

OVERVIEW OF ASSISTANCE

Republic of Marshall Islands

US Government USD3 million

Australian Aid AUD200,000

New Zealand Embassy USD100,000

Timeline

- **February 03, 2016:** RMI President H.E. Dr. Hilda Heine declares State of Emergency.
- **March 08, 2016:** RMI President H.E. Dr. Hilda Heine declares State of Disaster.
- **April 27, 2016:** U.S. President Barack Obama Declares Disaster in RMI.

Affected Populations

- **21,000** people affected by severe drought conditions.
- **1,257** households are affected on the outer islands and **5,195** households are affected in urban areas.

Areas of cooperation:

Water, sanitation and hygiene (WASH), supplemental food assistance, education, training and capacity building

Cooperation



With generous support from donors including the Office of US Foreign Disaster Assistance (OFDA), United States Agency for International Development (USAID), Australian Aid and the New Zealand Embassy, IOM has been working with the Government of the Republic of the Marshall Islands (GoRMI) through the National Disaster Management Office (NDMO) since early January 2016 to ensure that basic water, hygiene and nutrition needs are being met during the drought emergency.

The first priority has been to ensure that the most vulnerable beneficiaries have access to clean water. One part of the holistic water security strategy in drought emergencies has been for the GoRMI and IOM to maintain a stock of portable Reverse Osmosis (RO) units that are solar powered and mobile, producing up to 360 gallons per day (gpd) – and deploy them to outer islands during peak dry periods. In addition, IOM has procured three RO units that are capable of producing up to 800 gallons of drinking water per day which will be deployed to outer island high schools. RMI now has a total of 55 RO units servicing 33 communities.

To enable communities to maintain and utilize this lifesaving technology, IOM hosted a four-day training on reverse osmosis (RO) theory and practice in RMI. In June 2016, 14 participants from different professional backgrounds including staff from Marshalls Energy Company (MEC), Kwajalen Atoll Joint Utility Resources (KAJUR) and Ministry of Public Works attended in Majuro. Through IOM's network, qualified trainers from Red Cross New Zealand and US company FCI Watermakers were identified and engaged to teach the skills required to install, operate, repair and maintain the current fleet of RO machines in the RMI. As RO units are shared by communities, 1900 soft sided jerry cans have been released from the USAID funded warehouse and 4480 hard sided jerry cans have been procured, both locally and internationally, to facilitate transportation and access to clean water.

As part of a holistic drought response, health and hygiene promotion campaigns are being implemented in affected communities in coordination with the WASH (Water, Sanitation and Hygiene) cluster and the Marshall Islands Red Cross Society. Hygiene and sanitation items have been procured locally and are being distributed to beneficiaries taking into account the specific needs of vulnerable populations including the elderly, those with disability, pregnant women and children. More than 75,000 bars of soap are being distributed over a 3 month period to reduce the risk of skin infections, pink eye and diarrhea during times of limited water in outer island communities. In addition, IOM was able to procure and implement targeted hygiene promotion in all high schools in the country and providing 3300 hand sanitizer bottles have in Mauro, Ebeye, Wotje and Jaluit to reduce health risk and ensure students did not miss school in the final weeks leading up to exams.

During moderate and severe drought conditions, livelihoods can also be affected and in RMI there has been widespread crop damage across the nation with the worst affects taking place in the most Northern atolls/islands. IOM has worked closely with the NDMO to prepare for targeted food distributions to both moderately and severely affected communities providing supplemental food assistance basics. In total IOM will be serving 1,756 moderately affected beneficiaries for a 4 month period and 2,981 severely affected beneficiaries for a 7 month period – total beneficiaries 4,737. The first food distribution started in late June, 2016 and all supplemental food assistance to date has been purchased locally.

Republic of Palau

US Government USD50,000

Timeline

- **March 22, 2016:** Republic of Palau President H.E. Tommy E. Remengesau declares State of Emergency due to drought.

Areas of cooperation:

Technical assistance and capacity building

Affected Populations

- **Over 17,500** residents and guest workers, **5757 households (4264 urban and 1493 rural)** affected by drought conditions.
- **Over 13,300 tourists** affected by drought conditions.

Cooperation

When a State of Emergency was declared in Palau, immediate support to the Government of Palau was made possible under the IOM Cooperation Agreement signed earlier in the month. IOM consulted key officials including those from the Ministry of State and the Palau Public Utilities Corporation (PPUC) to discuss immediate needs for the population. At this time, water sources in Koror and Airai were severely depleted and as a result access to safe drinking water was extremely limited.

With support from USAID, IOM engaged experts from the Hawaiian Rural Water Association (HRWA) to assist with assessments and provide

recommendations going forward. The HRWA team also helped to setup and use leak detection equipment and train PPUC crews to detect leaks and drill for life-saving bore water. It was determined that more than 40% of water was being lost due to system leaks and many of these leaks were able to be fixed while the assessments were ongoing. The team then assisted and trained local crews to install and operate pumps for the underground wells. These wells provided much needed water supplies for Koror and Airai. Leaks in fire hydrants were also identified and marked for repair.

HRWA experts investigated the stand alone systems in other states outside of Koror and Airai and found that access to safe drinking water was still limited. Water purification was found to be a major concern in all states and as such, IOM is exploring possible solutions, including the installation of Chlorine Injection System.

Federated States of Micronesia

US Government USD 50,000

NZ Embassy USD100,000

Australian Aid USD90,000

Areas of cooperation: El Nino mitigation, water, technical assistance and training

Cooperation

Yap

Under the US funded Disaster Preparedness for Effective Response (PREPARE) Program, IOM has been working with FSM National and State governments to increase resilience to the effects of natural disasters by enhancing national and local capacities for disaster preparedness, response and recovery. When surveys conducted in January and February indicated rapidly diminishing water supplies and poor agricultural conditions, IOM worked closely with Disaster Coordination Offices (DCO) to monitor and respond to mitigate the effects of El Nino in Yap. IOM has been working closely with civil society, disaster-affiliated government departments, and weather services to conduct outreach and public awareness campaigns to encourage household-level water conservation while highlighting El Nino's impact.

To compliment the water conservation efforts, IOM solicited USAID/OFDA funding to provide mitigation-focused interventions through the provision of repair kits for solar-powered portable reverse osmosis (RO) units deployed in selected outer islands. The RO units are utilized to supplement drinking water supplies in vulnerable, remote islands including Ulithi, Ngulu, Fais and Faraulep as identified by the National Oceanic and Atmospheric Administration (NOAA). IOM is also in the process of scheduling training on RO maintenance for key community members.

Chuuk

Earlier this year and with support from the New Zealand Embassy, IOM provided rainwater-harvesting assistance and education to 22 communities throughout Chuuk, reaching more than 20,000 people. In total, the intervention increased rainwater storage capacity by 225,000 gallons for the targeted communities. This additional collection and storage capacity has assisted the communities as they struggle to cope with current drought conditions.

In response to the ongoing drought, IOM will build on previous efforts and construct rainwater catchment and storage systems in 16 communities with support from Australian Aid. The installation of the catchment and storage systems will address post-Maysak recovery needs, provide relief during the ongoing drought and increase the resilience of these communities by bringing long-term, sustainable storage capacity commensurate with the size of the population in each location.

Reverse Osmosis

Why Reverse Osmosis machines?

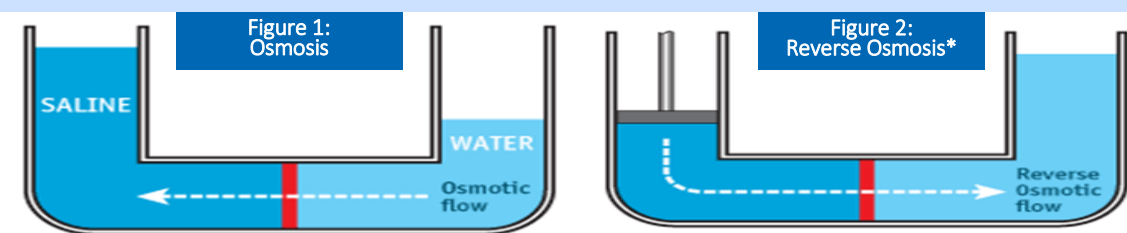
Reverse Osmosis (RO) is a form of water purification that can remove salt from seawater, a process called desalination. The use of RO is a short-term solution and part of a broader strategy to ensure beneficiaries in RMI and FSM have access to water during emergencies. For thousands of people throughout Micronesia this is a lifesaving process during times of drought.

What is Reverse Osmosis?

Osmosis is the natural desire for water to equally distribute solutes such as sugar or salt. Picture two bodies of water separated by a thin structure with billions of tiny holes (see figure 1). Water on one side of the structure (or membrane) contains more salt than the other. The water with less salt will travel through the membrane to other side until both sides of water have an equal distribution of salt. This process is called osmotic flow.

If the right membrane is used and if enough pressure is applied, osmosis can be reversed (figure 2). The outcome is reverse osmotic flow where one side of the membrane has all of the salt and the other has all of the water.

Reference: <http://www.economist.com/node/11484059>



A 360 gallon per day RO unit on Namu Atoll @IOM Micronesia 2016

IOM's activities are funded by and conducted in partnership with the following generous donors:

