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S.M.A.R.T. eco-village for hazardous coastal area in Bedono Village, Demak Regency

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Abstract

Coastal areas tend to have more volatile nature, both in the physical and socio-economic characteristics. Rob and abrasion is a problem that causes Villages in Bedono lost, some homes are isolated due to tidal still survive today, causing major problems in the study area that is quality decreasing of coastal settlements in Bedono, Pandansari and Tambaksari hamlet. The concept "SMART ECO-VILLAGE" to solving problems about Bedono's settlement. This concept integrates ecological, social, spiritual, and a sustainable economy with eco-village approach through S.M.A.R.T (Sustainable Management and Redesign Settlement) and Eco-Village principle to integrate a social environment that supports the life of "a low impact" or that have a small risk. It's integrate various aspects of environmental design consisting of ecological design, eco-friendly buildings, lots of green open space, permaculture (permanent agriculture), using alternative energy, using a communal building, etc. The aim is to formulate design concept strategy for resettlement of Bedono Village. Methods research is qualitative descriptive where it begins with identification of issue coastal settlements than formulated a concept and strategy in solving the problem of settlements. The research output is the application and development of SMART Eco-Village in Bedono Settlement.

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1. Introduction

Rob and abrasion phenomenon is most feared by the coastal communities. This led to settlements coastal region experienced a very complex problem and need serious treatment. For example, coastal areas in Demak which suffered

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most severely damaged by abrasion and rob are Bedono village where more than 300 hectares over the last 5 years have inundated during high tides. In the village of Bedono, two hamlets have now been drowned by the tidal namely Senik Hamlet and Tambaksari Hamlet, following Pandansari Hamlet threatened to sink (Bappeda Demak, 2014). This damage resulted in a decreased function of the existing land in the coastal of Bedono village. Due to reclamation on the Marina beach Semarang, excessive ground water extraction, the absence of normalization baboon River, as well as local people who do excessive mangrove logging for timber on charcoal (Suara Merdeka, March 30, 2014). Abrasion and rob in the Bedono village cause damage to some facilities and infrastructure and loss of some hamlets were submerged. One of them is the Tambaksari Hamlet that now separate from the other hamlets that interfere with the accessibility and community activities, especially in economic terms, which it impact to declining incomes. This is the underlying problem of the declining quality of public housing in the coastal area of the Bedono village that affect many aspects such as health, environment, economy and aesthetics of the area. Bedono Village areas that should be addressed for the sake of the availability of resettlement convenient to support the population such as social activities (activities in the family, health, education, religion, recreation, etc.) and economic activity (activity in livelihood, how to consume, exchange of goods and services and so on). Therefore, the need for a concept that is capable of resolving the problems of coastal communities in the village settlements in a sustainable Bedono both from the aspect of social, economic and environmental..

The aim of this study is to identify the problems of coastal settlements in the village Bedono and then try to formulate a concept and strategies design in the coastal area of the Bedono village in order to create a comfortable environment and sustainable settlement. The research object studied is the coastal settlement area in the Bedono village including the issues of ecological, social, spiritual, and economy so as to formulate the concept of handling the problems of sustainable coastal settlements.

2. Methodes

The research method is descriptive qualitative with phenomenological approach. Researchers determine research problems based on phenomena occurring in the field so that more researchers set out to the fact that there was and is happening on the symptoms of the problem. In the study, the researchers produce output to the truth that existed at the time the research conducted thus not based on other people's thinking. Qualitative methods were used more leads to naturalistic and phenomenological stressed that the implementation of research occurs naturally, in a normal situation that is not manipulated circumstances and conditions, emphasis on natural and based on the description of the phenomenon exists. Qualitative methods were used beginning with the identification of the issue of coastal settlements in areas prone to abrasion rob, than the issue help to Formulated a concept and strategy in solving the problem of settlements in the Bedono village.

3. Result and Discussions

Bedono village is one of the coastal villages in Demak Regency The total area of the Bedono village reaches approximately 739 hectares and is the largest village in Sayung District. Bedono village consists of 6 RW, RT 23, and 7 hamlets namely Tonosari, Morosari, Pandansari, Tambaksari, Senik / Rejosari, Bedono and Mondoliko. Bedono village has administrative boundaries as follows:

- Nothern boundary : Timbulsloko Village and
- Southern boundary : Sriwulan Village
- Eastern boundary : Purwosari village and Sidogemah village
- Western boundary : Sea of Java

Bedono village is one of the villages worst affected by changes in sea level rise, most of its territory is now submerged by tidal water. According to data contained in the Central Bureau of Statistics Central Java, Villages Bedono has lost more than 300 hectares of its territory due to submerged by rising sea water.

Number of Bedono Villagers in 2010 was 2,949 people, a population consisting of 1,514 male and 1,435 female inhabitants. This number decreased sharply compared to previous years. To decrease the number of people registered in the year dropped 1,828 people (38.26%) .This is because the Bedono village is a disaster-prone areas. Therefore, some people feel uncomfortable settle and stay in the Bedono village because of the quality and safety unfavorable environment. For more details about the number of people can be seen in the following table:

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