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Quality improvement strategy of implementation community-based total sanitation program in Samarinda, Indonesia

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Abstract. Community-Based Total Sanitation (STBM) is a program that aims to change the behavior of community sanitation hygiene through empowerment programs. The quality of STBM program implementation varies by city. The strategy implemented by the health office of the city influences the quality of the STBM program. Based on these problems, a comprehensive study is needed to find out strategies that can improve the quality of STBM program implementation. This study aims to determine the strategies used by the health department in improving the quality of STBM program implementation in Samarinda City. The stages of data collection in this research were carried out in two ways, namely document-based literature study and interviews. Documents collected are STBM activity reports and health profiles from 2012 – 2018. The implementation of the Community Based Total Sanitation (STBM) program in Samarinda City has involved cross-sectoral. Since 2014, the government of Samarinda City has supported the STBM program by increasing the annual budget for implementing the STBM program. Based on interviews with Samarinda City Health Office informants, the obstacle faced in improving the quality of STBM program implementation was the lack of health workers trained in STBM fields. Samarinda City Government has also provided support for maximizing the STBM program through the Samarinda Mayor Circular. There are four strategies used by the Health Office of Samarinda City in improving the quality of STBM program implementation. The first strategy is the involvement of sub-district heads and natural leaders in organizing and implementing STBM programs. Second, a large increase in the STBM budget every year. Third, improving the quality of environmental health workers in supporting the maximization of the STBM program. Fourth, the making of regulations from the local government related to the implementation of STBM in each district and village.

Keywords. Community, Government, Program, Sanitation, Strategy

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1. Introduction

Public health is one aspect that is of concern to every country in various parts of the world. Various policies have been made by the government to improve public health status. One of them is by maximizing program implementation preventive (disease prevention). Several countries have developed a health development paradigm towards a preventive *approach* so it doesn't just solve health problems with a curative *approach* (treatment).

Health development paradigm with an approach preventive more focus on changing *set* community about healthy lifestyles. Building public awareness to implement a clean and healthy lifestyle (PHBS) is an effective strategy for solving health problems. However, it is not easy to change people's behavior so they can apply PHBS in their lives. Regulations are needed that can condition the community to want to implement PHBS.

One of the Indonesian government's efforts to increase public awareness of adopting a healthy lifestyle is the Community-Based Total Sanitation (STBM) program. STBM is a program that aims to change community sanitation hygiene behavior through an empowerment program. There are five pillars in the STBM program, namely stopping open defecation (BABS), washing hands with soap, managing drinking water and household food, managing household waste, and managing household liquid waste. The implementation of the five pillars is in the form of reducing the incidence of diarrhea and environmental-based diseases.

The reason for the existence of the STBM program is the low percentage of ownership of sanitation facilities in various regions in Indonesia, especially the availability of healthy latrines. Samarinda City is one of the cities that has a low percentage of healthy latrine ownership in 2011. The percentage is only 6.84% of the 227,574 families whose toilet condition is examined[(1)]. However, after the STBM policy was implemented, the percentage of healthy latrine ownership increased to 42.7% in 2015[(2)]. The percentage of healthy latrine ownership in Samarinda City has also increased to 66.9% in 2016 and 72.9% in 2017[(3,4)].

In general, the implementation of the STBM program in most of the urban villages in Samarinda City has increased. Since the implementation of the STBM program, the percentage of sub-districts that are included in the STBM sub-district/village category was 13.56% in 2015[(2)]. Two years later it increased to 89.83%[(4)]. However, what needs to be understood is that the increase in the number of sub-districts that have implemented STBM is not only measured by the results of STBM socialization and counseling. The success of the STBM program must be viewed comprehensively by looking at the quality of program implementation which has an impact on changing people's behavior to want to adopt a clean and healthy lifestyle.

Policies related to the implementation of STBM have been regulated in the Regulation of the Minister of Health Number 3 of 2014. Therefore, every Health Service throughout Indonesia is required to maximize the implementation of the STBM program. Three STBM components serve as a reference for the Health Office in planning, implementing, monitoring, and evaluating. The three components are a disenabling *environment* (creating a conducive environment), *demand creation* (increased need for sanitation), and supply *improvement* (increased provision of access to sanitation)[(5)].

The Ministry of Health through the Directorate of Environmental Health designs the STBM policy which becomes the reference for every provincial and district/city Health Office. The Directorate of Environmental Health not only designs STBM implementation procedures but also designs a monitoring and evaluation system for the STBM program. Therefore, each provincial and district/city Health Office must be able to maximize the STBM program based on the plans made by the environmental health directorate.

Technium Social Sciences Journal
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The quality of the implementation of the STBM program in each district/city is different, some have been running optimally but some are still not optimal. The strategy implemented by the district/city Health Office has had an impact on the quality of the STBM program. The different socio-cultural conditions of the community influence the strategy for implementing the STBM program in each district/city. The amount of funding for the STBM program and regulations from local governments also influence the quality of the STBM program. In addition, the availability of trained environmental health workers has contributed to improving the quality of the STBM program.

Based on these problems, a comprehensive study is needed to identify strategies that can improve the quality of the implementation of the STBM program. The results of the study are expected to provide recommendations to the provincial and district/city Health Offices in maximizing the STBM program. This study aims to determine the strategy used by the Health Office in improving the quality of the implementation of the STBM program in Samarinda City. The research is expected to provide input to provincial and district/city Health Offices in maximizing the performance of the STBM program.

2. Method

The stages of data collection in this study were carried out in two ways, namely document-based literature studies and interviews. The documents used in the literature study are primary documents. Primary documents are original documents written by individuals who have direct access to the information studied[6]. Documents collected are STBM activity reports, Health Office health profiles 2012 - 2018, and environmental health documents. Field interviews are useful for finding qualitative empirical materials related to the implementation of the STBM program in Samarinda City. Interview subjects were selected based on purposive *sampling* which is *a key person* in health institutions and institutions.

The process of data analysis consists of three parts, namely data reduction, data presentation, and conclusion. The data were analyzed using an interactive analysis process, which means that this research will move into the stages of data reduction and data verification. This process illustrates that research requires a process that is repeated continuously[7].

The stages of data analysis were carried out based on three main stages, namely data reduction, data presentation, and conclusion. Data reduction begins with choosing options about which parts of the data will not be used and will be discarded, and which data will be used and refined to help answer research questions. The form of data presentation is based on relevant data after being reduced. With the presentation, it is hoped that this research will be easier to understand to facilitate concluding. The next stage is concluding, before conclusions are drawn it is necessary to verify and interpret data.

3. Research result

There are four important points in the strategy to improve the quality of the Community-Based Total Sanitation (STBM) program in Samarinda City. Following are the results of the study of four aspects of improving the quality of the Community-Based Total Sanitation (STBM) program in Samarinda City:

Organizing and Execution

Implementation of the Community-Based Total Sanitation (STBM) program in Samarinda City has involved cross-sectoral involvement. The Samarinda City Health Office as

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the person in charge of the STBM program has collaborated with various agencies in implementing STBM. This strategy has been going on since 2014 until now.

One of the objectives of implementing the STBM strategy involves cross-sectoral involvement, namely maximizing the implementation of STBM socialization to the people of Samarinda City. According to the statement of the Samarinda City Health Office informant:

"*We have carried out STBM socialization in all sub-districts. We cooperate with sub-district heads, police, military and various communities in society. Most of the sub-district has also carried out socialization. Most of the schools have also been given socialization."*.

Following are the results of the 2016-2018 STBM socialization implementation based on data from the Samarinda City Health Office

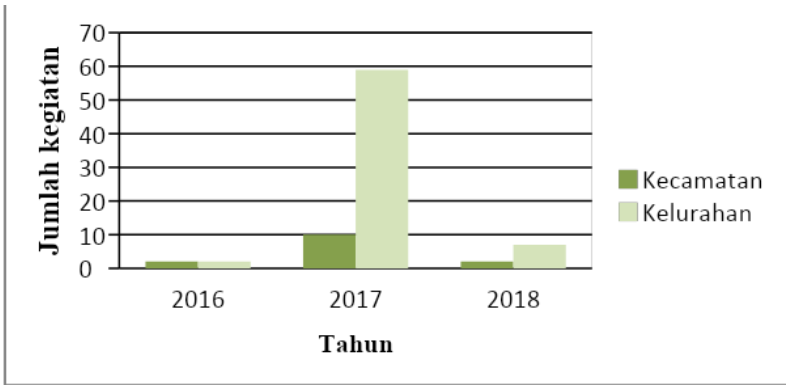

Figure 1. 2016-2018 STBM Socialization Implementation in Samarinda City

STBM socialization is carried out in different sub-districts and sub-districts each year. The goal is that all sub-districts and urban villages understand the STBM program. The most frequent frequency of STBM socialization was in 2017.

Based on the report from the Samarinda City Health Office, the focus of the STBM program in Samarinda City is the Stop Open Defecation pillar or Open *Defecation Free* (ODF). Maximizing the implementation of the Stop Open Opening pillar is carried out with a triggering program. There are three stages of the triggering program, namely pre-triggering, triggering, and post-triggering.

According to the Samarinda City Health Office informant:

"*Triggering aims to make people aware not to practice open defecation. Triggering has been implemented in most sub-district in collaboration with the local government and OPD. Several sub-districts that were given triggering were located around river banks. The results show that there has been a decrease in the number of people who practice open defecation or in other words the percentage of ODF (Open Defecation Free) has increased*".

Budget

Based on the results of interviews with the person in charge of the STBM program at the Samarinda City Health Office regarding the STBM program budget, the following results were obtained:

Technium Social Sciences Journal
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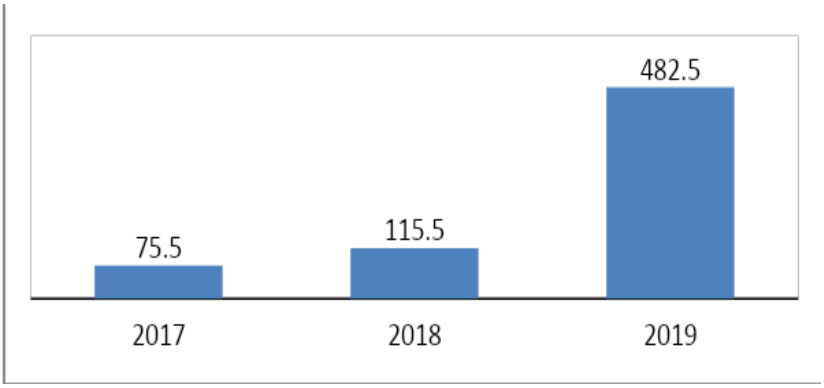

Figure 2. STBM Implementation Budget for the City of Samarinda Health Office

Maximizing the implementation of a program is strongly influenced by the size of the budget. Since 2014, the government of Samarinda City has been trying to make Samarinda City a healthy city through the STBM program. One of the efforts by the Samarinda City government to support the STBM program is by increasing the annual budget for the implementation of the STBM program. The following is an informant's statement from the Samarinda City Health Office:

"*In 2016, the budget for the STBM program was very small, around 2.5 million. After regulations from the local government regarding STBM, the budget increased to 75 million in 2017. This year the STBM budget is around 480 million*".

Human Resources

In addition to strategy and budget, maximizing the implementation of the STBM program is also influenced by human resource factors. Based on interviews with informants from the City of Samarinda Health Office, the obstacle faced in improving the quality of the STBM program implementation was the lack of trained health workers in the STBM field. According to interviewed informants:

"*The problem we face in maximizing STBM is the lack of environmental health workers and trained health workers to carry out STBM. There used to be two trained health workers but they were transferred so now we have a shortage of sanitation workers. We have to carry out triggering programs in all sub-districts and sub-districts*".

Regulation

Based on the results of the interviews, shows that the Samarinda City government has provided support for maximizing the STBM program. The form is in the form of a circular from the Mayor of Samarinda regarding the implementation of STBM. The circular letter is a stimulant to involve all elements of government in maximizing the STBM program. As the informant stated:

"*The mayor's circular letter is very helpful in maximizing the implementation of the STBM program. Coordination with sub-district heads, village heads, and community leaders became easier. The task of our sanitarian staff at the public health center has also been helped by this circular letter*"

Technium Social Sciences Journal
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Discussion

The principle used in the STBM method is to target, not to build facilities, but to eliminate "open defecation" through changing *set* public. The STBM program has changed the way people think that sanitation problems are a community problem, not an outsider's problem. STBM is an empowerment program that seeks to foster a spirit of independence and involvement of various parties such as the community, community leaders, religious leaders, and local government.

The STBM program places more emphasis on changing the behavior of community groups by triggering using*Methodology Participatory Assessment Participatory Hygiene And Sanitation Transformasi* (MPAPHAST). Triggering is carried out by making the community aware of improving sanitation conditions in their environment until they reach the condition of Open *Defecation Free* (ODF). The ODF condition is characterized by 100% of the community having access to their latrines and being able to maintain the cleanliness of the latrines[8].

The STBM program is a program that uses a socio-cultural approach so that it is more easily understood by the community. The involvement of sub-district heads, village heads, and community leaders (*natural leaders*) is key in maximizing the implementation of STBM. The Department of Health as the executor of the STBM program must be an involved natural leader in the community given the trigger. Collaboration with the Department of Health's *natural leader* will make it easier for the community to understand the important messages in the STBM program. The community's understanding of the STBM program will raise enthusiasm for participating in the STBM program[9].

Community-based health programs will be maximized if their implementation involves cross-sectoral and community leaders. Such as the strategy implemented in the Integrated Non-Communicable Diseases Assistance Post (Posbindu) program in Bogor City. The existence of cross-sectoral collaboration in the program was able to make the community enthusiastic about participating in the Posbindu PTM program[10]. Therefore, it is needed *natural leader* in every health program implementation, including the STBM program

There are many challenges faced to maximize STBM implementation. One of the challenges in implementing the STBM program is that there are still many people who see sanitation as not a priority. The community is more concerned with shopping for basic needs, children's schools, and so on. In fact, without good sanitation, people's health status will decrease, so they will need more money for treatment. Another challenge is the lack of parties willing to be involved to ensure that the sanitation problem is a very urgent problem that needs to be resolved immediately.

Collaboration between the Department of Health and *natural leaders is* key to solving obstacles in maximizing the STBM program. *A natural leader* is a person who can understand the community that is the target of the STBM program with a local approach. *The natural leader is* also able to move the community to adopt a new culture that can support the sustainability of STBM. Therefore, the strategy that must be implemented in maximizing the implementation of the STBM program is to advocate for a *natural leader* in the community which is the target of the STBM program.

Increasing the budget for the STBM program is also a strategy that must be implemented by local governments to maximize the quality of the STBM program implementation. The local government should allocate a bigger budget for health-oriented development *preventive approach*. If health development only focuses on a *curative approach* then government spending on treatment will continue to increase every year. The cost of medicines and medical

Technium Social Sciences Journal
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services continues to increase so that it will burden the regional government's finances, including the cost of health insurance which is intended for the poor.

There are obstacles in the implementation of the STBM program in residential areas around river banks. Most of the people who live on the banks of the river still practice open defecation and throw garbage into the river. This phenomenon occurs in most major cities in Indonesia. Efforts to relocate the community from the riverbanks are one of the solutions in reducing the habit of the community not to open defecation in the river and prevent pollution from household waste. In recent years, the City of Samarinda has attempted to relocate people who live around river banks, particularly in the Karang Mumus watershed. The aim is to reduce river pollution and condition the community to change open defecation behavior in rivers[11].

The government's efforts to change people's behavior through regional regulations sometimes have not run optimally. There are many obstacles to implementing these rules. As happened in Samarinda City, the implementation of regulations related to the ban on disposing of waste into rivers in Regional Regulation (PERDA) Number 02 of 2011 has not been optimal because there are still many people who do not know about these regulations. [12,13]. Not to mention that the behavior of throwing waste and open defecation in the river has become a habit, so it takes a long time to change this behavior.

Pollution of fecal waste and household domestic waste in rivers can have an impact in the form of a decrease in river water quality to a level that is no longer suitable for sanitation hygiene purposes. As the results of research in the Kuin River, South Kalimantan, show that the water of the Kuin River which is brownish, and sometimes smells bad, especially when it rains is caused by the high content of Fecal Coliform Bacteria in the Kuin River, namely as much as 210/100 ml at high tide and 780 /100 ml at low tide. Even though the quality standard stipulated in South Kalimantan Governor Regulation No. 5 of 2007 is 100/100 ml[14].

Communities living around riverbanks tend to dispose of their domestic waste directly into the river. Waste*Black Water* (Urine and feces) is channeled through pipes directly into the river. In addition, regional regulations governing the management of domestic wastewater have not optimally conditioned the public not to dispose of waste and open defecation in rivers[15]. In addition to regional regulations, there are also ministerial regulations related to domestic waste management. As stated in the Regulation of the Minister of Environment and Forestry (MLHK) RI number P.68/Menlhk-Setjen/2016 concerning domestic wastewater quality standards[16].

Water management is the most important part of the STBM program. Water is not only used for drinking purposes. But it is also needed to meet the needs of sanitary hygiene. Based on Minister of Health Regulation No. 32 of 2017, water for sanitary hygiene purposes is defined as water of a certain quality used for daily needs whose quality is different from the quality of drinking water. Water for sanitary hygiene purposes is used for maintaining personal hygiene such as bathing and brushing teeth, as well as for washing food, cutlery, and clothing. [17].

The quality of water for sanitary hygiene purposes influences the health quality of the people who use it. Water can be a medium for transferring disease agents into the human body or as it is commonly called *waterborne for* example, the entry of E. Coli bacteria into the human body through drinking water so that E. Coli bacteria are used as drinking water quality standards and sanitation hygiene. [18]. Therefore, the government through the Health Service is responsible for monitoring water quality regularly, especially for drinking water and sanitation hygiene [17,19]. One of the sources of water used by the community for hygiene and sanitation purposes is river water, especially the settlements around the river banks.

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Apart from the aspect of water quality, the occurrence of diseases due to a lack of sanitation and hygiene can also be caused by a lack of public knowledge about clean and healthy living behaviors. The results of research in the West Bandung area show that clean and healthy living behavior is related to the incidence of diarrhea and dengue fever dengue [(20)]. It could be, the water used meets health requirements but the water treatment method does not comply with health standards or the habit of not washing hands before processing food and drinks[(21)].

Updating the lifestyle of the people who live around the river banks is still hampered by the inadequate condition of the river environment. Based on data from the Central Statistics Agency (BPS) for East Kalimantan, more than 3% or around 24,000 Samarinda residents still rely on river water for bathing, washing, and toilets (MCK). Several locations in Samarinda City still use river water for hygiene and sanitation purposes, such as in the regions Benma Reservoir, Lempake Jaya, around street of Lambung Mangkurat and street of P. Hidayatullah[(22)]. This tendency then hurts the condition of society. The condition of the river is narrowed because it is covered by settlements and people's houses, making river water even more unfit for use because of waste from people's homes. In addition, living around polluted riverbanks can threaten health, considering that various wastes enter the river. Starting from household waste to industrial waste.

The government is required to resolve these problems, so as not to cause negative implications for environmental health. The government must be able to determine options for solving environmental health problems based on appropriate public policy analysis. Public policy in general addresses how public and community issues and problems are structured (*constructed*) and defined (*defined*), and how they are placed on the government's political policy agenda about environmental health [(23)]. Therefore, an analysis model is needed to find out how the substance of the policy includes information about problems, solutions, realities, and impacts that may arise as a result of implemented policies[(24)].

Local government policies are the spearhead in the process of improving public health status. However, in the application of policies made by the government, the role of the community is needed, especially in policies related to the interests of the public, known as public policy. Public policy is synonymous with the interaction of various dimensions of life such as social, cultural, economic, and political[(25)].

4. Conclusions

This study concludes that there are four strategies used by the Samarinda City Health Office in improving the quality of the implementation of the STBM program. The first strategy is the involvement of the head of the district, head of sub-district, and *natural leader* in organizing and implementing the STBM program. The second strategy is to increase the size of the STBM budget each year. The third strategy is to improve the quality of environmental health workers in supporting the STBM program maximization. The fourth strategy is making regulations from the local government regarding the implementation of STBM in each sub-district. Suggestions in this study are that the Health Office must increase the quantity and quality of environmental health workers to support maximizing the triggering program in each village.

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