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論　文

THE DEVELOPMENT AND STRUCTURAL CHANGE OF MARINE *SASI* SYSTEM - *A TRADITIONAL RESOURCES MANAGEMENT IN CENTRAL MALUKU VILLAGES, INDONESIA*

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ABSTRACT: Marine *Sasi* plays an important role in coastal resource management as a traditional and informal system in Maluku villages, Indonesia. The existence and performance of *Sasi* system and other indigenous knowledge practices in Indonesia were widely affected by various policies issued by the government. The sustainability and functionality of *Sasi* system were weakened significantly in the 1970s due to the changes of village government system. Meanwhile, the *Sasi* system has been predicted to be recovered after the implementation of local government system reformation in 2004. This paper tries to clarify the actual condition of marine *Sasi* system in Maluku villages during three different regimes, i.e., traditional, Centralization and Decentralization regime; and also to analyze the impacts of the changes in village government system to the structure of marine *Sasi.* The number of marine *Sasi* system was declined during the Centralization Regime, but has been increasing in the Decentralization regime as it was predicted. Meanwhile the structure of marine *Sasi* system was weakened during the centralization regime, but starting to improve in the Decentralization regime. Marine *Sasi* system is important for the Maluku villages' community members, but it is fragile to the changes of village government system.

KEYWORDS: *Marine Sasi, coastal resource management, indigenous knowledge, Maluku villages-Indonesia*

1. Introduction

Sasi plays an important role in coastal resource management; it is functioning as a traditional and informal system in Maluku villages, Indonesia. The meaning of *Sasi*, literally is witness[1)] originally came from the word *saksi,* rooted from Makassar language[2)]. *Sasi* can be described as "prohibition on the harvesting of certain natural resources in an effort to protect the quality and population of those biological natural resources"[3)]. *Sasi* system has been very important for Moluccan (Maluku's community members) due to the benefits that can be perceived by its implementation, and the benefits of *Sasi* system are: (1) producing good quality product; (2) maintaining the resources remain sustainable; (3) securing the resources and avoid theft, because of the supervision by *kewang* (executor of *Sasi* system) members; and (4) avoiding social conflicts among

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the community members related to the use of natural resources.

There are two types of *Sasi* differed by the type of management body, namely *Sasi adat* (customary *Sasi*) and *Sasi gereja* (church *Sasi*)[4]. Customary *Sasi* is the original *Sasi* that has been implemented at Muslim and Christian villages for centuries, while church *Sasi* is being implemented only at some Christian villages to strengthen the customary *Sasi*. The type of Sasi system by area is differed into 4 type, (i) land *Sasi*, (*Sasi darat*); (ii) marine *Sasi* (*Sasi laut*); (iii) river *Sas*i (*sasi sungai*); and (iv) beach *Sasi* (*sasi pantai*)[5], but mostly it is differed only into two types, namely (i) (land *Sasi*); and (ii) *Sasi* laut (marine *Sasi*)[6]. Land *Sasi* has been managing land resources such as coconut, sago palm, cacao, coffee, cloves, etc. Marine *Sasi* is a unique traditional coastal resources management system with zoning in village level. Marine *Sasi* has been managing marine resources such as certain types of fishes, corals, sea sand, sea cucumber, top shell (*Trochus niloticus*) by applying the seasonal closure management method, and "so far it has been proven that resources managed by marine *Sasi* are relatively stable and in good condition compare to other traditional management systems" [7].

Meanwhile, the existence and performance of *Sasi* and other indigenous knowledge practices in Indonesia were affected by various policies issued by the Indonesian government. Nationally, at least three different regimes had ruled in the Republic of Indonesia, namely: Traditional Regime (1945 - 1966); Centralization Regime (1966 - 1998) and Decentralization Regime (1998 - at present). Each of those regimes had their own specific policies and regulations which have considerably affected the village governmental system and furthermore, the *Sasi* practices. For instances, on one hand, "the sustainability and functionality of *Sasi* were weakened significantly in the 1970s due to the changes of village government system during the Centralization regime" [8]. On the other hand, "*Sasi* has been predicted to be recovered after the implementation of local government system that is also including the village government system reformation in 2004, during the Decentralization regime" [9].

However, the impact of drastic changes of village government system to *Sasi* system, specifically to marine *Sasi* was still unclear. Therefore, we firstly aimed to clarify the actual condition of marine *Sasi* system during the traditional, Centralization and Decentralization regime by conducting the inventory of *Sasi* system in Maluku villages. Secondly, this paper also tries to analyze the impacts of the changes in village government system to the structure of marine *Sasi system*.

2. Research method

The research took place on Lease Islands (Ambon, Haruku and Saparua Islands), Central Maluku Regency, Maluku Province, Indonesia

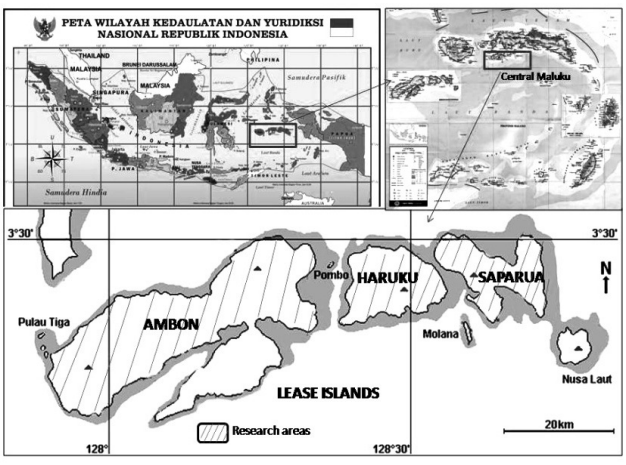

Fig. 1 The research location on Ambon, Haruku and Saparua Island

(Fig.1). Lease Islands comprises of 50 villages, and many of them were well known for its *Sasi* system. The villages on Lease Islands were built along the coastal areas and most of the community members of these villages still depend on the natural resources from the land and marine area. The research method is divided into two methods, i.e. interview and mini questionnaire method.

2.1 Interview method

The interview method was conducted to collect qualitative data of the impacts of the changes in the village government system to *Sasi* system. The interview was mainly conducted to inventory the number of *Sasi* system within 50 villages on Lease Islands and to see the development during the Traditional, Centralization and Decentralization Regimes. The research was conducted in November 2012 and October 2013.

2.2 Questionnaire method

The questionnaire method was conducted in order to quantitatively measure the impacts of the changes of the village government system to the structure of marine *Sasi* system. The mini questionnaires were circulated to 25 respondents in each village of 12 selected villages. Those 12 villages were selected due to the existence of marine *Sasi* system. The resource persons were village's government, *kewang* members, village's elders and other community members (Table 1).

2.3. Data Analyses

In order to see the changes of the structure of marine *Sasi* system in Maluku villages during the three different regimes, the respondents were expected to give the percentage points (between 0 - 100%) of each variables. Those variables are the components of the structure of marine *Sasi* system (Table 2). Those variables were selected because those are the indicators that determine whether the the marine *Sasi* system is still effectively functioning or failure.

Table 1 Composition of resource persons in 12 selected villages

No	Selected village	Village govt. officer		Kewang member		village elder		other community members	
		n	%	n	%	n	%	n	%
1	Tulehu	5	20	5	20	8	32	7	28
2	Tengah Tengah	5	20	5	20	6	24	9	36
3	Seith	5	20	3	12	7	28	10	40
4	Haruku	5	20	5	20	5	20	10	40
5	Rohomoni	5	20	5	20	5	20	10	40
6	Pelauw	7	28	3	12	7	28	8	32
7	Hulaliu	5	20	5	20	5	20	10	40
8	Siri Sori Islam	5	20	5	20	9	36	6	24
9	Paperu	5	20	5	20	7	28	8	32
10	Portho	5	20	5	20	5	20	10	40
11	Ouw	5	20	5	20	3	12	12	48
12	Tuhaha	3	12	7	28	7	28	8	32
	TOTAL	60	20	58	19	74	25	108	36

Table 2 components of structure of marine *Sasi* system

No	Variables	Regimes		
		Trad.	Cent.	Dec.
1	The role of village government in marine *Sasi* system	%	%	%
2	The role of kewang in the implementation of *Sasi* system	%	%	%
3	The surveillance and other control functions of *kewang*	%	%	%
4	The coordination between government, kewang and community members	%	%	%
5	The accessibility of the community members in harvesting the marine	%	%	%
6	The participation of community members in the implementation of marine *Sasi*	%	%	%
7	The effectiveness of the *Sasi* rules	%	%	%
8	Community members' adherence on *Sasi*	%	%	%
9	Customary law in managing resources	%	%	%
10	The condition of marine resources	%	%	%

Note: Trad. = Traditional, Cent.= Centralization, Dec.= Decentralizatic

The data set of all variables in Centralization and Decentralization regimes were tested with the Normal Distribution test and it was confirmed that the data are normally distributed (The data set of Traditional regime were not tested, because the data

are uniform). The data were also analyzed by using the one-way ANOVA (Analyses of Variance) based on the F test to compare the means of each variable

Table 3 The ANOVA of structure of marine *Sasi* system

NO	Variables		Sum of Squares	df	Mean Square	F	Sig.
1	The role of village govt.-centralization	Between Groups	411.85	3	137.28	1.526	.21
		Within Groups	26633.07	296	89.98		
		Total	27044.92	299			
2	The role of village govt.-decentralization	Between Groups	47.35	3	15.78	.198	.90
		Within Groups	23556.90	296	79.58		
		Total	23604.25	299			
3	The role of *Kewang* -cent.	Between Groups	75.27	3	25.09	.543	.65
		Within Groups	13674.73	296	46.20		
		Total	13750.00	299			
4	The role of *Kewang* -dec.	Between Groups	85.20	3	28.40	.908	.44
		Within Groups	9259.05	296	31.28		
		Total	9344.25	299			
5	Surveilance & control fucntion of *Kewang* -cent.	Between Groups	78.47	3	26.16	.175	.91
		Within Groups	44036.41	295	149.28		
		Total	44114.88	298			
6	Surveilance & control fucntion of *Kewang* -dec.	Between Groups	351.94	3	117.31	1.367	.25
		Within Groups	25404.31	296	85.83		
		Total	25756.25	299			
7	Coordination-cent.	Between Groups	36.24	3	12.08	.106	.96
		Within Groups	33751.76	296	114.03		
		Total	33788.00	299			
8	Coordination-dec.	Between Groups	197.87	3	65.96	.804	.49
		Within Groups	24277.13	296	82.02		
		Total	24475.00	299			
9	Community members'accessibility -cent.	Between Groups	237.44	3	79.15	.707	.55
		Within Groups	33157.48	296	112.02		
		Total	33394.92	299			
10	Community members'accessibility -dec.	Between Groups	125.14	3	41.71	.362	.78
		Within Groups	34134.52	296	115.32		
		Total	34259.67	299			
11	Community members'participation -cent.	Between Groups	107.98	3	35.99	.301	.82
		Within Groups	35426.94	296	119.69		
		Total	35534.92	299			
12	Community members'participation -cent.	Between Groups	183.13	3	61.04	.487	.69
		Within Groups	37137.79	296	125.47		
		Total	37320.92	299			
13	Effectiveness of *Sasi* rules-cent.	Between Groups	60.40	3	20.13	.697	.55
		Within Groups	8548.27	296	28.88		
		Total	8608.67	299			
14	Effectiveness of *Sasi* rules-dec.	Between Groups	329.32	3	109.77	3.575	.01*
		Within Groups	9088.68	296	30.71		
		Total	9418.00	299			
15	Community members' adherence-cent.	Between Groups	21.88	3	7.29	.724	.54
		Within Groups	2981.79	296	10.07		
		Total	3003.67	299			
16	Community members' adherence-dec.	Between Groups	58.41	3	19.47	2.853	.04*
		Within Groups	2020.26	296	6.83		
		Total	2078.67	299			
17	The use of customary laws-cent.	Between Groups	173.27	3	57.76	.900	.04*
		Within Groups	19000.39	296	64.19		
		Total	19173.67	299			
18	The use of customary laws-dec.	Between Groups	111.24	3	37.08	1.203	.31
		Within Groups	9123.43	296	30.82		
		Total	9234.67	299			
19	The condition of resources-cent.	Between Groups	267.72	3	89.24	.576	.63
		Within Groups	45831.94	296	154.84		
		Total	46099.67	299			
20	The condition of resources-dec.	Between Groups	460.65	3	153.55	1.721	.16
		Within Groups	26406.01	296	89.21		
		Total	26866.67	299			

note: * the mean difference is not significant (p<.05)

in each regime with the significant level at 95% (α=0.05).

Furthermore, the data were tested by using the Levine`s equality variances, with the hypotheses were as follows:

Ho: the data have equality variances (p>.5)

H1: the data have no equality variances (p<.5)

The ANOVA verified that mostly the components of structure of marine *Sasi* system have significant means differences (Table 3) except for some variables, i.e., the effectiveness of *Sasi* rules during the Decentralization regime, the use of customary law during the Decentralization regime, and community members' adherence during the Centralization regime. Furthermore, the Levine's equality variances test verified that most of the components of structure of marine *Sasi* system have equality variances except the community members' adherence both during the Centralization and Decentralization Regime.

Table 4 The Equality variance test of structure of marine *Sasi* system

No	Variable	Levene Statistic	df1	df2	Sig.
1	The role of village govt.-centralization	1.494	3	296	.216
2	The role of village govt.-decentralization	.895	3	296	.444
3	The role of *kewang* -cent.	.144	3	296	.933
4	The role of *kewang* -dec.	.728	3	296	.536
5	Surveilance & control fucntion of *kewang*-	1.082	3	295	.357
6	Surveilance & control fucntion of *kewang* -	1.124	3	296	.339
7	Coordination-cent.	5.399	3	296	0.001*
8	Coordination-dec.	1.362	3	296	.255
9	Community members'accessibility-cent.	.258	3	296	.855
10	Community members'accessibility-dec.	.449	3	296	.718
11	Community members'participation-cent.	2.289	3	296	.079
12	Community members'participation-cent.	1.437	3	296	.232
13	Effectiveness of *Sasi* rules-cent.	1.026	3	296	.381
14	Effectiveness of *Sasi* rules-dec.	1.292	3	296	.277
15	Community members' adherence-cent.	5.024	3	296	0.002*
16	Community members' adherence-dec.	5.201	3	296	0.002*
17	The use of customary laws-cent.	.577	3	296	.631
18	The use of customary laws-dec.	1.112	3	296	.344
19	The condition of resources-cent.	1.224	3	296	.301
20	The condition of resources-dec.	1.023	3	296	.383

note: *don't have equality variances

3. Actual condition of marine *Sasi* during three different regimes

One of the key findings of the interview is the inventory data of *Sasi* system in 50 Maluku villages on Ambon, Haruku and Saparua Islands (Table 5). During the traditional regime, land *Sasi* system existed in 48 villages and marine *Sasi* system existed in 29 villages. During the Centralization regime only 38 villages were implementing the land *Sasi* and

16 out of those villages were also implementing marine *Sasi* system. In the Decentralization regime, the number of land *Sasi* system has remained stable, while the number of villages that still implementing marine *Sasi* system has been slightly increasing into 19 villages. It has been increasing because some villages such as Tuhaha and Ouw on Saparua Island, and Hulaliu village on Haruku Island restored the marine *Sasi* system at their villages.

Table 5 The development of *Sasi* system in 50 Maluku Villages in three regimes

No	Name of village	Island	Land Sasi Existence			Resources	Marine Sasi Existence			Resources
			tra	cen	dec		tra	cen	dec	
1	Liang	Ambon	1	1	1	coconut, sago palm	1	0	0	-
2	Suli	Ambon	1	1	1	coconut, sago palm	0	0	0	-
3	Tengah Tengah	Ambon	1	1	1	coconut, clove, nutmeg	1	1	1	top shell, sea cucumber, corals, sands
4	Tial	Ambon	1	1	1	coconut, clove, nutmeg	1	0	0	-
5	Waai	Ambon	1	0	0	-	1	0	0	-
6	Tulehu	Ambon	1	1	1	coconut	1	1	1	baelama anchovy, corals, sands
7	Wakal	Ambon	1	0	0	-	0	0	0	-
8	Hila	Ambon	1	0	0	-	0	0	0	-
9	Seith	Ambon	1	1	1	coconut, sago palm, clove	1	1	1	all species in *sasi* area, fishing regulations
10	Mamala	Ambon	1	1	1	coconut, sago palm, clove	0	0	0	-
11	Ureng	Ambon	1	1	1	coconut, sago palm	0	0	0	-
12	Negeri Lima	Ambon	1	1	1	coconut, sago palm	0	0	0	-
13	Hitulama	Ambon	1	1	1	coconut, sago palm, clove	0	0	0	-
14	Hitumesing	Ambon	1	1	1	coconut, sago palm, clove	0	0	0	-
15	Morella	Ambon	1	1	1	coconut, sago palm, clove	1	1	1	top shell, sea cucumber, corals
16	Kaitetu	Ambon	1	0	0	-	0	0	0	-
17	Asilulu	Ambon	1	0	0	-	0	0	0	-
18	Alang	Ambon	1	1	1	coconut	1	0	0	-
19	Larike	Ambon	0	0	0	-	0	0	0	-
20	Wakasihu	Ambon	1	1	1	coconut, sago palm	1	0	0	-
21	Liliboi	Ambon	1	1	1	coconut	0	0	0	-
22	Hatu	Ambon	1	1	1	coconut	0	0	0	-
23	Haruku	Haruku	1	1	1	coconut, sago palm	1	1	1	baelama anchovy, corals, sands, fishing regulations
24	Aboru	Haruku	1	0	0	-	1	0	0	-
25	Kabau	Haruku	1	1	1	coconut, sago palm	1	1	1	baelama anchovy, top shell, coral fishes
26	Kailolo	Haruku	1	0	0	-	1	0	0	-
27	Kariuw	Haruku	1	1	1	coconut, sago palm	0	0	0	-
28	Oma	Haruku	1	1	1	coconut, sago palm	0	0	0	-
29	Pelauw	Haruku	1	1	1	coconut, sago palm	1	1	1	top shell, sea cucumber, fishing regulations
30	Rohomoni	Haruku	1	1	1	coconut, sago palm	1	1	1	baelama anchovy, corals, sands
31	Sameth	Haruku	1	1	1	coconut, sago palm	1	0	1	top shell, sea cucumber
32	Wassu	Haruku	1	1	1	coconut, sago palm	0	0	0	-
33	Hulaliu	Haruku	1	1	1	coconut, sago palm	1	0	1	top shell, sea cucumber, corals
34	Saparua	Saparua	1	0	0	-	1	0	0	-
35	Tiouw	Saparua	1	0	0	-	1	0	0	-
36	Haria	Saparua	1	1	1	coconut, clove, nutmeg	1	1	1	top shell, sea cucumber, mangrove, corals
37	Porto	Saparua	1	1	1	coconut, clove, nutmeg	1	1	1	top shell, sea cucumber, mangrove, coral fishes
38	Paperu	Saparua	1	1	1	coconut, clove, nutmeg	1	1	1	top shell, sea cucumber, coral reef fishes, corals
39	Booy	Saparua	0	0	0	-	0	0	0	-
40	Siri Sori Amala	Saparua	1	1	1	coconut, nutmeg	0	0	0	-
41	Siri Sori Islam	Saparua	1	1	1	coconut, clove, nutmeg	1	1	1	top shell, sea cucumber, lobster, corals
42	Ulath	Saparua	1	1	1	coconut, clove, nutmeg	0	0	0	-
43	Ouw	Saparua	1	1	1	coconut, clove, nutmeg	1	1	1	top shell, sea cucumber, lobster, corals
44	Tuhaha	Saparua	1	1	1	coconut, clove, nutmeg	1	0	1	top shell, sea cucumber, corals, ornamental fishes
45	Ihamahu	Saparua	1	1	1	coconut, clove, nutmeg	1	1	1	top shell, sea cucumber, giant clam, corals
46	Nolloth	Saparua	1	1	1	coconut, clove, nutmeg	1	1	1	top shell, sea cucumber, corals
47	Itawaka	Saparua	1	1	1	coconut, clove, nutmeg	1	1	1	top shell, sea cucumber, corals
48	Dusun Mahu	Saparua	1	1	1	coconut, clove, nutmeg	0	0	0	-
49	Dusun Pia	Saparua	1	1	1	coconut, clove, nutmeg	0	0	0	-
50	Kulur	Saparua	1	0	0	-	1	0	0	-
	TOTAL		48	38	38	TOTAL	29	16	19	

note: tra=during the traditional regime; cen=during centralization regime; dec=during decentralization regime

Source: inventory through the interview

Sasi system was one of the traditional resources management systems in Maluku villages that suffered by the changes on village government system. *Sasi* system has been managed traditionally by the traditional village government, far before the Maluku areas proclaimed to join the Republic of Indonesia. The Centralization regime in 1970s decided to change the village government system in order to homogenize the government system to further facilitate the administration and coordination between central and local government. The new system was adapted from Java villages' government system, which was very foreign for the Maluku community members. Since the traditional village government system had changed, there was no legal institution managing the *Sasi* system, therefore it was weakened and the number had been decreased. However, in 2004s, the Decentralization Regime reformed the Centralize Government system into the Local Government system, which is soon followed by the Maluku Province Government to issue the regulation in order to return to implement the traditional village government system. With this change, the role of traditional village in managing *Sasi* system has been gradually recovering.

4. The impacts of the changes of social system to the structure of marine *Sasi*

Sasi system became the identity and pride of Moluccan that differ them from other community members because it is a product of the cultures inherited from the ancestors. One of the characteristics of indigenous people in rural areas is usually they live very religiously and in harmony with respect in honoring the spirits of their ancestors. However, the national policies had changed their original identities, culture and indigenous knowledge system. As it was predicted, many things had changed specifically after the changes on the village government system that had been applied for centuries and replaced by the system that was a foreign for them. The impact of the changes of village government system can be seen by the changes on the structure of marine *Sasi* system as follows:

4.1 The role of village government

The Moluccan believed that the role of traditional village government in the implementation of *Sasi* was excellent. The main role of the traditional village government especially *Raja* (the village leader) was altogether with *Saniri negeri* (village consultative body) was to established the *Kewang* institution as an element in traditional village structure which was in charge in managing the use of village's natural resources and establishing *Sasi* system. However, the role of village government system from traditional, Centralization and Decentralization has experienced fluctuating changes (Fig. 2). The role of village government dropped drastically during Decentralization regime from 100% into 73.53% (with standard deviation ±9.51).

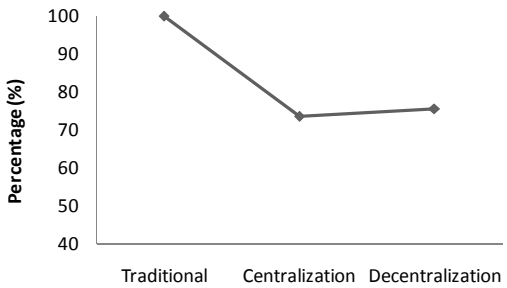

Fig. 2 The role of village government in *Sasi* system during three regimes
(Source: mini questionnaire)

There were political problems at many villages regarding to the changes of their village government system as well as the selection method to choose the village leader. Traditionally, *Raja* was chosen by lineage, not by the election, but the new government system constrained choosing the village leader by election. Many former *Raja*s were losing their roles in governing the village, including their role in the implementation of marine *Sasi* system. Sasi system can be managed only by the traditional system, because the new system didn't accommodate *Sasi* system. On the other hand, during the Decentralization, the role of local knowledge has been slightly increasing into 75.62% (±8.89), because during this time, the leadership in village has been given back to *Raja*. The role of village government during this regime has been very important on the re-establishment of *kewang* institution to manage *Sasi* system at the village that has been believed as a good start to continue maintaining the local culture and indigenous knowledge as well as their natural resources.

4.2 The role and authority of *Kewang* institution

The main authority of *Kewang* were to determine what kind of resources to be managed and when was the right time to open the area for harvesting, the allowable size of certain resources to be harvested, setting the *Sasi* rules, etc. The role of *Kewang* in three regimes has also experience fluctuating changes (Fig. 3).

During the Centralization regime, like *Raja*,

Kewang was also eliminated from the village's system. The role of *Kewang* was no longer strong because it was out of the system, and it was declined into 71.03% (±6.78). The role of *Kewang* institution was not suddenly vanished because at that time some volunteers were willing to keep their position as *Kewang* members even without legal recognition from the government.

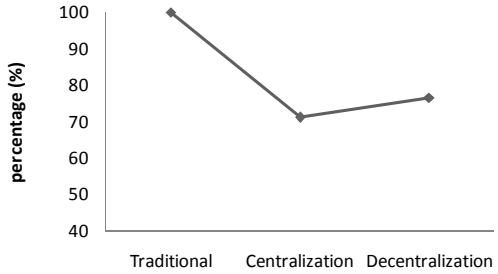

Fig. 3 The role of *Kewang* institution in *Sasi* system during three regimes
(Source: mini questionnaire)

During the Decentralization regime, *kewang* institution has been re-established as customary institution. However, even though currently the role of *Kewang* institution has been slightly increasing into 76.45% (±5.59). Currently the *Kewang* institution is trying hard to manage the village's resources to keep it sustain and give benefits for the community members.

4.3 The Surveillance function and *Sasi* rules enforcement by *Kewang*

Since the role and authority of *Kewang* had changed, so had the surveillance function and *Sasi* rules enforcement by *Kewang* (Fig. 4). The surveillance function and *Sasi* enforcement by *kewang* institution was declined into 65.18% (±12.17), due to the status quo of *kewang* and that led to the weakness of *kewang*'s function. Some villages finally succeed in recruiting community members to become *Kewang* members after the political chaos at some villages had already solved.

After the re-establishment of *Kewang* institution during the Decentralization regime, *Kewang* function including the surveillance over the use of marine resources at marine area has been slightly increasing into 72.25% (±9.28).

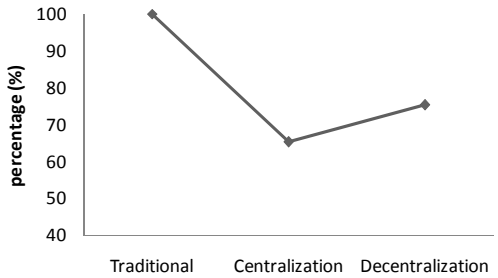

Fig. 4 The Surveillance function and *Sasi* rules enforcement by *Kewang*
(Source: mini questionnaire)

4.4 The use of customary laws in the implementation of *Sasi* system

Customary law is a traditional common rule or regulation or norms that arisen in a society that has been widely implemented and it has been accepted by that society, but has not legalized as a national law. Customary law is not only closely related with the norms and rules in the society but also with the customary rights over the property on lands and coastal (marine) areas that had been recognized and approved by other adjacent indigenous people. Before the Centralization regime, the use of customary law was highly recognized by the Indonesian government. The Indonesian government issued the National Law No 5/1960 Chapter 1, article 5 on "Principal Agrarian Law" which stated that "The law that applies on the land, waters and space is the customary law as long as not contrary with the national interest, which is based on the unity of the

nation and other laws and regulations that respect the religion- based law".

The used of customary law in implementing the *Sasi* system has been changed (Fig. 5). During the Centralization regime, the use of customary law was declined 75.27% (±8.01). Centralization policy allowed the central government to manage the use of natural resources in many areas including within the village level that previously had been managed wisely by the indigenous knowledge. Central government had taken away the customary rights of Maluku villages' community members and violated the customary law. Meanwhile, during the Decentralization the use of customary law has been slightly improved into 75.47% (±5.56). The government of Maluku Province has given the authority to every village to govern their villages based on their local culture and customary law, but the use of customary laws has not been completely recovered. Until now there has no legal and official recognition from the Indonesian government in the term of the use of customary laws in managing the resources.

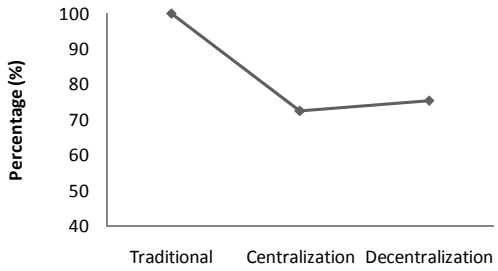

Fig. 5 The use of customary laws in *Sasi* system's implementation
(Source: mini questionnaire)

4.5 Community members' participation in the implementation of marine *Sasi*

In Maluku villages, even though *Kewang* institution had the authority to make any decision regarding to the implementation of *Sasi* system, but in order to produce the best decision that reflects the wish of the entire community members, *Kewang* gave the opportunity to the all community members through their clans' leaders to deliver suggestions and advices during the decision making. Community members were also expected to actively participate in every ceremony and the ritual of *Sasi*. However, during the Centralization regime, the participating rate of the community members was declined for into 46.00% (±10.90) (Fig.6), because during this time, the "new" village government's decisions were based on the orders by the central government that was delegated through the local government, no longer based on the wish of its community members. Moreover, the absence of traditional leaders led to the lack of *Sasi* system's activities including the rituals and ceremonies. The active participation of the community members has been increasing into 66.75% (±11.71) since the re-establishment of *Kewang* institution during the Decentralization regime. Since the implementation of *Sasi* system has been improving, many ceremonies and rituals regarding to the implementation of *Sasi* that have been held back in the villages.

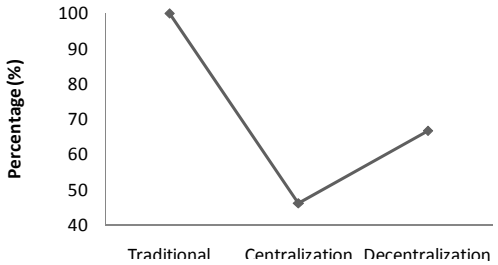

Fig. 6 The community member's participation in *Sasi* system's implementation
(Source: mini questionnaire)

4.6 The community members' accessibility to harvest the marine resources

Before the Centralization regime, every com-

munity member had the same right and was allowed to harvest marine resources during the open of marine *Sasi* area. Marine *Sasi* area usually opens in April or May every year, and the mass harvest by community members was allowed with certain conditions, such as: harvesting the resources with specific size only without using harmful and non-ecosystem friendly gears, and limitations on quantity. The access to use the marine resources from marine *Sasi* area during the Centralization regime was declined into 57.87% (±10.57) and slightly increasing into 67.88% (±10.70) during the Decentralization regime (Fig. 7).

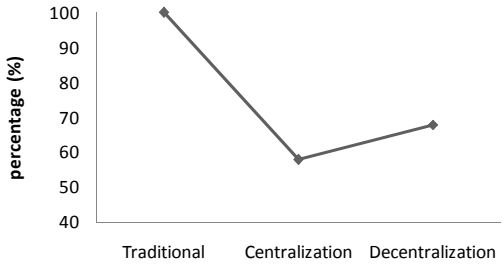

Fig. 7 The community member's accessibility to harvest the resources in Marine *Sasi* area (Source: mini questionnaire)

During the Centralization regime, many village governments started to introduce the auction system to replace the mass harvest. Only the auction winner was able to harvest marine resources during the open of marine *Sasi* area. Even though every community members were allowed to join the auction, but in fact, the auction process and the use of money generated from the auction were not transparent. Many community members were unsatisfied and they also assumed that their rights in accessing marine resources had been shackled.

During the Decentralization regime, *Kewang* institution and village leader tried to re-manage the harvesting system during the open season of marine *Sasi* area. Community members have been allowed to join the auction system with more transparent in every auction process. Every community members have been able to witness the auction process and the result can be access easily at the village office or at the *baileo* (village's hall). The money generated from the auction has been used for the public purposes such as to construct the village's hall, re-construct the church or mosque, to build the footpath, etc., therefore the benefit of the auction can be perceived by the entire community members. With the improvement of the current auction process that is more fair and transparent, every community member has the same chances to access the resources when they win the auction.

4.7 Coordination between village government, *kewang* institution and community members regarding to the implementation of *Sasi* system

In the early Centralization regime, the chaos on village' political situation brought the damage to the good coordination and cooperation that has been nurtured for long time. The election system in selecting the village leader caused some friction among the community members. Therefore, due to the internal conflicts among the community members and other elements, the coordination among

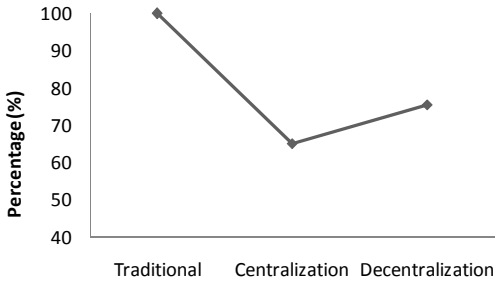

Fig. 8 Coordination among the community members, *Kewang* and government (Source: mini questionnaire)

them in the implementation of *Sasi* was declined 65.20% (±10.63) (Fig. 8).

In the Decentralization regime it has been improving into 76.20% (±5.61) after the political situation has been able to be solved. The success story of some villages in recruiting some of community members to become *kewang* members, and followed by the re-establishment of *Kewang* institution during the Decentralization regime, indicated the coordination between village's elements has been improving.

4.8 The effectiveness of marine *Sasi* rules

Sasi rules are not only regulating the resources management, but also contain the social norms. The effectiveness of *Sasi* rules during the Centralization regime was declined into 52.37% (±5.37) (Fig. 9). *Sasi* rules were never extinct from the villages, those rules are always there but the enforcement was weakened and less effective. Fortunately, during the Decentralization regime, the effectiveness of *Sasi* rules has been increasing into 76.20% (±5.6). The effectiveness of *Sasi* rules has been increasing in accordance with the improvement of *Sasi* enforcement by *kewang* institution.

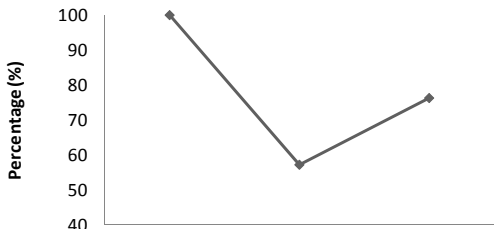

Fig. 9 the effectiveness of marine *Sasi* rules
(Source: mini questionnaire)

4.9 The community members' adherence to the marine *Sasi* rules

During the Centralization regime, the adherence level of community member was slightly decreased into 80.57% (±3.17) (Fig 10) and improving into 88.73% (±2.64). The community members' adherence in all regimes has been relatively high because *Sasi* rules are closely related with the religious rules and mystics[10], therefore the community members are highly adhere and respect all the *Sasi* rules. Some violations to the *Sasi* rules mostly happened during the political chaos in the Centralization regime.

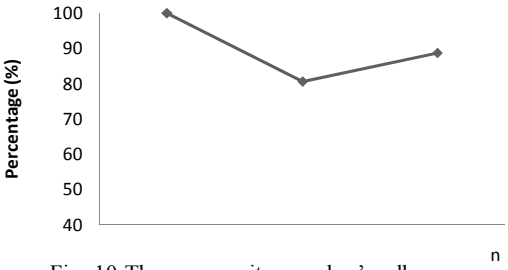

Fig. 10 The community member's adherence to the *Sasi* rules
(Source: mini questionnaire)

4.10 Condition of resources

Seasonal closure and fishing method on harvesting some marine resources such as top shell, sea cucumbers, groupers, and other coral fishes, has been very important to give the opportunity for those resources to reproduce and grow into allowable size to be harvested.

After the changes on village government system by the Centralization regime, *Sasi* system was weakened and during the status quo, many violations on the marine *Sasi* rules including the illegal fishing at the marine *Sasi* areas. In addition, marine *Sasi* areas were opened every year to be exploited by the auction winner. The auction winner had the right to harvest certain resources only as it was agreed during the auction process, but there was no size limitation at that time, any size of resources can

be harvested within a week.

During the Centralization regime, the community members believed that marine resources that have been managed by *Sasi* were declined into 55.03% (±12.42) (Fig. 11). During the Decentralization regime, the enforcement of *Sasi* rules and surveillance function over marine resources by *Kewang* has been improving and the management system of marine *Sasi* has also becoming better. Currently, in order to give the opportunity for the resources to grow and reproduce optimally, the marine *Sasi* areas such as at Siri Sori Islam and Nolloth villages are open the marine *Sasi* area every three years and the harvest period is only allowed within a week. Some villages such as Tulehu, Tengah Tengah, and Seith are banning the fishing activities at their marine *Sasi* areas and those areas have not been opened for more than 5 years. The community members believe that the condition of resources has been improving into 70.33% (±9.48) during the Decentralization regime.

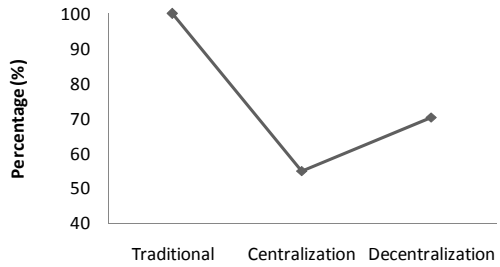

Fig. 11 The condition of resources

(Source: mini questionnaire)

Some scientific research on the top shell on Saparua Island reported that the population density of top shell on Saparua Island in 2006 was only 620 ind/ha [11], and in 2010 was increased rapidly into 9,786 ind/ha and dominated by the top shell with the size 66-74mm[12]. Those scientific reports are proven that the improvement of marine Sasi system give a good impact for the marine resources sustainability.

5. Conclusion

Based on the findings of the study, the changes on village government system have affected the existence and the implementation of marine *Sasi* system. The number of marine *Sasi* system was declined during the Centralization regime, and has been slightly increasing during the Decentralization regime. During the traditional regime, marine *Sasi* was implemented in 29 villages and declined into 16 villages during the Centralization regime, and recently as it was predicted that marine *Sasi* system has been slightly increasing during the Decentralization regime which is implemented at 19 villages.

Moreover, the changes of village government system have also significantly affected the structure of marine *Sasi* system. During the Centralization regime the marine *Sasi* structures were weakened, and in contrary during Decentralization regime marine *Sasi* structures have been slightly improving.

However, as one of the intellectual properties, marine *Sasi* system and other indigenous knowledge supposed to be protected and legalized by the legal framework or national law in order to keep it sustain, specifically to give guarantee that the local people will be able to manage the use of resources in their customary properties. The government involvement is also expected in order to strengthen the function of *Sasi* system in managing the sustainability of the natural resources. The government is expected to issue the enactment regarding to the legal status of customary communities to manage the natural resources on their customary properties.

The establishment of co-management system is worth to try, because without the support from the government, *Sasi* system will always be fragile to the changes, specifically on village government

system. The impact of the changes in village government system could affect the community members' view in the implementation of marine *Sasi.* Therefore, the next study is going to explore the community members' point of view regarding to the implementation of marine *Sasi* system.

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Author introduction

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伝統的な沿岸域資源管理としてのサシの展開と構造変化
－インドネシアの中央マルク地方を対象として－

Awwaluddin・妻　小波・陳放

要旨：サシは、「共有」を前提とした地域資源を管理するローカルルールで、インドネシアのマルク地方では自然資源の伝統的な社会制度として機能してきた。「海洋サシ」は、インドネシアにおいてコミュニティーレベルのゾーニングを有する特異な沿岸域の水産資源管理システムであり、他の地域の伝統的な管理システムに比べ、管理対象資源の状況は良好で安定している。しかし、「海洋サシ」の持続性と機能性はインドネシア政府の政策によってさまざまな影響を受けてきた。社会システムのドラスティックな変化を受けて、サシ制度は大きな変化を余儀なくさせられているが、「海洋サシ」を始めその実態は必ずしも明らかにされてはいない。そこで、本稿では、中央マルク地方の中央集権時代から地方分権時代に変化する過程のサシの実態を把握するとともに、社会体制の変化が「海洋サシ」の制度構造に与える影響を明らかにした。その結果、村行政における政策の中央集権体制への変化は、「海洋サシ」の減少を引き起こすだけではなく、その仕組みも弱めることとなった。しかしながら、レビューによれば地方分権時代に変化する過程で海洋サシの復元を予想したものがあり、本稿の結果はそれを裏付けるものであった。
キーワード：海洋サシ，インドネシアのマルク地方、伝統的な資源管理システム