Survey On Provision Of Clean Water And Household Water in Kampung Amanuban Oebufu Village Oebobo Sub District in 2017

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Abstract
Clean water is water that is used for everyday purposes whose quality meets health requirements and can be drunk when cooked. The quality of drinking water is one of the important things that must be considered, so that the water is safe for consumption by the community. This study aims to determine the availability of clean water and household drinking water supply which includes the type of clean water facilities used, the condition of clean water facilities, how to process drinking water, the type and handling of drinking water containers. The type of research used is descriptive with a sample of 220 samples. Data collection methods used was primary and secondary data. Data obtained through direct observation and data from the Village Office were analyzed descriptively. The results showed that 99.2% of the family used dug wells and 0.8% used springs as clean water facilities for daily needs. The community processes water by boiling as much as 99.1%. There were 71 respondent (32.3%) using kettles, thermos and closed buckets as drinking water storage containers and drinking water storage containers which were cleaned several times a week as many as 160 respondents (72.7%). It can be conclude that the types of clean water facilities in Kampung Amanuban, Oebufu Village are 120 digging wells and 1 water spring. The condition of the dug well facility shows that there are 3 facilities with a high level of pollution risk, 67 facilities with a high level of pollution risk, 46 facilities with moderate pollution risk levels and 4 facilities with a low level of pollution risk. The way people in Kampung Amanuban, Oebufu Village, Oebobo Sub-District, in processing water is boiled by 218 respondents, and 2 respondents use bottled water / gallons. Drinking water storage containers used by the community. The handling of drinking water storage containers by the community in Amanuban Village is done through container cleaning, where as many as 160 respondents cleaned drinking water containers several times a week, 34 respondents (15.5%) cleaned drinking water containers once a week, and 26 respondents cleaned storage containers every day.

Keywords: Clean Water Supply, Household Drink Water

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INTRODUCTION

The provision of clean water is still a serious problem in this country. Fulfillment of drinking water needs is not only oriented to the quality as well as the health requirements of drinking water (physics, chemicals and bacteriology requirements) but at the same time concerns the quantity and continuity. On the other hand, the Government must consider the fulfillment of public access to drinking water based on national and global challenges. The use of clean water for households is observed in its use, so as to obtain the distribution of water use for some household activities.

Water supply in East Nusa Tenggara Province (NTT Province) is carried out through Regional Water Supply Companies (PDAMs), dug wells, rivers, pumps, etc. but has not reached the entire population due to various problems ranging from inadequate availability of water sources, the amount of low rainfall, the condition of the land, to the socio-cultural community. Distribution of population on many islands is also a problem in providing water to all people due to differences in conditions on each island. In terms of rainfall, NTT Province which is a dry climate region, the availability of water will depend on the rainy season, even though the rainy season in NTT Province is shorter which ranges from 3-4 months or December - March (Nainiti, 2004).

The community's clean water needs are closely related to the population in a region. Oeboho Subdistrict in Figures 2016 shows that the total population in Oebufu Village by the end of 2015 was 17,616 people (second in Oeboho Subdistrict after Fatululi Village) with a population density of 8,942 per KM2 (BPS Kota Kupang, 2017). By looking at the number and population density that is quite high in Oebufu sub district, it is certain that...
the need for clean water will also increase.

Amanuban Village is one part of the area located in the Village of Oebufu with the number of Family Heads 489 Household Heads. Based on the results of the survey and interviews with the heads of RTs in Amanuban Village, it was seen that there was an increase in the population as a result of migration or the movement of people from other districts to this area to find work or continue their studies. In 2016, the number of households in this region was 476 households and in 2017 was 489 households. This can have an impact on increasing the need for clean water for people in this region.

THE METHODS

The type of research used in this study is a qualitative survey which aims to obtain an overview of the provision of clean water and household drinking water in Amanuban village, Oebufu Sub-district, Oebobo District. The variables in this study are the types of clean water facilities used, the condition of clean water facilities, the method of processing household drinking water, types of drinking water storage containers and handling of drinking water storage containers.

The population in this study were all heads of families in Amanuban Village, Oebufu Subdistrict, Oebobo Subdistrict, namely 489 households, with a sample size of 220 samples. The sampling technique used at the time of data collection is accidental or accidental sampling technique, where data collection is based on the head of the household or household who at the time of data collection is willing to check the condition of clean water facilities and household drinking water treatment (Notoatmodjo, 2005). Data obtained from interviews and observations made in the field at the time of the study using questionnaires, observation and sanitation inspection forms for clean water facilities, namely in the form of data on the availability of clean water and drinking water supply in Kampung Amanuban, Oebufu Subdistrict, Oebobo District. The research data is presented in the form of tables or graphs and analyzed descriptively to get an idea of the type
and condition of clean water facilities and how to safeguard household drinking water in the village of Amanuban, Oebufu Subdistrict, Oebobo Subdistrict, Kupang City.

**RESEARCH RESULTS**

Household drinking water in Kampung Amanuban Oebufu Village can be described as follows.

**Types of Clean Water Facilities**

The types of clean water facilities used by the community in Kampung Amanuban, Oebufu Village, can be seen in the following table.

<table>
<thead>
<tr>
<th>No</th>
<th>Type of Clean Water Facility</th>
<th>Number of Facilities</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Dug Well</td>
<td>120</td>
<td>99.2</td>
</tr>
<tr>
<td>2</td>
<td>Spring</td>
<td>1</td>
<td>0.8</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td><strong>121</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

*Source: Primary Data Processed, 2017*

The table above shows that more than 99% of the clean water facilities utilized by the community in Amanuban Village Oebufu Sub District are dug wells. Clean water facilities used by the community in Amanuban Village are accessed directly by the community and generally use the water dynamo for distributes water from the existing facilities to the house and also those taken directly by family members in the house. In detail is shown in the following picture.

**Condition of Clean Water Facilities**

Distribution of the condition of clean water facilities used by the community in Amanuban Village can be seen in table 3.2. Table 3.2 shows that for dug well facilities, the condition of facilities with the highest risk level is in the “High” category with the percentage reaching 55.37% facilities (67 dug wells).
and the lowest for the "Very High" category with a percentage reaching 2.48% (3 wells dug). For Spring Protection facilities, which only consist

**Table 3.2 Distribution of Clean Water Facilities in Amanuban Village Oebufu Sub District in 2017**

<table>
<thead>
<tr>
<th>No</th>
<th>Type of Facilities</th>
<th>Condition of Water Facilities</th>
<th>Number of Facilities</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Dug well</td>
<td>Very high</td>
<td>3</td>
<td>2.48</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Height</td>
<td>67</td>
<td>55.37</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Moderate</td>
<td>46</td>
<td>38.02</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Low</td>
<td>4</td>
<td>3.31</td>
</tr>
<tr>
<td>2</td>
<td>Springs</td>
<td>Very high</td>
<td>1</td>
<td>0.83</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Height</td>
<td>0</td>
<td>0.00</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Moderate</td>
<td>0</td>
<td>0.00</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Low</td>
<td>0</td>
<td>0.00</td>
</tr>
<tr>
<td></td>
<td><strong>Jumlah</strong></td>
<td></td>
<td><strong>121</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

*Source: Primary Data Processed, 2017*

**Drinking Water Treatment**

The steps taken by the community in Amanuban Village in treating water so it is safe to consume it looks like in the table as follows.

**Table 3.3 Distribution of Ways to Treat Water Consumed by the Household in Amanuban Village, Oebufu Subdistrict, 2017**

<table>
<thead>
<tr>
<th>No</th>
<th>Ways of Processing</th>
<th>Number of Respondent</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Boiling</td>
<td>218</td>
<td>99,1</td>
</tr>
<tr>
<td>2</td>
<td>Using Chlorine</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>3</td>
<td>Filtering with Cloth</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>4</td>
<td>Water Filter</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>5</td>
<td>Precipitating</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>6</td>
<td>Others (Refill Water)</td>
<td>2</td>
<td>0,9</td>
</tr>
<tr>
<td>7</td>
<td>No Treatment</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
<td>220</td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

*Source: Primary Data Processed, 2017*
Table above shows that more than 90% of respondents chose to treat water so that it was suitable for consumption by boiling, while the rest use refill water obtained from Refill Drinking Water Depots and exchange gallon water produced by the Bottled Drinking Water company.

*Types of Drinking Water Storage Containers*

The drinking water reservoirs used to store household drinking water consumed by the community in Amanuban Village vary. In general, people in this region use more than one kettle storage container, thermos, closed buckets and some use dispensers to store treated drinking water. In detail about the drinking water storage containers used by the community in this region can be seen in the following figure.

The above figure shows that there are variations in the type and number of containers used by the community in Kampung Amanuban Kelurahan Oebufu, Oebobo District. This can be seen from the presence of 71 respondents (52.3%) who use kettles, thermos, and closed buckets as storage containers and are the
most users of these types of containers, while the smallest one is as many as 1 respondent utilizing dispensers, kettles and closed buckets as drinking water storage container.

**Handling Drinking Water Containers**

The handling of drinking water containers is a way for the community in Amanuban village Oebufu Sub District to handle drinking water storage containers so that the container remains clean is shown in Figure 3.3. In the figure, it can be seen that 72.7% of the people in this area clean their holding containers several times a week, and only 11.8% of respondents clean their containers every day.

![Figure 3.3 Distribution of Frequency of Cleaning of Drinking Water Storage Containers in Communities in Amanuban Village in 2017](image)

**DISCUSSION**

**Types of Clean Water Facilities**

The results showed that 99.2% of the people in Amanuban Village, Oebufu Subdistrict, Oebobo District used well dug and 0.8% used springs as a clean water facility for daily needs.

According to the Ministry of Health of the Republic of Indonesia and the Directorate of water sanitation (1996), dug wells are a means of providing clean water by digging up the soil to get a certain depth of water, while springs are groundwater that comes out
directly from the soil surface. Generally, springs have the same water quality as the quality of deep ground water and are very good for drinking. The quantity of water produced by springs is quite a lot and is not influenced by the season, so that it can be used for the public interest for a long time (Sutrisno, p.19, 2006).

Research conducted by Puspitorini and Masduqi (nd) on the Strategy of Providing Clean Water in Villages Prone to Clean Water in Ponorogo District, East Java Province also mentions several types of water sources including dug wells as an alternative source of clean water that is used by the community. The source of clean water that is utilized by the community should have construction that is protected from sources of pollution. This will greatly affect people’s health conditions that will consume clean water from these sources. The source of clean water that has been polluted, should be processed first before being consumed by the community. Like the research conducted by Wiyono, et al (2017) who tried to design a simple drinking water treatment system to improve the water quality of the Martapura river that is used by the community. For this reason, let the facilities or sources of drinking water be aware of the conditions so that they avoid the risk of pollution which will endanger the people who consume water from these sources.

**Conditions for Clean Water Facilities**

The results showed that 99.2% of the people in Amanuban Village, Oebobo Subdistrict, used dug wells as a source of clean water. Of the 120 dug wells in the area, 2.48% of dug wells showed a high level of risk of pollution, 55.37% dug wells at high risk, 38.02% dug wells for moderate pollution risk and 3.31% facilities under Low pollution conditions. Besides the dug well facilities, spring facilities are also used by people in this region. The results of sanitation inspections of these facilities show a high level of risk of contamination.

Digging well facilities that have a score of risk level of High and High Pollutants are influenced by the depth of the well wall from the ground surface not 3 meters, the lips of the well that are not tightly closed wells that are in front of the
house, adjacent to the road and the presence of trees so as to allow for other pollution such as garbage entering the well (no more than 10 meters). The risk of pollution levels is also affected by the sewerage of damaged wastewater and even there is no sewerage, and there is a pool of water on the cement floor.

In order to maintain the condition of the dug well water that is consumed properly, it is necessary to supervise and repair the well dug facilities based on the level of risk of pollution. The dug well with the risk of high and high pollution is done by the construction of dug wells from conditions that do not meet the requirements to be eligible both in terms of distance and dug well construction, while dug wells with a level of pollution are being sampled and samples examined to see bacteriological quality and chemistry.

Springs have a very high risk level because the construction of the building is only closed using zinc which allows rainwater to enter, no drain pipe is available and no manhole is provided. The condition of the facilities that are not too much attention by the community resulting in a high risk of contamination, is probably caused by the level of public understanding of the construction of clean water facilities that meet the requirements so that it does not affect the health of the community who utilize clean water from these facilities.

Treating Ways of Household Drinking Water

The results of interviews with the community in Kampung Amanuban, Oebufu Subdistrict, Oebobo Subdistrict, are known that 99.1% of the people process water by boiling, and 0.9% use bottled / gallon water produced by the Bottled Water company.

Research conducted by Puspitasari and Mukono (2013) on the relationship of bacteriological quality of well water and healthy behavior with the occurrence of Waterborne disease in Tambak Sumur Village, Waru District, Sidoarjo Regency showed that most respondents (86.67%) had not yet processed or cooked water with the right way or boiled before consumption. Thus it can be said that the community has not yet realized the importance of consuming water that is
truly feasible so as to avoid disease. The behavior of cooking or boiling water well is highly recommended so that it can kill pathogenic germs contained in the water to be consumed.

Boiling water is the most common way to get healthy drinking water. By boiling the water to a boil and leaving it for a few minutes, the germs inside will die.

**Types and Ways of Handling Drinking Water Containers**

After water treatment, the next step is to store drinking water safely for daily needs. The results of research conducted in Amanuban Village, Oebufu Subdistrict, Oebobo Subdistrict, the type of container used by the community are dispensers, kettles, flasks, buckets/closed pan. There were 71 respondents (32.3%) who used kettles, thermos, and closed buckets as storage containers and were the most users of these types of containers, while the smallest one was 1 respondent who used a dispenser, kettles and closed buckets as drinking water storage containers.

The results showed that drinking water storage containers were cleaned several times a week 160 respondents (72.7%) cleaned the drinking water container several times a week. While 34 respondents (15.5%) cleaned the drinking water container once a week. Washing and handling of drinking water storage is an inseparable part of the pattern of clean and healthy living behavior. The container used should always be clean. Frequency washing container is very important in preventing the development of germs in water contained in the container. For this reason, it is advisable for the public to clean the storage container as often as possible, so that the water consumed is really good and does not cause disease for the family.

**RECOMMENDATION**

Types of clean water facilities that are used most by the community in Amanuban Village are dug wells. Judging from the conditions of the ingredients, the conditions with the highest risk of "high" pollution are 67 wells of dug wells.
Clean water that is used is then processed by cooking or boiling and stored in a closed container which is generally cleaned several times a week.

For this reason, the government and the community were asked to always campaign for a clean and healthy lifestyle related to the provision of clean water and safeguarding household drinking water.

REFERENCES


Regulation of the Minister of Health of the Republic of Indonesia Number 492/MENKES/PER/ IV/2010, Regarding Requirements Drinking Water Quality.


Project for central sanitation workers
Education and training of MOH staff.


