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[Japanese Water Quality]

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1. Introduction

1. 01 Research Motive

I researched about the “Water Quality In Japan”. I was interested in this topic because this summer my family and I went on a vacation to the Philippines, and when we went to a region called El Nido Palawan, our tour guide told us to never drink tap water there because we might get sick. We weren’t able to use tap water for drinking, gargling, and even for tooth brushing.

I was very surprised because here in Japan we can use tap water for almost everything we do. There are no effects when we drink tap water in Japan. We even used tap water to wash the rice we eat. From this experience, I remembered that when I was a first year high school student we had a chance to listen to several college courses. I listened to a professor from the Faculty of International Liberal Arts in Juntendo University. The professor talked about water in Rwanda and how he grew up with the environment. I remembered that I was shocked when I heard about it. So, I got interested in why Japanese tap water is drinkable.

In this paper I will summarize why tap water is drinkable and safe in Japan, and why it is not safe to drink tap water in The Philippines and in the Republic of Rwanda.

1. 02 Significance & Purpose of Research

From this research I am going to find a solution to make other countries’ “tap water” drinkable and safe, to make water problems less in our societies. I hope that this paper could save people that have problems with tap water in their lives. By doing this research, I will help people notice how Japanese tap water is clean and that having clean water in our lives is not usual but very special, and that it needs to be appreciated.

1. 03 Research Method

For my research method I will use the next 4 resources.

From the internet I am going to search for how tap water is being delivered and how the other countries need to beware of the water, how is the water kept in Japan, what materials are included in the water in Japan, Rwanda, and the Philippines.

From papers and books, I will be researching about the culture that Japan has in water, and how water is used culturally in Japan.

I will also research about how water in Rwanda and the Philippines is used and the effects of the water. I am going to be hearing from my parents who are from the Philippines and have lived in the Philippines since their childhood.

Regarding Rwanda, I will be researching about people that study about Rwanda and people who have gone to Rwanda.

2. “Tap Water” in Japan

2. 01 Japan’s “Tap Water” is Drinkable

Japan’s tap water is drinkable and safe. The national water infrastructure is reliable, and purification facilities are well maintained, so the tap water is good quality and easy on the stomach. Most of the water supply in Tokyo and major cities comes from dams, reservoirs, or rivers.

Tap water in Japan is purified at water treatment plants through precipitation, filtration, and disinfection, so it can be drunk as it is. Residual chlorine in tap water is caused by the treatment process at water treatment plants. Some European water supplies are disinfected with chlorine and others are not.

From the Ministry of Land, Infrastructure, Transport and Tourism, it is stated that there are only 12 countries in the world, including Japan, where you can drink tap water straight from the tap. “2021 Edition Current Status of Japan’s Water Resources”



国土交通省

図1 国土交通省(国土交通省「2021年版 日本の水資源の現況」)

2. 02 Where does water for households come from?

In 2.01 we learned that Japan’s water is drinkable, but how is the water kept and why is it said that it is well maintained?

From the article that the public relations office government of Japan posted online, **Where does drinking water come from? Where does the used water go? “Water circulation” that supports life**, it is stated that the main source of water that we use daily comes from the river, its source is rainwater that falls from the sky. Rain is caused by clouds that form in the atmosphere when water from the sea and land evaporates. The rain that falls on the ground becomes the river or the underground water, and eventually returns to the sea. The ocean water then evaporates back into the atmosphere, forming clouds and producing rain.

The earth’s water has been circulating in this way since time began. and its total amount has hardly changed.

However, river water also contains substances harmful to the human body, viruses, and bacteria such as E. coli. Therefore, various efforts are being made to ensure that safe water can be obtained at any time, such as by building various facilities such as water purification plants.

2. 03 How safe water arrives from the water source

* Dam - A facility that stores water so that it can be supplied at any time. The amount of water is regulated to prevent flooding during heavy rains and to be available during droughts.

* Water Intake Facilities - A facility that takes in river water or dam water and sends it to a water treatment plant.

* Waterways - Transport the raw water taken to other rivers, water treatment plants, and other locations where it is needed.

* Water Purification Plant - A facility that processes the raw water it takes to produce safe and delicious tap water that you can drink with confidence.

* Water Distribution Plant - A facility that temporarily stores tap water that has been purified at a water treatment plant.

* Water Pipes - Transports tap water from the water distribution plant to the water supply pipes that connect to the faucets in each household.

After we use the water in our homes, such as in the kitchen, bath, toilet, and laundry, it returns to the ocean. However, if we pour dirty water directly into rivers or the ocean after use, the rivers and oceans become polluted, making it difficult for living things to live there and having a negative impact on our health. Therefore, in order to protect the clean water of rivers and oceans, domestic wastewater that has been used at home is purified at a sewage treatment facility before being returned to the river.

In order to comprehensively and integrally promote measures to maintain or restore a healthy water cycle, the “Water Cycle Basic Law” was enacted and came into effect in July 2014.

The Water Cycle Basic Law stipulates that “when using water, efforts should be made to ensure a healthy water cycle.”

Keeping safe and drinkable water depends on our daily actions. We can reduce the time we wash our clothes and wash them all at once, or don't leave the shower running when washing your hair or body. These actions can save water.

We can also wipe off oil stains with paper before washing, to wash away the source of dirt. These small things that we can do in our daily lives can keep the water that we use clean and safe to drink.

3. Differences between “Water” in Japan and Rwanda

3. 01 Water Problems in Rwanda

According to the Rwanda government, basic access to safe drinking water requires water supply facilities must be within 500 meters of the house, and within 200 meters in urban areas. In Rwanda, efforts are being made by donors such as Western countries and Japan. Water supply facilities have been improved, with underground pumps and pumps pumping groundwater being constructed. As a result, access to improved water sources is increasing.

According to JICA, donor countries and aid organizations other than Japan, such as UNICEF, UNDP, World Bank, African Development Bank, Arab Bank for African Economies, European Union Germany, Austria, and the Netherlands, provide assistance in the water supply sector to Rwanda with development being carried out by their respective donors. The regions are

scattered in Rwanda. These donors provide little assistance in the water supply sector. Most of this is grant aid.

Access to safe water is hampered by water quality issues, insufficient public awareness of hygiene, and lack of spring water protection facilities. It has been pointed out that there are few water sources that have been improved due to poor water quality, and that women and children spend time and effort fetching water because of the distance from each house to the water source. Also, issues such as lack of experience in the water supply business of private contractors and a shortage of manpower are causing problems in the operation of water supply facilities.

3. 02 What we can learn from Japan's water

Even in areas like Japan, where it rains a lot, if the population density is high, there will inevitably be a shortage of water.

In order to use safe water stably, it is essential that in addition to facilities to store water, systems to disinfect water as needed and waterways to transport and distribute water to appropriate locations are in place and maintained.

Even though Japan is blessed with an abundance of water, this is not because there is a lot of rain, but because the social infrastructure and mechanisms are stable.

If a country is economically underdeveloped or if the country's system is not in place due to civil war, the water infrastructure may be inadequate, making it impossible to provide a stable supply of safe water, resulting in water problems. The water problem is not a problem because of a dry climate, but it's a social problem.

4. Why water in other countries isn't drinkable

As I stated earlier in my paper, tap water in the Philippines is not drinkable. The biggest difference between tap water in Japan and in the Philippines is that Japan's tap water is soft water but tap water in the Philippines is hard water. Tap water in the Philippines contains lime, which can cause showers to clog. In fact, when Japanese people who are accustomed to soft water try drinking hard water, they may find that the water is different.

There are 193 countries in the world. In at least 150 countries, tap water is not safe to drink. Among them, more than 80% of people in countries in Asia and Africa do not have access to safe tap water. In most countries, this is due to inadequate water and sewage infrastructure. The reason for this is because the country itself does not have the financial resources to build infrastructure, and that due to the size and geographical conditions of the country, it may be too expensive to make sewage treatment plants so that everyone can drink water safely.

The Philippines is a country made up of over 7,000 islands, so it may be difficult to make tap water drinkable due to geographical conditions. On the

other hand, in Japan, the Japan Water Works Association sets standards for whether tap water is drinkable or not. Although there is a long way to go, Japan's tap water is clean compared to other countries in the world.

5. Hard Water & Soft Water

From the information above, people in Japan are used to drinking soft water and not hard water.

I noticed that this relates to the culture of the "Ocha" culture in Japan.

The water that is suitable for Japanese tea is soft water with a hardness of 30 to 80 mg/liter.

When you brew tea with soft water, the ingredients in the tea are extracted well, which gives a good balance of flavor and bitterness.

Can we make Japanese tea from hard water? The answer is no. You aren't able to make Japanese tea with hard water because hard water has a high content of calcium and magnesium, which prevents the components of tea leaves from dissolving.

When my friends or people that I know travel to another country, when they come back they would always say that they got skin or hair trouble during the trip. I thought that this might have some connection with how water is kept or from the places that the water comes from. From my research, I am now sure that it has no connection with it. Well, it might depend on how much calcium the water contains but I thought that it depends on if you are used to hard water or not.

6. Conclusion

From the above, I learned that tap water in Japan is safe because of the water infrastructure that the country has. In countries where water is undrinkable, the main reason why the water is undrinkable is not because it is a dry country or has no source of water, but because the country does not have enough money to afford the water infrastructure and because they have a large population.

In order to solve this problem about the undrinkable water in other countries, we can do some fundraising activities. Before doing the fundraise I can make some posters to post in the school, to let the students understand what the world's situation is. The action that Japan could do is to create an organization that specializes in drinking water. And also they could send some people who can create dams or water purification plants. This is not only the action that Japan could do, but what the developed countries could do.

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[Other Materials]

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