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SCIENTIFIC
PUBLISHERS

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Printed in the United States of America

Advanced Science Letters
Vol. 23, 2582–2583, 2017

Challenges for the Development of Resilient Coastal Area Program in Timbulsloko Village Sayung District Demak Regency

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Coastal area development in Indonesia has been challenged by such problems as high rate of local poverty, high rate of coastal degradation, and low and minimum infrastructure quality. Such threats have become more apparent due to global warming, causing the elevation of sea level. In order to overcome these problems the Ministry of Marine Affairs and Fisheries has since 2012 launched the Resilient Coastal Village Development Program (PDPT), eventually changed into the Resilient Coastal Area Development (PKPT) by 2014. The program has been implemented in 22 different areas nationwide, including in Sayung District, Demak Regency. One of the locations selected for the program in Sayung was Timbulsloko village. This study aimed to find out challenges of the Resilient Coastal Area Development implementation in Timbulsloko. The study applied a qualitative descriptive method with the locus in Timbulsloko village, and the focus was observing challenges for PKPT implementation. The results obtained from the field observation revealed that the biggest threat on the Resilient Coastal Area Development was the coverage of flooded/inundated area, which caused a significant shift of coastline. This flooded/inundated area needed a special attention. Control and prevention of the flooded area from abrasion needs a co-operation from many stakeholders consisting of local community, government, and private sector.

Keywords: Resilient Coastal Area Development Program, Timbulsloko, Demak, Flood, Inundated Area.

1. INTRODUCTION

Coastal area plays a significant and a very important role for the economic development of many cities in the world, including in Indonesia.¹ However, threats have ever since become more apparent. Of the problems frequently found in the coastal area development, degradation of the coastal environment has been the most irritating issue.

Indonesia is an archipelagic country. Therefore, it has large number of coastal areas. In 2015, there were 12,827 villages situated in the coastal areas.² Coastal area development in Indonesia has been encountered by significant challenges such as high rate of local people poverty, high rate of coastal degradation, low and minimum infrastructure quality, as well as low housing health condition.

Threats have become more apparent due to global warming, which is believed to cause the elevation of the sea level. The Chinese State Oceanic Administration (SOA) report reveals that an observation in Giangxi coast in China found an annual sea

level rise of 2.9 mm over the past 40 years. It is also predicted that the sea level will continue to rise up to 60–120 mm annually by the next 30 years.³

In Northern Coastline of Java Island, the total damaged of the coastal area has reached 6,566.97 ha with the most severe damage found in Sayung District, Demak Regency, Central Java Province. The abrasion in this district covers 935.18-hectares area.⁴

In response to the current situation, the government has taken a measure by mandating the Ministry of Marine Affairs and Fisheries to launch the Resilient Coastal Village Development (PDPT) program, in effect since 2012. It was a community empowerment program for disaster prone coastal area.

The Resilient Coastal Area Development program lasted two years before it changed into the Resilient Coastal Area Development (PKPT) program in 2014, by the time the Law No. 6/2014 on Village was promulgated. The Resilient Coastal Area Development program was implemented in 22 different areas nationwide.⁵ Villages in Sayung District, Demak Regency, where the program was implemented were Sriwulan, Bedono, and Timbulsloko.

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This study aimed to find out threats on the Resilient Coastal Area Development program implementation in Timbulsloko. An interview held in September 2015 with the Head of Demak Regency Office of Marine Affairs and Fisheries found that Timbulsloko was the most appropriated example for the Resilient Coastal Area Development program implementation.

2. RESEARCH METHODOLOGY

This study applied a qualitative descriptive method with the locus of Timbulsloko Village, the area selected according to an interview held in September 2015 with the Head of Regency Office of Marine Affairs and Fisheries. The interview found that Timbulsloko was the most appropriate example for the implementation of the Resilient Coastal Area Development (PKPT). The study collected primary data from vary informants, including government institutions (provincial, regency, or village levels) and local communities, while secondary data from documents relevant to the current study. The study focused on the challenges for the program implementation.

3. RESULTS AND DISCUSSION

The Resilient Coastal *Village* Development with its eventual change, the Resilient Coastal *Area* Development, focuses on coastal area management, human, resources, infrastructure/environmental development, disaster prevention, and climate change responsiveness. The contents of the PKPT (coastal area development) are expected to improve resilience by minimizing losses affected by disasters and climate change in the coastal villages. The end results anticipated from the program is environmental sustainability and high responsiveness to disasters and climate change.

The program of the Resilient Coastal Area Development in Timbulsloko Village lasted two years (2013–2015). The program aimed to create resilience and self-help capacity of the local community of Timbulsloko in responding to disasters and climate change. Environmental problems in Timbulsloko had been so complicated, that the implementation of the Resilient Coastal Area Development program was never easy in any way. No matter how modest the program was conceptualized, it encountered many challenges in its implementation in Timbulsloko.

The field observation proved that the biggest challenge in the implementation of the Resilient Coastal Area Development in Timbulsloko was the coverage of flooded/inundated area. The physical condition was clearly evidenced by the significant shift of the coastline.

A result of the 2003 image interpretation and digitation in Timbulsloko revealed the shift of the coastline as far as 75.3 m away from the initial point recorded in 1989, with the coastline length of 1,833 m. The abrasion had also occurred in ± 21 -ha area with an annual abrasion rate of 0.12 ha.

Furthermore, in 2009, there was an increase of the length of the coastline in Timbulslokoto 3,481 m with the average abrasion rate of 178.8 towards the terrestrial area. The abrasion in 2009 covered a total area of 55 hectares with the annual abrasion rate of 0.16 hectares. It was clearly evidenced that the abrasion had inundated some parts of Timbulsloko Village. A quick bird analysis resulted in the following data.

Table 1. Shift of coastline in Timbulsloko (2003–2009).

Description	Year	
	2003	2009
Coastline length (m)	1833	3481
Abrasion area (ha)	21	55
Abrasion rate (ha/year)	0,12	0,16

The physical condition of Timbulsloko Village proved a severe inundation. This had mounted a real threat on the program implementation of the Resilient Coastal Area Development. The sixteen years of abrasion in Timbulsloko had caused the change in land use. Sea water inundation gradually increased over the years. Accordingly, the impact was very significant on the daily life of the local community.

The areas became permanently inundated, diminishing productivity because of the loss of rice fields. The farmers were involuntarily forced to adapt a new way of life, focusing more on pond activity. The coastal area damage has given a real economic impact. The local farmers and the fishers suffered income loss by 60–80% and 25–50%, respectively.⁶

The study found an emphatic reality during the field observation in Timbulsloko, where the local people had to adapt the new situation due to the physical change in their environment. The abrasion has been causing wider flooded and inundated areas in the village. The government must address this problem seriously, since its policies is still focused on land-based development instead of maritime-based development despite the fact that Indonesia is the largest archipelagic country in the world.⁷

4. SUMMARY AND RECOMMENDATION

Efforts to implement the program of the Resilient Coastal Area Development (PKPT) in Timbulsloko Village were hindered by severe inundation. The resilience of the local people was very low in responding to the disasters, natural resources, and climate change. The study recommended a special attention from the government to the flooded/inundated areas in Timbulsloko Village.¹ Control and prevention of flooded area from abrasion needs co-operation from many stakeholders consisting of local community, government and private sector.

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Received: 12 October 2016. Accepted: 2 November 2016.