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PROCEEDING

The 1st International Conference
on Sustainable Infrastructure and Built
Environment in Developing Countries

SABUKA ITB, BANDUNG – INDONESIA
2nd - 3rd NOVEMBER 2009

POSTER PRESENTATIONS

BOOK H :
ENVIRONMENTAL PROTECTION AND
MANAGEMENT

Organized by
Faculty of Civil and Environment
ITB



PREFACE

The 1st International Conference on Sustainable and Built Environment in Developing Countries (SIBE) 2009 is aimed to provide forum to discuss and disseminate recent advance in scientific research, technology and management approach to obtain better environment quality.

Infrastructure that provides the basic need of a society and sustainable infrastructure system are essential for the survival, health and well-being of a society. In developing countries, civil and environmental engineer are at the epicenter in seeking means to enhance the quality of human life through modernization of infrastructure as evidenced by provision of shelters, water and transport amongst others. The current rate of urbanization and industrialization raises a number of environmental issues, often resulting in environmental mismanagement, especially in developing countries. The problems are further aggravated by environmental degradation such as soil erosion, depletion of water resources, etc. In order to meet these multifaceted challenges, proper planning followed by implementation and verification must be exercised, via an integrated, multi disciplinary and holistic approach.

The conference will provide an opportunity for professionals and researchers to learn, share and exchange about the latest development and research in civil and environmental engineering. The scope of the conference covers all aspect of civil and environmental engineering practices.

Participants of the conference include researchers, academic staffs, students, industries, public and local governments. The keynote presentations during the conference are as follows :

Keynote speakers :

- **Indonesian Government Representatitve**
Minister of Public Works, Indonesia
- **Dr. Puti Farida Marzuki**
Dean of The Faculty of Civil and Environmental Engineering, ITB
- **Dr. Tony Liu**
National Taiwan University, Taiwan
- **Prof. Shunji Kanie**
Hokkaido University, Japan

- **Prof. Syunsuke Ikeda**

Tokyo Institute of Technology (AUN/SEED-Net), Japan

The objectives of this conference are :

1. To provide a platform for exchange of ideas, information and experiences among academics, researchers, consultants, engineers, manufacturers and post graduate scholars in civil and environmental engineering.
2. To discuss and evaluate the latest approaches, innovative technologies, policies and new directions in infrastructure development, pollution prevention and eco-friendly technologies adapted to developing countries.
3. To promote cooperation and networking among practitioners and researchers involved in addressing infrastructure and built environment issues.

The oral and poster presentations are subdivided into 8 major sections, as following :

- A. Structure and material
- B. Transportation system and engineering
- C. Water engineering and management
- D. Waste engineering and management
- E. Ocean engineering
- F. Construction management
- G. Geotechnical engineering
- H. Environmental protection and management

There are 174 contributors in oral presentation and 34 contributors for poster presentation.

Finally, the organizing committee wishes that this conference is able to provide beneficial scientific information to the participants and other concerned readers.

Bandung, November 2009

Organizing Committee.

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The Role of the Community to Improve the Quality of Environmental Sanitation (Case Study: Fisherman Housing in Bandengan Region Kendal Munipality)

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Abstract

The Problems of housing represent the problem of almost entire all developing countries. Explosion resident of urban that cause by highest migration of urban-rural linkages that make the remarkable social cost to requirement of housing which is affordable and other social services. Along with continuing the wide-spreading of urbanization thrive also dirty kampongs and slum of down town (shantytown) and also more and more townee which remain in settlement center which in fact improper dwell (Todaro, 2000)

This research aim to know the role of public in improvement of quality of environmental sanitation, bearing with condition of its resident economics social in Kelurahan Bandengan Kabupaten Kendal. Location sample is specified intentionally (purposive sampling) and chosen of RW IV Kelurahan Bandengan because has not is competent as settlement. Data collecting is done with interview, Focus Group Discussion (FGD) and observation of field, with instrument of questionnaire. Method applied is quantitative and qualitative combination trap method.

The result of research indicated that: most of all houses in Bandengan region do not requirement of healthy housing standard. In Bandengan area most of all houses have no latrines, their use a Kendal river to defecate. In Kuwait dwellers they have no sewerage channel, so in rainy season the dwellers must have flood. There are several things which have been done to initiate the community to try to improve the condition, one of them are give awareness for the importance of hygiene of environment. First matter is trainee the community to compose the garbage become an organic fertilizer. At the moment not yet many citizen using because is still in a little group. The other solution are to generate the local wisdom like “jimpitan” that used to defrayed the sanitation.

It is important to realize that there is no universal solution. Different ethnic and cultural conditions will affect every approach. Some factors, however, will be involved regardless of other considerations. These factors include understanding that social, cultural, and technical aspects need to be addressed.

Keyword : Fisherman Community, Sanitation

1. Introduction

Indonesia mostly its region that consist of ocean and have big enough oceanic potency, ought to can be secure and prosperous life of fisherman society that draping their life in oceanic potency. The reality life of fisherman is poorness. According to Dahuri (1999) prosperity of the fisherman is still under other sectors including agrarian agricultural sector. According to data of BPS (2006) amount of impecunious society in Indonesia are 49 million people and about 60% its represent poor fisherman communities.

The first time that can be seen from condition of poorness of social economic gap in life of fisherman society are the facts of of physical character like the quality of the settlement. Fisherman

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kampongs will be easy to identify from the condition of their houses. Very simple houses built from bamboo matting (*gedeg*), with floor from board or ground with that roof using palm leaf (*rumbia*) and limitation of ownership of house wares of household residence for all labor fisherman and traditional fisherman. On the other hand, luxury houses with all adequate facility will easy to recognized as residence owner of boat, commission agent (big scale merchant), and tradesman (Kusnadi, 2002; Sitorus, 2002).

The settlement of fisherman in Bandengan residing in Sub-District of Bandengan that has 219 houses with various types that which divided in 6 RT. In this area there are 3 types of ownership of house, the first is them that which only getting land its about 70 m², the second is them that which have land and houses together, the last is fisherman that have houses aid from Kuwait government.

According to the condition hence this research will studied how far the availability of facilities and basic facilities in Bandengan Area, after that the study will try to the understanding the related of the society to the environmental sanitation and how far the role of the community to improve the better environmental sanitation.

2. Materials and Methods

This research used qualitative and quantitative approach. Qualitative approach is used to understand opinion, and view of the society that related to environmental sanitation. The other quantitative approach is used to know the people characteristic like their jobs, education that their finished, and their salary per month. The data pick up with questionnaires for quantitative approach and in depth interview, focus group discussion (FGD), and also observation for qualitative approach. Fieldwork for this study took place from September to December 2008. Key Informant interviews were conducted with a mix of 10 local people (men and women). The interviews included open-ended question which are designed to address the role of local community to improve their sanitation. Besides used key-informant in this research used to focus groups discussion for stakeholder in Bandengan Sub District. Additionally 78 questionnaires were administrated randomly of local people in Bandengan.

3. Results and Discussion

3.1. Location Study

Studied region reside in RW IV Sub-District of Bandengan, in the RW there are 4 of RT with amount of family head equal to 240 soul with biggest jobs (90%) as a fisherman and just a little that have a jobs like industry labour and merchant. Most of the people finished their education in elementary school.

The public facilities like *puskesmas* (public health) and school only can be accessed in Bandengan Sub-district. In sub-district of Bandengan they have only two kindergarden and three elementary school and one of *puskesmas* (public health). For the infrastructure like roads, water supply, sewerage and garbage place are still in bad condition. The location of this study seen in that figure:

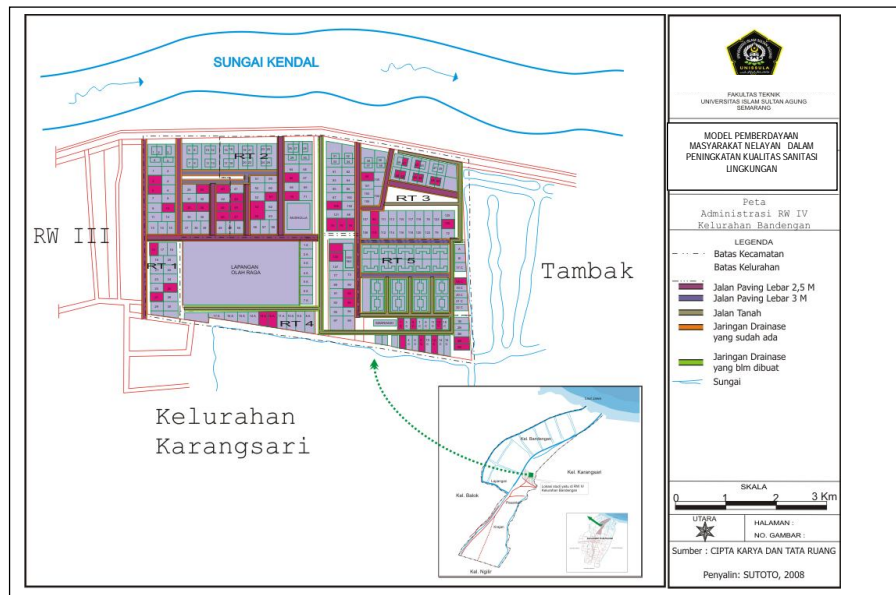


Figure 1. The location study is in RW IV Bandengan Sub-district

3.2. Sanitation Condition

a. Housing

The most of houses in Bandengan are semi-permanent houses and little non permanent houses that build by wooden construction and poor condition. House that built in 2004 and 2005, almost 90% are non permanent which have brick wall, its floor is ground, the ventilation or window or each houses, but some of the houses have no ventilation or window. The illustration see below:

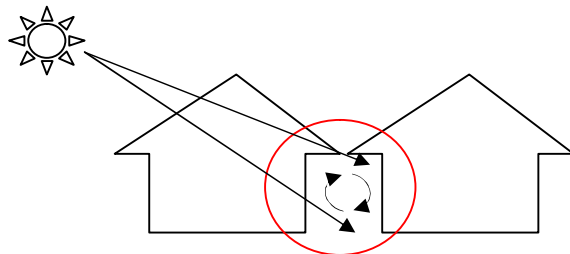


Figure 2. Houses condition which closed each other the impact of development of new houses and also developed addition of new room, causing the coverage building coefficient more than 60%, as a result natural illumination decrease, draught is not fluent, air become indisposed and sultry.

b. Sewerage

Sewerage channel can be functioned to anticipated the floods and conduct rainwater and also irrigate domestic waste water. Considering disaster which often happened is floods. Generally, the sewerage channel in Bandengan are permanent following the path. Besides there is a channel sewerage network which have is permanent, but its condition closed with covered by ground hoard. It is caused by low of local community awareness to take care of sewerage. Closed sewerage caused of floods in RW IV Sub-District of Bandengan. There is unfavorable sewerage network because only in the form of just land; ground dig and there are waste dump, as narrow. The drainage cause the channel unable to flow the rain season, society make dig only whereas because considering the condition of street which not yet good that is still is made from ground.

c. Solid Waste

In solid waste management, is need to supporting facilities, such that container, transportation and land disposal. In Bandengan Fisherman village, that no has a place to thrown the waste. The local people always threw their waste in Kendal River or burn in their backyard. Most of houses in Bandengan Sub District have no place to thrown their waste. Although the local people knew the result if they thrown their waste in river like a flood that always suffused their settlement and

improper management of solid waste has direct adverse effects on health, but almost people doesn't want to know its (apathetic).

d. Water Supply

Water supply represent requirement of human being base to be can pass off its life. So water supply that has a minimum requirement standard should have full filled. The water supply services in RW IV Sub-District of Bandengan, can be note that have a good services especially their services area. It's about 92 % local community get water supply from PDAM, and some of people used well to enough their needed of water supply. The quality of water that used by society of RW IV, visually it's colorless, odorless and always fluently.

e. Latrine

The Society of RW IV Sub-District of Bandengan are generally used Kendal river is river, besides that local people doesn't convenient with latrine. Two years ago in RW IV of Bandana sub district have a public latrine that located in riverbank of Kendal, but now the public latrine was does not exist anymore because hit by roads development in riverbank side. Some of people (six people) have a latrine in their house but the condition less maintained.

3.3. Preference of Society

Some of preference of Bandengan society with reference to environmental sanitation are:

- a. The local community assumed that used the latrines in their houses is interfere with their trust (*pemali*). So the society more chooses to defecate in Kendal River than in latrines.
- b. The knowledge of the community about environmental healthy is no waste in the courtyard. Most of houses in Bandengan Sub District have no place to thrown their waste, so the people always threw their waste in Kendal River or burn in their backyard.
- c. The problems of environmental hygiene is about funding, because if we talk about monthly fee (in Bandengan Sub District called "*jimpitan*"), maybe from 10 person whom to ask for, only 3 or 4 person that to accept this project.

The Jimpitan

Jimpitan is the traditional value in javanese community. *Jimpitan* is obligation for every house to give contribution to the village in the form of rice, The rice can draped in front of house every night taken by glass. Every month meeting in every RT hence result of this nightly *jimpitan* will be reported to chief of RT. In this time, *jimpitan* exist in countryside of Bandengan untapped as one of the source of financing to improved environmental sanitation

Adopting a household-centered approach provides the opportunity to find out what householders think about the sanitation they already have and to explore what they actually want, rather than have other people decide for them. When people are ignored and the local context is not taken into account, sanitation schemes will fail. It is important to build awareness and create the environment to make informed choices. Social marketing is likely to be a key means of stimulating effective demand. This has to be followed up with supporting and facilitating measures to respond to the generated demand: for example, through better access to finance.

3.4. The Role of Local Community in Sanitation Improvement

The Role of community to improve their quality of environment especially in housing improvement is still having much constraint, this matter caused by the existence of various myths expanding in the society and also the lack of knowledge. The impact of that we can seen bad environment still like a slump area.

The participation of the community according to Aronstein (1969) is still in informing (A most important first step to legitimate participation, but too frequently the emphasis is on a one way flow of information, no channel for feedback). This matter is discovered by the condition of that some of

society not yet understood about the important of improvement the quality of sanitation. This factor appearance is triggered by existence of:

- a) lack of them sanitation knowledge, for now the community just only “knew” about sanitation, its means they can mention the meaning of sanitation, but not expressed in their behavior
- b) poverty problems that cause by many factor like:
 - lowering of formal education level, lower income and uncertain depended season, is not available of jobs alternative to full filled their live caused they don’t have any other skilled except a fisherman;
 - chance of community to improved their access to better sanitation, basic need, and various facilities are still lower.
- c) local community participation in improved sanitation has been poor owing especially in decision making in lowest level of stakeholder In Bandana so affected to self-supporting to finish problems of environment.

4. Conclusion dan Recommendation

4.1. Conclusion

The Result of research indicated that: the role of society related to environmental sanitation is still very influenced by 1. Under knowledge in concerning environmental sanitation that resulting entire all region of RW IV does not have solid waste container, drainage channel, latrine in their houses and also the condition of house do not requirement of healthy housing standard, 2. The value system that exist in Bandengan society show that there are matters which is “*tabu*”/“*pemali*” related to environmental sanitation (latrine), 3. There is no integral communication, information and education regarding environmental sanitation. According to this research that society preference show although they have awareness of the important health environment but in their poverty made them give up (“*nrimo*”) with that condition. Besides cause of poverty their attitudes, and behavioral of the society in sanitation management is relatively low.

It is important to realize that there is no universal solution. Different ethnic and cultural conditions will affect every approach. Some factors, however, will be involved regardless of other considerations. These factors include understanding that social, cultural, and technical aspects need to be addressed; understanding that small is OK, which means that stakeholders must develop their own approaches; realizing that capacity improvement is needed when considering regional autonomy; realizing that government agreement is needed when adopting community-based sanitation; understanding the need for credit facility, education and awareness; and knowing that the entry point is giving informal settlers some type of legal status. (Sudjarwo, 2001)

For the future financing that source from their community must be generate, and social capital like *jimpitan*, is one of the better source that can financed to improved their environment sanitation and environment housing.

4.2. Recommendation

The real issue is hygiene education and awareness. Efforts must start with all schools. For pupils to understand this subject and relate to it, they must see good water supplies and sanitation facilities in each and every school throughout a given country. Efforts must ensure that there are good and adequate public sanitation facilities in every village in a given country. Efforts must address environmental sanitation issues affecting the rural poor residing in unauthorized settlements.

Worldwide experience shows that sanitation solutions must come from joint efforts of governments and communities. The community must understand the problem and be willing to act. It helps to have a champion of the cause within the community, and members of the community must have a sense of ownership of the project.

Develop institutional arrangements, mechanisms, and incentives that stress the participation of users and encourage the involvement of both the formal and the informal private sectors. For next research it,s find out the social capital that grow in Bandengan village, and more understanding the social capital like *jimpitan* or any others.

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