# IMPROVEMENT OF CLEAN WATER FACILITIES THROUGH THE MAKING OF CLEAN WATER FACILITIES AND WATER TREATMENT MEDIA IN RAWA JAYA VILLAGE, PEMULUTAN DISTRICT, OGAN ILIR REGENCY IN 2021

**Priyadi [1], Kamsul [2], Diah Navianti [3]**

Politeknik Kesehatan Kemenkes Palembang.

[1] priyadikamidi9@gmail.com, [2] kamsul.mdh@gmail.com, [3] dnaviantidiah9@gmail.com

## Abstract

Clean water is a very vital need for the community and its role can cause disease if it is not monitored for quality and clean water facilities. The community's clean water facilities need to be monitored for elements that can pollute clean water that needs improvement so that the quality of clean water can be maintained. The coverage of clean water facilities can be increased through the manufacture of clean water facilities and the use of raw water by processing it first so that the physical quality of water meets health requirements. The geographical condition of a residential area in the swamp area and riverbanks becomes a problem and challenge in obtaining clean water sources for the community. Several efforts must be made in anticipating negative impacts, including the creation of clean water facilities and water treatment media in reducing the levels of pollutants in the water. In this community service, the object of service is the Clean Water Facility which is still low at 5.4%, and the use of surface water that has not been treated so that water treatment media is needed to meet health requirements to be used as a source of clean water for the community. Making clean water facilities and water treatment systems will improve the quality of water that will be used by the community.

**Keywords:** Clean Water Facilities, Dug Wells, Clean Water Treatment Systems.

## INTRODUCTION

Water is one of the components that make up the environment so the availability of quality water identifies a good environment (Kusnaedi, 2010). The water needed by the community is clean water that can be consumed directly or indirectly. Clean water is water used for daily needs whose quality meets health requirements and can be drunk if it has been cooked at a high temperature, while drinking water is water whose quality meets health requirements and can be drunk directly. Water quality includes physical, chemical, and biological parameters that have been determined and outlined in the Regulation of the Minister of Health of the Republic of Indonesia No. 32 of 2017. The average water requirement for the human body is 2.5 liters for consumption or the equivalent of eight glasses per day. This is because the human body consists mostly of water, between 60% - 70% of the total body weight. Drinking water is a major need in human life that requires healthy quality and sufficient and continuous quantity (Febrina and Ayuna, 2015). The

number of water needs of each population range from 60 liters/person/day, namely the domestic water needs of residents in rural areas, to >150 liters/person/day, namely the domestic water needs of residents in cities (Sudarmadji, Hadi and Widyastuti, 2014). If the amount of water consumed is less than the ideal amount, the body will lose a lot of fluids (dehydration) which causes the body to become weak, and tired and experience health problems and even lead to death (Asmadi, Khayan, and Subaris, 2011). To fulfill water needs, the community can use several clean water facilities to meet their daily needs, one of the sources used is groundwater using dug wells, besides that there are still many people who still use river water and swamp water. Water quality is influenced by the surrounding environment, if the environment contains pollutants or pollutants, the water quality will be polluted through soil media, liquid waste, or garbage (Saleh, 2013). In addition to the chemical content, there is also the turbidity of raw water. Turbidity is caused by the presence of mixed objects or colloidal objects in the water. This makes a real difference in terms of aesthetics as well as in terms of water quality itself (Hefni, 2003). Turbidity of water can be caused by the presence of inorganic and organic materials contained in water such as mud and materials produced by industrial waste. The level of turbidity is measured based on the effect of light as the basis for measuring the state of raw water with the NTU (Nephelometric Turbidity Unit) or JTU (Jackson Turbidity Unit) or FTU (Formazin Turbidity Unit) scale. Turbidity is expressed in units of turbidity, which is equivalent to 1 mg/liter of $SiO_2$. In water areas or most of the territory, waters are very dependent on surface water sources such as river water, swamp water, and some well water. This condition requires supervision so as not to cause health problems for the community. For this reason, efforts are needed to improve/manufacture clean water facilities and water treatment methods so that it is hoped that the water used by the community has met health requirements. Some analyzes of the existing situation in community settlements are as follows;

a. The settlement of the Rawa Jaya Village community is on the riverbank which is a water/swamp/rice field area.

b. Coverage of clean water facilities in Rawa Jaya Village is still low, namely 5.4% in the form of protected dug wells, the rest of the community uses surface water as a source of clean water.

The problems that can be formulated from the situation analysis in Rawa Jaya Village, Pemulutan District are;

a. Economic conditions, behavior, knowledge, and culture as factors that can affect the low coverage of clean water facilities (5.4%)

b. Community participation has not been optimal in making clean water facilities.

The target data for activities in Rawa Jaya Village are the targets that will be involved in the activity are the Heads of the Family, Youth Organizations, and PKK women and village officials. The strategic targets are households located on the banks of the river that still make direct use of river water and swamp water. Efforts to socialize the importance of the quality of clean water used so that the community can avoid the negative impact of the raw water that people use.

## IMPLEMENTATION METHOD

Solutions to problems faced by the community as described previously will be anticipated with several activities, namely;

a. Provide socialization of clean living behavior and the importance of using clean water that meets health requirements.
b. Provide counseling about clean water and clean water facilities that meet health requirements.
c. Carry out the manufacture of clean water facilities in the form of dug wells and water treatment media.
d. Provide input and socialization to the community and village government.

## RESULTS AND DISCUSSION

The community still uses surface water such as river water and swamp water without prior treatment, which can become a health problem, in addition, to clean water facilities. Based on this, it is necessary to manufacture clean water facilities and surface water treatment media. Efforts to make clean water facilities and raw water treatment media as well as community participation in maintaining clean water facilities that have been made are solutions to the problems experienced by the community. The facilities and tools used are materials and tools for socialization and counseling about clean water and clean water facilities, raw water treatment media, banners, and banners made by students.

This effort is expected to be a preventive and promotive effort in preventing diseases based on the water environment or those transmitted through water media. The results of community service activities are in the form of 1 (one) unit dug well and water treatment media. By making this clean water facility, it is hoped that the surrounding community can use it for their daily needs.



**Figure 1. The Process of Making Dug Wells**
**Source: Community Service Activity Report**



**Figure 2. The process of making storage media and water treatment for dug wells**
**Source: Community Service Activity Report**

**Figure 3. The process of testing dug well water treatment media**
**Source: Community Service Activity Report**

## CONCLUSION

The implementation of the efforts needed by the community in improving clean water facilities in the form of dug wells and water treatment media that will be used to meet daily needs.

## REFERENCES

Chandra, B., 2007, Kesehatan Lingkungan, Penerbit EGC, Jakarta.

Chandra, Budiman. 2006. Pengantar Kesehatan Lingkungan. Jakarta. Kedokteran EGC

Effendi, Hafni. 2003. Telaah Kualitas Air. Yogyakarta. Kanisius

Effendi,H., 2003, Telaah Kualitas Air Bagi Pengelolaan Sumberdaya dan Lingkungan, Kanisius, Yogyakarta.

Djasio Sanropie 1989. Air Bersih, Terbitan: Pusdiknakes Departeman Kesehatan RI Pusat Pendidikan Tenaga Kesehatan,.

Kusnaedi, 2004, Mengolah Air Gambut dan Air Kotor Untuk Air Minum, Penerbit Swadaya, Jakarta.

Laila Febrina dan Astrid Ayuna, 2015  Studi Penurunan Kadar Besi (Fe) Dan Mangan (Mn) Dalam Air Tanah Menggunakan Saringan Keramik, Jurnal Teknologi, UMY, Yogyakarta

Mashadi Ahmad, 2018,  peningkatan kualitas ph, fe dan kekeruhan dari air sumur gali dengan metode filtrasi, Jurnal Riset Rekayasa Sipil Universitas Sebelas Maret

Pradana, DT 2019,   Aerator and Filtration Effectiveness Cone Shell in the Lower Levels of Iron and Turbidity Water Well, Jurnal Ilmiah Ilmu Kesehatan: Wawasan Kesehatan

Slamet, J., S., 2009, Kesehatan Lingkungan, Universitas Gadjah Mada, Yogyakarta.

Warlina, Lina (2004), Pencemaran air:sumber, dampak dan penanggulangannya, Makalah pribadi pengantar ke falsafah sains, Sekolah pasca sarjana S3,IPB. Bogor.

Widowati,W.2008. Efek Toksik Logam Pencegahan Dan Penanggulangan Pencemaran,Andi Yogyakarta.

Wardhana, W., A., 2004, Dampak Pencemaran Lingkungan, Cetakan keempat, Penerbit ANDI, Yogyakarta.