Mete (2016). "Sustainable Development: Environmental, Economical, Social Well-Being for Today and Tomorrow." Mimbar Pendidikan **1**(1).

Soerjani, M., et al. (2001). Sumber Daya Alam dan Kependudukan dalam Pembangunan, Jakarta: UI [Universitas Indonesia] Press.

Tarsito, S. (2014). "Metode Penelitian Kuantitatif, Kualitatif dan R&D." Alfabeta. Bandung.

Wuryandari, G., et al. (2015). Politik Luar Negeri Indonesia dan Isu Lingkungan Hidup, Penerbit Andi.

Management of Sustainable Coastal Areas And Small Islands Based On Collaborative Management

5% SIMILARITY INDEX

% INTERNET SOURCES

5% PUBLICATIONS

% STUDENT PAPERS

PRIMARY SOURCES

1 Nurul Huda, A.H. Asy'ari T., Yusuf Saefudin, Muhammad Bahrus Syakirin. "Strengthening Indigenous Law to Make a Sustainable Development of the Coastal Area and Small Islands in Indonesia", SHS Web of Conferences, 2018
Publication
2%

2 Helen Ross, Dedi S. Adhuri, Ali Yansyah Abdurrahim, Anna Phelan. "Opportunities in community-government cooperation to maintain marine ecosystem services in the Asia-Pacific and Oceania", Ecosystem Services, 2019
Publication
2%

3 Philip Silva, Marianne E. Krasny. "Parsing participation: models of engagement for outcomes monitoring in urban stewardship", Local Environment, 2014
Publication
1%

4 Muhammad Obie. "Fishing Settlement in Nothern Coast of Jakarta: From Intimidation to
1%

Recognition", Journal of Sustainable Development, 2018

Exclude quotes	On	Exclude matches	< 1%
Exclude bibliography	Off		