

Ichigo Holdings staff introduce water supply equipment and provide training in Micronesia.

For a World without Water Shortage

A company based in Sendai, Miyagi Prefecture is tackling water shortage problems in Micronesia.

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FOUNDED as a pizza delivery service and restaurant operator in Sendai, Miyagi Prefecture in 1983, Ichigo Holdings Co. now focuses its business on providing solutions to water shortage problems both in Japan and abroad. In recent years, the company has been engaged in a range of projects related to water purification, seawater desalination and groundwater searching.

Masamitsu Miyashita, founder and president of Ichigo Holdings, says, “Beginning around the year

2000, imports of cereal ingredients for pizza dough became unstable, partly because exporting countries suffered a significant drop in cereal production as a result of water shortage. In the wake of this traumatic event, we were strongly inspired to help those countries with their water shortage problems.”

In 2008, Ichigo Holdings developed a trailer loaded with small-sized water purification equipment and a desalination system powered by solar energy that turns seawater into drinking

water, and began exporting the trailer, primarily to countries in the Middle East.

Three years later, the Great East Japan Earthquake occurred in 2011. It caused catastrophic damage in the Tohoku region including Miyagi Prefecture, the homeland of Ichigo Holdings. A tsunami swept away the company’s pizza delivery stations. The company responded by delivering water purification equipment to the people in the disaster-stricken areas and provided water for household purposes and agricultural use.

In the face of the damage caused by the natural disaster, Miyashita became strongly aware of the significant role of water in people’s everyday lives and developed an interest in using water purification technology more extensively for people in need of water abroad.

Miyashita learned that the Japan International Cooperation Agency (JICA) was providing assistance to the Pacific Islands, which are facing the problem of water scarcity. Inspired by the significance of international cooperation, he applied to participate in JICA’s Project for Supporting Japanese Small and Medium Enterprises (SMEs) in Overseas Business, specifically a project involving feasibility survey for the introduction of a mobile drinking water treatment systems in the Federated States of Micronesia, one of the Pacific Island countries that are seriously in need of drinking water. It was



Ichigo Holdings' mobile water purification system (left); local residents learn all about it (right)

adopted by JICA as a cooperation project in 2014.

Micronesia comprises as many as 600 small islands in the Pacific. Their main source of drinking water is rain and well water. Micronesia's water reservoir capacity is low because it is a small country, and months of little rainfall can leave the reservoir below the safe level. Furthermore, natural disasters caused by typhoons and flood tides can often result in less drinking water.

As part of the feasibility survey in Chuuk State, which is the most populous state in the country, Ichigo Holdings conducted field research work regarding the water supply system in current use and its related requirements, performing demonstrations for water purification equipment that was modified to accommodate the local requirements. The water purification system developed by the company adopts reverse osmosis membrane filter technology that is capable of removing impurities such as salt, bacteria and heavy metals. This system has the capacity to produce over 4,000 liters of drinking water from water sourced from the sea, wells and rivers.

The system can be moved

easily because it is small, light (45 kg) and equipped with casters. It is powered by solar energy or gasoline, not electricity.

Miyashita says, "Our system demonstration was well received by the local people. We were very happy to accommodate their request for a system like this. The smiles on their faces when they drink the water make us very happy."

In 2016, the company delivered and installed ten more units of the water purification system at wells, ports and hospitals after making further improvements to the system for ease of use. The system will become operational under local management after verification survey is completed in 2018. Ichigo Holdings provides comprehensive support to the local community for developing human resources that are capable of handling maintenance operations for the system under their own management.

The company's interest is not limited to a water purification system. It is also active in promoting a groundwater exploration system, both in Japan and abroad. Traditionally, none of the many exploration methods ever developed has succeeded in precisely

locating a water vein.

Despite the technological challenges, the company has succeeded in developing the world's first system that is capable of precisely locating underground water veins by using an electric current with a certain frequency under the ground. This system will make it easy to secure water for drinking and agricultural purposes. Moreover, the system can be used to locate areas containing large amounts of rainwater on sloping land. Consequently, it will help prevent mudslides and other related disasters from occurring.

The company launched marketing activities for the groundwater search system from 2014 in Japan and countries including Oman and Ethiopia.

"We often see conflicts occurring between countries, states, or groups over access to water resources. More equal access to water resources will help achieve world peace," according to Miyashita.

There is growing concern that more countries or areas around the world will be faced with water shortage problems in the coming years given the population explosion, the growth of emerging economies, and climate change. Ichigo Holdings aims to develop a mapping system that will be capable of locating groundwater veins all around the world on the Internet, seeking to provide solutions to a range of water problems. 