

Evaluation Of Sanitation Implementation Of Refill Drinking Water Depots In Muaro Jambi District

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Abstract. *Background: Evaluation of cross-sectoral control of refillable drinking water depot is a strategic role in protecting consumers to obtain standardized drinking water quality. Objective: The purpose of this study was to evaluate the factors in the control and management of refillable drinking water depot in the working area of the Muaro Jambi District Health Center. Methods: The method used was a descriptive qualitative approach, which is to understand the phenomenon of the research subject holistically. Results: The results showed that the evaluation conducted by the health office was not optimal, most of the refillable drinking water depots in the Puskesmas working area had not been inspected. This is influenced by limited human resources in monitoring and evaluating each refillable drinking water depot, lack of socialization and education to refillable drinking water depot businesses and the community regarding the importance of consuming quality-assured drinking water, and especially the lack of awareness of refillable drinking water depot businesses to pro-actively meet drinking water quality standards. Conclusion: The lack of optimal cross-sectoral control of refillable drinking water depots is influenced by human resources and socialization and education programs, along with community awareness. It is expected that there will be more intensive integration between the health center, health office, and village officials who play a role in monitoring and evaluating the management of refillable drinking water depot.*

Keywords: *evaluation, refillable drinking water depot*

INTRODUCTION

Drinking water is defined as water that can be drunk directly and meets health standards either through a treatment process or without a treatment process. The drinking water industry is growing along with the high level of demand for drinking water for the community. Businesses/industries that process raw water into drinking water and then sell directly to consumers are called drinking water depots. Procurement of clean water for drinking water purposes must meet the requirements set by the government. If drinking water has met the physical, microbiological, chemical, and radioactive requirements, then the drinking water is said to be safe for consumption for health.

Achieving the Sustainable Development Goals (SDGs) is one of the goals and commitments that Indonesia must realise. One of these targets is "Realising Access to Safe and Sustainable Drinking Water and Sanitation for All." Therefore, the Government has aligned

the SDGs targets with the 2020-2024 National Medium-Term Development Plan (RPJMN) which mandates the realisation of 90% access to proper sanitation.

Based on WHO data (2019), it is known that nearly 40 per cent of fatal diseases in all countries are related to poor water quality. In addition, WHO also said that about 2.6 million people worldwide die each year from diseases caused by polluted water or water that deviates from health standards. According to UNICEF, nearly 70 per cent of the 20,000 household drinking water sources tested in Indonesia were contaminated with faecal matter, contributing to the spread of diarrhoeal diseases, a leading cause of child mortality, in a new study.

As many as 29,1% of households make refill drinking water as the main source of drinking water, 19,09% of households choose to drink water from boreholes/pumps, as many as, 14,35% of households drink water from wells, 10,23% of households drink from bottled water, and 9,87% of households choose to drink water from PDAM. This shows that refill drinking water is still the most widely used option by the community (Badan Pusat Statistik (BPS), 2020).

Based on data from the Ministry of Trade in 2021, the Directorate General of Consumer Protection and Trade Order (PKTN) found violations related to consumer protection, one of which was that 31.553 Refillable Drinking Water Depots (DAMIU) were not food sanitary hygiene (HSP) compliant, out of a total of 60.272 DAMIUs recorded, only 28.719 were food sanitary hygiene compliant.

Covering an area of 5.246 km², Muaro Jambi Regency is one of the regencies in Jambi Province which administratively consists of 11 sub-districts, 150 villages and 5 urban villages. The population of Muaro Jambi Regency was recorded at 397.351 people in 2020, with a population growth rate of 3,93 per cent per year. As the population increases, the management and evaluation model of DAMIU growth becomes increasingly important as it continues to grow to fulfil the growing demand for drinking water in the community.

Based on preliminary data in Muaro Jambi Regency, it is known that in 2022 there were 400 DAMIU businesses that had obtained licences through recommendations from the Muaro Jambi Regency Health Office, but currently only 328 DAMIU are still active. Of the 328 active DAMIU, only 27,44% routinely have their water quality checked at the laboratory of the Muaro Jambi District Health Office, which is 90 DAMIU. Therefore, information in the form of geographical and demographic mapping is needed to be used as a reference in decision-making with relevant stakeholders on how to improve the supervision of DAMIU in Muaro Jambi Regency in accordance with the level of need and affordability for the wider community in terms of number and feasibility.

RESEARCH METHODS

The type of research used was descriptive qualitative research with an evaluation approach. The subject of this study was the overview of DAMIUs in Muaro Jambi District, where one health centre working area from each sub-district was taken as the research locus, totalling 11 health centre working areas in Muaro Jambi District.

RESULTS AND DISCUSSION

Evaluation of DAMIU Sanitation Implementation

Public health center is the Technical Implementation Unit (UPT) of the District/City Office. Public health center play a role in conducting sanitation and clean water guidance activities, including in DAMIU In Muaro Jambi district, most public health center have not implemented guidance to DAMIU optimally and regularly.

The Health Office is an implementing element of regional autonomy in the health sector and is led directly by a Head of Service. The health office acts as a supervisor in ensuring the water quality of DAMIU, which is carried out continuously so that drinking water consumed by the public does not cause health problems. Supervisory activities carried out by the health office include field observations, sanitation inspections, sampling, and guidance to certain designated DAMIUs, as well as providing recommendations for licensing the establishment of DAMIU.

In Muaro Jambi District, DAMIU workers tend not to apply the principles of hygienic sanitation of premises and equipment and are not equipped with sterilisation equipment or low killing power against bacteria, hence the quality of drinking water produced becomes a health risk, and many depots are not aware of the importance of periodic laboratory examination of water.

In DAMIU under the supervision and guidance of the health office, it was found that all DAMIU are made of food-grade materials, raw water tanks are covered and protected from the sun, gallon washing and rinsing stations are available, gallon filling facilities are enclosed, new and clean bottle caps are available, and all depots replace saturated filters.

In terms of the hygiene of the handlers (DAMIU workers), there are no DAMIU workers who routinely have their health checked at least once every 6 months. This is important to screen for waterborne diseases, as well as to prevent contamination of the drinking water produced if workers suffer from airborne or droplet-borne diseases.

In the sanitation hygiene aspect, it is known that most workers do not wash their hands with soap first when filling drinking water. It is feared that this could lead to contamination of the re-drinking water. Workers who work in addition to filling gallons also do other work, because most DAMIU are attached to shops or gas cylinder sales. Dirty or contaminated hands can transfer pathogenic bacteria and viruses in the body, faeces or other sources to food and almost all workers at the DAMIU do not have a depot sanitation hygiene course certificate.

On the raw water source aspect, it was found that most DAMIUs did not have proof of water source certificate. According to the Decree of the Minister of Industry and Trade No. 651/MPP/Kep/10/2004, raw water quality testing is conducted once every three months for microbiological tests, and twice a year for complete chemical and physical parameter tests.²⁵ According to the Regulation of the Minister of Health of the Republic of Indonesia No. 43/2014 on hygiene and sanitation of drinking water depots, DAMs must have written evidence/water source certificate.

Factors hindering the evaluation of DAMIU Sanitation Implementation

In the process of licensing DAMIU businesses in Muaro Jambi Regency, there are inhibiting factors that researchers found in the field. The factors that hinder DAMIU licensing in Muaro Jambi Regency include human resources, communication and socialisation, lack of awareness from DAMIU business owners, and the absence of strict sanctions from the authorised agency in taking action against violations of unlicensed and unfit DAMIU. Therefore, many DAMIU entrepreneurs open DAMIU without proof of licence.

CONCLUSIONS AND SUGGESTIONS

The trend of people in Muaro Jambi Regency using refill drinking water is increasing. The deteriorating environmental conditions make them worried about consuming groundwater, even tap water provided by the government. Unfortunately, not all refillable drinking water units (DAMIU) are properly managed according to the requirements of Minister of Health Decree No. 907/Menkes/SK/VII/2002. Therefore, periodic and continuous guidance and supervision by both the community health centre and the health office is needed for all DAMIU.

REFERENCE

- Azwar, A. 2010. Pengantar Administrasi Kesehatan. Jakarta: Binarupa Aksara.
- BPS. Indikator Perumahan Dan Kesehatan Lingkungan 2020. Published Online 2020. <https://www.bps.go.id/publication/2020/12/31/68cf1c94411883822b83952f/indikator-perumahan-dan-kesehatan-lingkungan-2020.html>
- Davis, B. E., 1996. GIS: A Visual Approach. Ist edition. OnWord Press. Camino Entraa Santa Fe, USA

Deperindag. 28000512_Kepmenperindag_Nomor__651_Tahun_2004.Pdf. Published Online 2004.

[Http://jdih.kemendag.go.id/Backendx/Image/Regulasi/28000512_Kepmenperindag_Nomor__651_Tahun_2004.Pdf](http://jdih.kemendag.go.id/Backendx/Image/Regulasi/28000512_Kepmenperindag_Nomor__651_Tahun_2004.Pdf) <https://jambi.tribunnews.com/2021/07/27/dari-400-depot-air-isi-ulang-di-muarojambi-hanya-90-yang-rutin-lakukan-pemeriksaan-kualitas-air>

Prahasta, E. (2005). Sistem Informasi Geografis: Konsep-konsep dasar. Bandung: Penerbit Informatika.

Health Organization. 2019. Definition, Diagnosis And Classification Of Waterclean:Report Of A Who Consultation. Part 1 Nw 2. Gw Health Organization; 2019.

Kemendag. Siaran Pers Siaran Pers. *Surpl Neraca Perdagang Semakin Menguat, Ekspor Agustus 2021 Catatkan Rekor Tertinggi*. 2020;(5):6-8.

Marhamah An, Santoso B, Santoso B. Kualitas Air Minum Isi Ulang Pada Depot Air Minum Di Kabupaten Manokwari Selatan Refill Drinking Water Quality At Drinking Water Depots In South Manokwari Regency. 3(1):61-71.

Permenkes NO 43 Tahun 2014.
<https://peraturan.bpk.go.id/Home/Details/119084/Permenkes-No-43-Tahun-2014>

Permenkes RI. Peraturan Menteri Kesehatan Republik Indonesia Nomor 492/Menkes/Per/Iv/2010 Tentang Persyaratan Kualitas Air Minum. *Peratur Mentr Kesehatan Republik Indones*. Published Online 2010:Menkes.

Prahasta, Eddy, 2002. Sistem Informasi Geografis : Tutorial ArcView.CV Informatika, Bandung

Rice,2000,"GIS/DataCenter:GIS Links",<http://riceinfo.rice.edu/Fondren/GDC/gislinks.shtml>

Sugiyono. 2009. Metode Penelitian Kualitatif, Kualitatif dan R&D. Jakarta: Alfabeta.

Unicef. No Title. <https://www.unicef.org/indonesia/id/press-releases/indonesia-hampir-70-persen-sumber-air-minum-rumah-tangga-tercemar-limbah-tinja>

World Health Organisation. 2013. WHO evaluation practice handbook.