

Improving Students and Community Participation in Preserving Mangrove Forest Bangkala Jeneponto South Sulawesi with a Constructivism based Booklet

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ABSTRACT

Knowledge dominantly affects community attitudes and participation in mangrove forest conservation. One of the effective ways to solve issues related to preserving mangrove forest in Jeneponto regency is to distribute a constructivism based booklet which introduces the functions, impacts, and management of the forest. This study was conducted in Bangkala District, Jeneponto regency, South Sulawesi from 11 August 2016 to 25 December 2016. Purposive sampling was employed to determine the research sample based on certain consideration. Data was collected using: (1) a questionnaire to elicit responses from some students and community members in Bangkala Jeneponto South Sulawesi towards a booklet developed on the constructivist theory; (2) another questionnaire and interview schedule to obtain community perception on the forest conservation activities; (3) socialization activities at schools and community centers related to the importance of sustainable mangrove forest development. Research findings indicate that: (1) the students and the community members of Bangkala, Jeneponto, South Sulawesi have provided positive and supportive responses towards the development of the constructivism booklet; (2) the society members have realized the significance of mangrove forest development; (3) overall, the students and the community members in Bangkala, Jeneponto, South Sulawesi have been highly involved in preserving the mangrove forest. Assistance to sustain this participation; however, is still necessary.

Keywords: Booklet, Mangrove Conservation, Students, Participation, Community.

INTRODUCTION

Many mangrove forests have been intentionally converted for aquaculture, agriculture, and settlement areas. This conversion exists due to weak law enforcement and low society awareness of the coastal environment. According to a report written by Pramudji (2001; 2002; 2003), that condition can be found in the coastal areas of East Borneo, Sumbawa, South Sulawesi, and along the north coast of Java island and East Java.

A study conducted by Hartati and Harudu (2016) shows that human activities are one of the factors that contribute to deforestation in Lowu-Lowu. Those activities include aquaculture and illegal logging. Humans cut down forest vegetation and collect it for firewood and building materials. In addition to that, the society members have limited knowledge of whether mangrove forest is still in good

condition or not. As a result, people are unaware of the existence of forest rehabilitation projects. Notoatmojo (1997) states that knowledge reflects community attitudes. Adequate knowledge accommodates rational behaviour and attitudes, especially towards mangrove forest management.

The mangrove forests conversion has also occurred in Bangkala, Jeneponto, South Sulawesi. The increasing demand for salt in the dry season is one of the reasons why the farmers in the area developed its aquaculture widely (Amin *et al.*, 2016). This can also be a result of community lack of awareness of the mangrove forests importance to the environment (Bachtiar, 2014). Knowledge dominantly affects the community attitudes and participation in mangrove forests preservation (Sari, 1999; Syaban, 2007; Hardianti, 2014). The result of a research conducted on community

basic knowledge of mangrove forests in Bangkala, Jeneponto, South Sulawesi, in fact, indicates that 40,26% of the society members have very low awareness of mangrove forests, 37,66% have low awareness, 18,18% have enough knowledge, and only 3,90% have high awareness of mangrove forests preservation (Amin *et al.*, 2016). Therefore, it is necessary to promote the community awareness of the mangrove forests functions and conservation.

Mangrove forests serve both ecological and economic functions (Pardede, 2013), either to the local, regional, or global community. Thus, they need to be managed and preserved well. According to Alimuna, *et al* (2016), some strategies that can be applied in managing the mangrove forests include: 1) mapping of zones determination; 2) planning a mangrove forests conservation activity; 3) rehabilitating the forests by planting seeds together with the community and government; 4) forests patrolling; 5) improving the community welfare; and 6) sharing knowledge of the functions, benefits, and preservation of the mangrove forests with the society members.

According to Pramuji (2004), a feasible program to manage and rehabilitate mangrove is to develop human resources through training and schooling. Jeneponto regency has attempted to do the socialization of mangrove forests' functions, impact, and management with a constructivism based booklet. Booklet or brochure is a written material containing information related to an issue (Satmoko and Harini, 2006). The booklet provides information related to mangrove forests and techniques to rehabilitate the forests. It is designed to be attractive and understandable for students. The constructivists argue that to acquire knowledge someone needs to reconstruct his/her existing cognitive structure and adjust it with new information in order that new knowledge can be adapted. The distribution of the constructivism based

booklet is expected to improve learners' awareness of the importance of the mangrove forests. Hopefully, future generation can recognize the characteristics of mangrove forests destruction and get involved in socializing the information with their family members and people around.

Based on the explanation above, research questions can be formulated into (1) How do learners and community in Bangkala, Jeneponto, South Sulawesi react towards the constructivism based booklet? (2) What is the community perception on the mangrove forests conservation? (3) How do learners and community participate in preserving mangrove forests in Bangkala, Jeneponto, South Sulawesi?

RESEARCH METHOD

This research was conducted in Bangkala, Jeneponto, South Sulawesi Selatan from August 11, 2016, to December 25, 2016. Respondents were selected using *purposive sampling* technique which determined research samples with a certain consideration. The number of the respondents was decided using a formula suggested by *Slovin* (Kusmayadi and Endar, 2000). Around 150 students who participated in this research came from Public Junior High School No.3 (SMP Negeri 3) and Public Senior High School No.7 (SMA Negeri 7) in Bangkala, Jeneponto. Meanwhile, the number of community members involved in this research was 75 people.

Data was collected using: (1) a questionnaire to elicit responses from some students and community members in Bangkala Jeneponto South Sulawesi towards a booklet developed on the constructivist theory; (2) another questionnaire and interview schedule to obtain community perception on the forest conservation activities; (3) socialization activities at schools and community centers related to the importance of sustainable mangrove forest development. The booklet used in this study had been validated by two environment experts. According to Umar

(2005), the average scores of community perception on mangrove forests' destruction, management, and preservation

cover strongly disagree (1,00-1,8); disagree (1,8-2,6); uncertain (2,6-3,4); agree (3,4-4,2); strongly agree (4,2-5,00).

RESEARCH FINDINGS

1. Students and Community Responses Towards the Constructivism Based Booklet

The following table describes SMP Negeri 3 students' responses towards the constructivism based booklet.

Table 1. Recapitulation of Data of SMP Negeri 3 students' responses towards the constructivism based booklet.

No	Question Items	Responses	Respondents	Percentages
1	How do you understand the development of a booklet with mangrove forests theme?	a. Very good	21	28
		b. Quite good	35	46,67
		c. Not good enough	19	25,33
		d. Very bad	0	0
2	Are you interested in reading a booklet on mangrove forests theme?	a. Very interested	38	50,67
		b. Quite interested	25	33,33
		c. Not really interested	12	16
		d. Not interested at all	0	0
3	How do you respond to the development of a booklet with mangrove forests theme?	a. Supportive	74	98,67
		b. Not supportive	1	1,33
4	Does the booklet present materials and application of concepts related to mangrove forests conservation?	a. Very good	29	38,67
		b. Good	26	34,67
		c. Quite Good	20	26,67
		d. Not good enough	0	0
		e. Very bad	0	0
5	Does the booklet provide information about mangrove forests conservation and management?	a. Yes	72	96
		b. Not sure	3	4
		c. No	0	0
6	Does the booklet improve your motivation to preserve and manage mangrove forests?	a. Yes	71	94,67
		b. Not sure	4	5,33
		c. No	0	0

The following table presents SMA Negeri 7 students' responses towards the constructivism based booklet.

Table 2. Recapitulation of Data of SMA Negeri 7 students' responses towards the constructivism based booklet.

No	Question Items	Responses	Respondents	Percentages
1	How do you understand the development of a booklet with mangrove forests theme?	a. Very good	52	69,33
		b. Good	23	30,67
		c. Quite Good	0	0
		d. Not good enough	0	0
		e. Very bad	0	0

2	Are you interested in reading a booklet on mangrove forests theme?	a. Very interested	44	58,67
		b. Interested	31	41,33
		c. Quite Interested	0	0
		d. Less Interested	0	0
		e. Not Interested	0	0
3	How do you respond to the development of a booklet with mangrove forests theme?	a. Supportive	75	100
		b. Not Supportive	0	0
4	Does the booklet present materials and application of concepts related to mangrove forests conservation?	a. Very Good	45	60
		b. Good	25	33,33
		c. Quite Good	5	6,67
		d. Not good enough	0	0
		e. Very bad	0	0
5	Does the booklet provide information about mangrove forests conservation and management?	a. Yes	73	97,33
		b. Not sure	2	2,67
		c. No	0	0
6	Does the booklet improve your motivation to preserve and manage mangrove forests?	a. Yes	75	100
		b. Not Sure	0	0
		c. No	0	0

The following table shows responses provided by community members in Bangkala, Jeneponto towards the constructivism based booklet.

Table 3. Recapitulation of Data of Community responses towards the constructivism based booklet.

No	Question Items	Responses	Respondents	Percentages
1	How do you understand the development of a booklet with mangrove forests theme?	a. Very good	27	36
		b. Good	39	52
		c. Quite Good	9	12
		d. Not good enough	0	0
		e. Very bad	0	0
2	Are you interested in reading a booklet on mangrove forests theme?	a. Very interested	21	28
		b. Interested	35	46,67
		c. Quite Interested	19	25,33
		d. Less Interested	0	0
		e. Not Interested	0	0
3	How do you respond to the development of a booklet with mangrove forests theme?	a. Supportive	75	100
		b. Not Supportive	0	0
4	Does the booklet present materials and application of concepts related to mangrove forests conservation?	a. Very Good	55	73,33
		b. Good	20	26,67
		c. Quite Good	0	0
		d. Not good enough	0	0
		e. Very bad	0	0
5	Does the booklet provide information about mangrove forests conservation and management?	a. Yes	65	86,67
		b. Not sure	10	13,33
		c. No	0	0
6	Does the booklet improve your motivation to preserve and manage mangrove forests?	a. Yes	72	96
		b. Not Sure	3	4
		c. No	0	0

Based on the data recapitulation, it can be concluded that the students and the community provided positive responses and were supportive of the development of a constructivism based booklet.

2. Community Perception on The Attempts to Preserve Mangrove Forests in Bangkala, Jeneponto South Sulawesi

Following is the data recapitulation of community perception on the attempts of forests conservation in Bangkala, Jeneponto, South Sulawesi.

Table 4. Community Perception of the Damage, Management, and Conservation of Mangrove Forests in Bangkala, Jeneponto, South Sulawesi

No	Community perception	Average Score	Note
P1	Mangrove forests are damaged due to the increasing number of salt pond land openings.	4,55	Strongly agree
P2	Mangrove forests are damaged due to the increasing number of fish farm pond openings.	3,67	Agree
P3	Mangrove forests are damaged by the irresponsible humans.	4,63	Strongly agree
P4	Mangrove forests are damaged by the environment forces (waves, wind).	3,57	Agree
P5	Mangrove forests damage results in beach abrasion.	3,59	Agree
P6	Mangrove forests damage affects the community welfare.	4,15	Agree
P7	Mangrove forests damage affects ecological aspects.	4,45	Strongly agree
P8	Mangrove forests need to be preserved as mutual wealth.	4,45	Strongly agree
P9	Mangrove forests need to be managed well in order to keep it preserved.	4,80	Strongly agree
P10	It is necessary to do socialization related to the way to preserve mangrove forests.	4,68	Strongly agree
P11	It is necessary to establish a law related to mangrove forests management and conservation.	4,51	Strongly agree
P12	Violation of the law must be followed up by giving sanctions or punishment.	4,33	Strongly agree
P13	Local people need to be involved in mangrove forests management.	3,87	Agree
P11	The management and conservation of the mangrove forests do not have to be aligned with local wisdom (local culture/custom)	3,03	Not sure
P12	The mangrove forests management will prevent local people from utilizing the forests or resources found in them.	2,48	Disagree
P13	Only some particular people will get the benefits from the mangrove forests management.	2,52	Disagree
P14	The migrant community does not need to obey the law related to mangrove forests management and conservation.	3,00	Not sure
P15	High school and university students' involvement plays a significant role in sustaining mangrove forests.	4,07	Agree

The results of the data recapitulation presented in the table indicate that people who live in the coastal area started to realize the importance of mangrove forests conservation.

3. Students and Community Participation in Preserving Mangrove Forests in Bangkala, Jeneponto South Sulawesi.

The following table presents the recapitulation of data of SMP Negeri 3 students' participation in preserving mangrove forests in Bangkala, Jeneponto, South Sulawesi.

Table 5. Recapitulation of Data of SMP Negeri 3 students' participation in preserving mangrove forests in Bangkala, Jeneponto, South Sulawesi.

No	Interval	Categories	Frequency	%
1	<40	Very low	0	0
2	40-55	Low	6	8
3	56-75	Medium	10	13,33
4	76-100	High	59	78,67

According to table 5, it is found out that SMP Negeri 3 students' participation in preserving mangrove forests was 78,67%. Meanwhile, the following table depicts the recapitulation of data of SMA Negeri 7 students' participation in preserving mangrove forests in Bangkala, Jeneponto, South Sulawesi.

Table 6. Recapitulation of Data of SMA Negeri 7 students' participation in preserving mangrove forests in Bangkala, Jeneponto, South Sulawesi.

No	Interval	Categories	Frequency	%
1	<40	Very low	0	0
2	40-55	Low	4	5,33
3	56-75	Medium	15	20
4	76-100	High	56	74,67

According to table 6, it is found out that SMA Negeri 7 students' participation in preserving mangrove forests was 74,67%. The table below shows the recapitulation of data of community participation in preserving mangrove forests in Bangkala, Jeneponto, South Sulawesi.

Table 7. Recapitulation of data on community participation in preserving mangrove forests

No	Interval	Categories	Frequency	%
1	<40	Very low	0	0
2	40-55	Low	2	2,67
3	56-75	Medium	6	8
4	76-100	High	67	89,33

Table 7 indicates that community participation in preserving mangrove forests was 89,33%. In conclusion, students and community participation in mangrove forests conservation were in high category.

DISCUSSION

The results of data analysis indicate that the students and community who live in the coastal area were really supportive of the development of a constructivism based booklet. Information related to the mangrove forests management and conservation was badly needed by the people who found some difficulties in accessing information on the internet. Positive responses towards the development of the booklet encouraged

them to improve the efforts in preserving the mangrove forests. Previous related research reported that community effort in preserving mangrove ecosystem was very low (15,58%); low (9,09%); adequate (49,35%); and high (25,97%) (Amin *et al.*, 2016). In addition to that, high school and university students' involvement in a socialization project also plays a crucial role in sustaining the mangrove forests. The coastal community was open to the enthusiasm brought by the young

generation engaged in actions to preserve the environment as a mutual potential asset.

Assistance in mangrove forests management is important. It provides help for the community to get the answers to issues related to factors and concrete examples of mangrove forests devastation (Amal and Baharuddin, 2016). The persuasive approach also needs to involve local stakeholders and students. Hopefully, this activity can be continuously and regularly conducted. Wibowo (2013) explains that forests conservation needs both government and community active participation. Community awareness is crucial in this case because they who live nearby directly connect to the existence of the forests.

According to Pramudji (2004), there are some aspects that have not functioned effectively and need serious attention from all parties. They include (1) government policy; (2) socialization of the roles, benefits, and importance of mangrove forests for living creatures, including human beings; (3) socialization, rehabilitation, and conservation of mangrove forests; (4) law enforcement. Tree logging has become a serious threat to the existence of mangrove forests. It does not only result in deforestation but also change microclimate which also adversely affects the ecosystem in the area (Setyawan and Winarno, 2006). The results of the interview conducted with some local people indicate that government needs to take an action to prevent the mangrove forests from destruction. Violation of the law related to the forests conservation and management needs to be strictly followed up by giving sanctions or punishment. This is expected to give a deterrent effect on the irresponsible people.

The scarcity of the forests and the active participation of the coastal community contribute to the preservation of mangrove forests which support the availability of marine resources (Cie *et al.*, 2010). The perception of the society members needs to be directed into positive

so that they are willing to maintain and preserve mangrove forests. Dahuri (1996) states that the uncontrolled economical activities and community lack of awareness are the causes of mangrove forests destruction. All human activities which are related to the use of mangrove forests area in a great scale are also associated with high population and low economic level of the locals (Pramudji, 2000; Supriharyono, 2006). Kaunang (1999) shows that knowledge, attitudes, motivation, and active participation of the community are correlated. In other words, people who have better knowledge, attitudes, and motivation to preserve mangrove forests will perform more active participation. Therefore, they need coaching and assistance so that they can maintain their enthusiasm in preserving the mangrove forests.

CONCLUSIONS AND SUGGESTION

Based on the results of the present research, it can be concluded that: (1) the students and community members who live in Bangkala, Jeneponto, South Sulawesi have provided positive responses and been supportive of the development of the constructivism based booklet; (2) community perception was good and they started to recognize the importance of the mangrove forests conservation and management; (3) the participation of the students and the community in Bangkala, Jeneponto, South Sulawesi was high. Even so, it is still necessary to give coaching and provide assistance for the people continuously. The findings also suggest that the government should intensively improve the community awareness of mangrove forests conservation and management in a more persuasive way.

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