

Immediate Drought Response Plan For the Republic of the Marshall Islands



**Complementing the
Declaration on State of Emergency:
Immediate Drought Response Plan
Republic of the Marshall Islands**

February 2016

Table of Contents

1. Definitions	2
2. Executive Summary	3
3. Context and Humanitarian Consequences.....	4
4. Response to Date	6
5. Objectives and Activities Matrix	8
6. Cluster Need Analysis	12
A. WASH Cluster	12
B. Logistics Cluster	12
C. Health Cluster	12
D. Food Security and Agriculture Cluster	13
E. Budget	14
7. Roles and Responsibilities	15

1. Definitions

1. Household affected – indicates the number of households that are in affected areas (average household size 7 people)
2. Population affected – number of people that are in affected areas
3. EOC – Emergency Operation Center
4. EPA – Environmental Protection Authority
5. IOM – International Organization for Migration
6. JICA – Japan International Co-operation Agency
7. JNAP - Joint National Plan of Action
8. MOH – Ministry of Health
9. MOIA – Ministry of Internal Affairs
10. MOPW – Ministry of Public Works
11. MOR&D – Ministry of Resources and Development
12. MRCS/IFRC – Marshall Islands Red Cross Society/International Federation of the Red Cross
13. MWSC – Majuro Water and Sewer Company
14. NDC – National Disaster Committee
15. NDMO – National Disaster Management Office

RMI Response Action Plan

Executive Summary

The Republic of the Marshall Islands is made up of 1,200 islands, islets and atolls with a land area of 180 square kilometers. The group is spread in two formations, with the eastern groups known as the Ratak ("Sunrise") chain and the Western groups the Ralik ("Sunset") chain. Similar to any low-lying coral islands, Marshall Islands has high vulnerability to coastal flooding and inadequate supplies of potable water.

The El Nino – Southern Oscillation (ENSO) is a recurring climate pattern where about 3 -7 years climate conditions over the Pacific Ocean basin change dramatically. The extremes of this oscillation are referred to as El Nino and La Nina. Many international, regional and local weather services providers have been studying the 2015-2016 El Nino event and forecast are holding true that this El Nino will be one of the strongest, if not the strongest, on history. The effects of El Nino are different for each country/region and different during the time of year, for a complete understanding of how El Nino is and will affect the Republic of the Marshall Islands (RMI) refer to annex 1.

The NDMO requested technical assistance from all cluster members to provide assistance to the Office of the Chief Secretary in response to the drought impacts. Through monitoring, surveys and rapid assessments the current drought impacts are seen primarily in the WASH (water, sanitation and hygiene) sector. It is for this reason that the plan outlined below focus on the WASH clusters current priorities and Logics Cluster support. In addition, as the plan states, the NDMO will continue to coordinate with the Food Security and Agriculture Cluster and Health Cluster to monitor the situation and action the contingency plans (included in this document) when more significant impacts are seen based on the rapid assessments as outlined in the results matrix. To reduce suffering and intervene before critical life threatening situations emerge; the EOC has developed the follow 6 month response plan to address immediate WASH needs. The plan will be revised and updated as the situation progresses.

This immediate response plan covers a 6 month period, the affected population spans 19 atolls/islands, 44 communities and approximately 1,257 households and 4092 in Majuro Atoll.

Basic humanitarian and development indicators for RMI

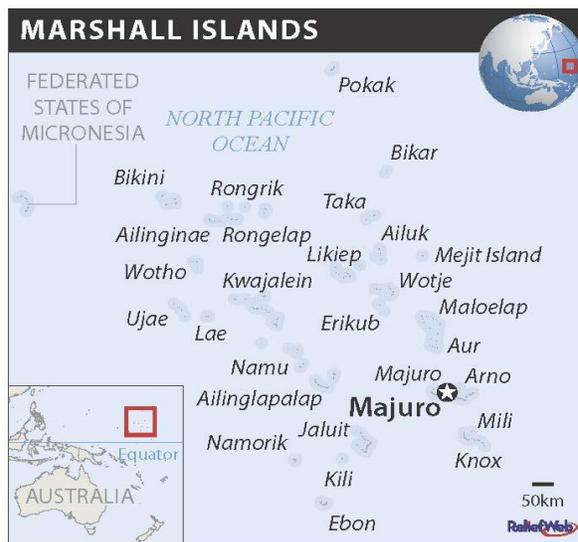
Population	53,158 People 27,243 males, 25,915 females
Age group 0-14	40%
Age group 15-59	56%
Age group 60 +	4%
Under 5 Mortality	60 per 1,000
Life Expectancy	male: 69.92 years female: 74.25 years

Literacy rate	93%
Gross national income per capita	2500 PPP
Percentage of population living on less than \$1.25 per day	
Proportion of population without sustainable access to an improved drinking water source	
Hospital bed density	2.7 beds/1,000 population
Proportion of population without sustainable access to an improved drinking water source	
Population density	
Population densities across the Marshall Islands varies, in Majuro with a total land area of 3.75 square miles (or 9.71 square kilometres) is home to 27,797 residents, which translates into a population density of 7,413/sq. Mile, or 2,860/km ² .	
The highest density in the Marshall is on Ebeye island in Kwajalein Atoll where 9,614 people live on 0.12 square miles (0.31 km ²), resulting in population densities 80,117/sq. Mile or 31,013/km ² . Population densities of this magnitude, when associated with overcrowding, often entails health and other social challenges of varying severity, which should be of interest to policy-makers.	

Context and Humanitarian Consequences

Located just north of the equator in the Pacific Ocean, the Republic of the Marshall Islands (RMI) is made up of 1,200 islands, islets and atolls with a land area of 180 square kilometers. The group is spread in two formations, with the eastern groups known as the Ratak ("Sunrise") chain and the Western groups the Ralik ("Sunset") chain. RMI, like most of the countries in the region, faces a high degree of natural disaster risk. Even minor emergencies (relative to global disaster statistics) can overwhelm national capacity and significantly affect populations and economies. The RMI has low vulnerability to tsunamis, earthquakes and landslides, medium vulnerability to cyclones and **droughts** and high vulnerability to coastal flooding and inadequate supplies of potable water.

According to NOAA during an El Niño rainfall is usually above average during the early part of the year and dry conditions start at the end of the El Niño year (November – December 2015). Rainfall usually returns to normal by July of the following year (July 2016) but dry conditions may linger longer for some events. Dry conditions have been documented throughout the RMI due to persistently lower than average rainfall during the last quarter of 2015. It is for this reason the RMI has declared a State of



Map Sources: UNCS, Gov't. of U.S.A.
The boundaries and names shown and the designations used on this map do not imply official endorsement or acceptance by the United Nations. Map created Jun 2010 - www.reliefweb.int

Emergency for the Republic of the Marshall Islands on February 3, 2016. According to weather forecasts the dry conditions and well below normal rainfall patterns are expected to last through July 2016.

Atolls/islands located above 8' N latitude (Zone 1) and islands between 6' and 8' N latitude (Zone 2) are expected to have a high vulnerability. Atolls/islands below 6' N latitude (Zone 3) are expected to have moderate vulnerability – with the exception of Mili Atoll which has been moved to Zone 2 based on current rainfall data. The estimated total population of the most affected atolls/islands in Zone 1 and 2 is 12,231 (these numbers exclude the urban centers of Majuro and Ebeye as explained below). The estimated total population in Zone 3 is 3,550.

The communities outside the urban centers of the RMI are being severely inundated by the challenges brought about by these dry weather conditions, and face potential health, environmental, social, and economic hardship, due to persistent dry weather. The level of distress experienced by the people in these communities is further exacerbated by the fact that:

- Household water catchments, and other water storage facilities in the affected atolls/islands, have since run out or extremely low on water as of late January 2016
- The levels of salinity of water drawn from under-ground wells has risen to unsafe levels as documented by RMI-EPA

The communities in urban centers (Ebeye and Majuro) are being impacted by the challenges brought about by dry weather conditions. Ebeye and Majuro have water management plans provided by KAJUR and MWSC respectively. KAJUR and MWSC are able to manage water product and supply, but due to lack of household hook-ups to main water lines the most vulnerable populations in both urban centers are without water. For Ebeye and Majuro the response to water needs will focus on distribution of water as opposed to outer islands which will require the product of water (through reverse osmosis units) and distribution to households. If the situation persists for too long, MWSC will need to procure a large RO unit to ensure the vulnerable water lenses on Majuro and not permintely damaged due to over drawing.

Local governments are formally reporting to the National Government and requesting assistance once local capacity is exceeded to address the challenges associated with the drought.

The role of assessing disaster impacts falls to the NDMO in coordination with technical experts from each cluster (WASH, Health, Logistics, and Food Security and Agriculture) – cluster membership can be found in annex 2. The Emergency Operations Center (EOC) was activated the February 3, 2016 immediately following the State of Emergency.

1,257

households affected by the drought on outer islands

4092

households affected by drought on Majuro

RESPONSE TO DATE

Since early January 2016 the below activities were taken by the Office of the Chief Secretary to validate local government reports on drought conditions and respond to immediate needs.

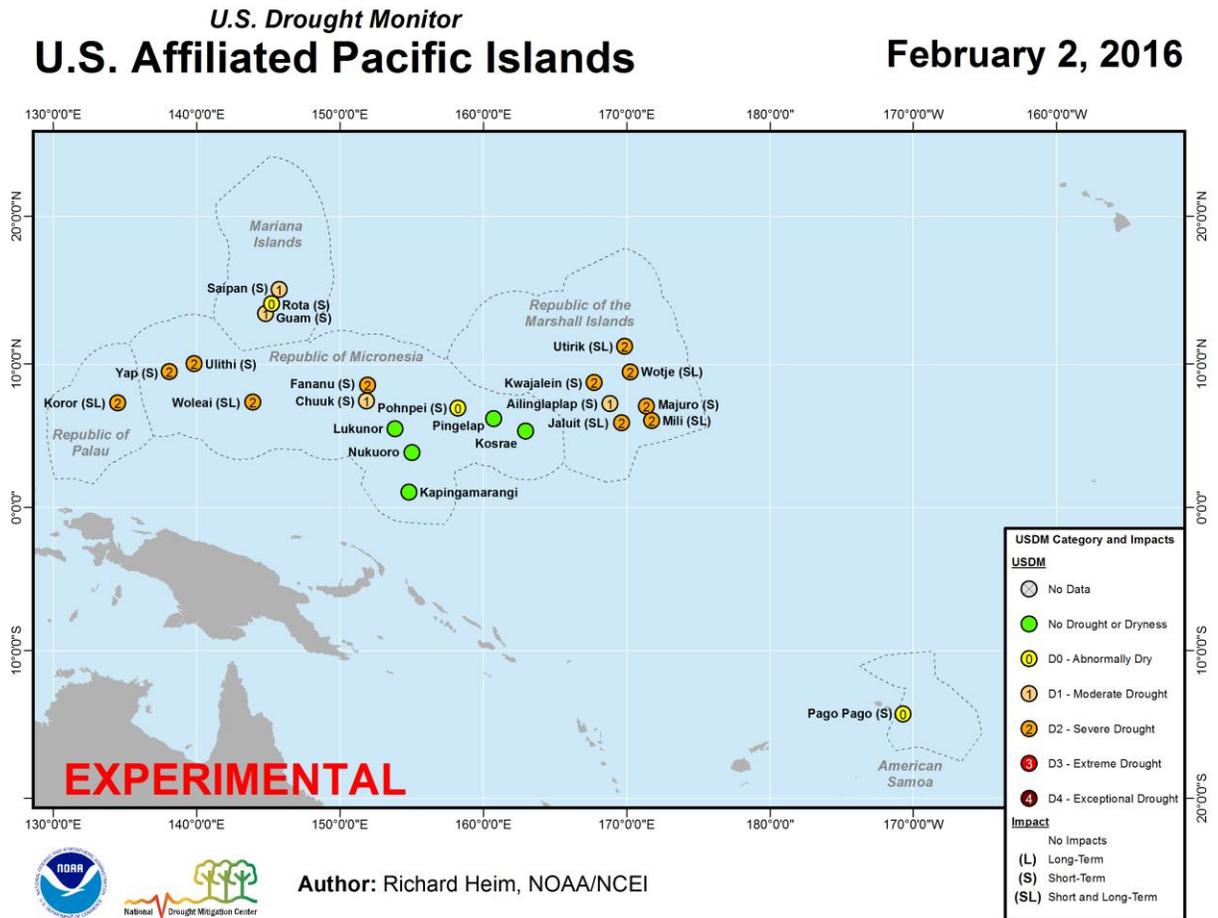
Date	Location	Type of Activity/Report
January 14, 2016	Aur Atoll (Tobal and Aur)	Government Rapid Assessment 1 GoRMI RO Installed on Aur, Aur
January 19-27, 2016	Mili, Ronglap, Wotho, Maloelap, Namu, Ebon, Jabot, Lae, Ailiglaplap	Drought Situational Overview via NTA 6.5
January 20, 2016	Arno, Jaluit, Ebeye	Salvation Army Chapter report
January 22, 2016	Ailinglaplap, Aur, Arno, Mili, Jaluit, Ejit	WorldTeach Volunteer weekly check in report
January 22-23, 2016	Mili Atoll (Mili, Nallu, Lokworwod, Enejit)	Government Rapid Assessment 1 GoRMI RO Installed Mili, Mili
January 23, 2016	Likiep Atoll (Likiep)	Government Rapid Assessment 1 GoRMI RO Installed on Likiep PEC unit repaired
January 27, 2016	Ujae Atoll and Lae Atoll	Government Rapid Assessment 1 GoRMI RO Installed Ujae and PEC unit repaired, 2 GoRMI RO Installed Lae and PEC unit still needs repairing
January 30 – 31, 2016	Arno Atoll (Arno, Ine, Rearlaplap)	Government Rapid Assessment and 1 GoRMI RO installed Arno 1 GoRMI RO installed Ine 1 GoRMI RO installed Tinak
January 28-February 3, 2016	Aur Atoll and Maloelap Atoll (Airok, Tarawa, Wolot, Jang and Kaven)	1 PEC unit repaired Aur Government Rapid Assessment GoRMI RO installed Jang

The total number of units installed on the affected outer islands is 10 x 360 GPD. In addition, multi-sectorial rapid assessments have been completed on 7 atolls/islands from Zone 1 and 2. To date, all activities that have been carried out and implemented has been done with national resources. Based on the evidence gathered during assessments, the RMI Government declared a State of Emergency for the entire RMI on February 3, 2016.

The Office of the Chief Secretary was able to react quickly and efficiently as a result of close coordination and participation from all Clusters (under the leadership of national cluster leads as outlined in annex 2). In addition, local non-governmental partners such as the International Organization for Migration (IOM), Marshall Islands Red Cross Society, WorldTeach, Salvation Army and JICA have offered in kind support through technical assistance and support in information gathering. The local governments have played a key role in linking vulnerable outer island communities to the national government planning and response, as well as assisting with rapid assessments on outer islands. The cluster coordination mechanism will continue to be utilized to ensure the close partnership seen to date continue and are strengthen as more partners join.

Humanitarian Consequences and Needs Analysis

According to the U.S. Drought Monitoring data from NOAA/NCEI (pictured below) and validated through rapid assessments by multi-sectorial teams Zone 1 and Zone 2 are in Severe Drought.



Forecasts indicate that these conditions will continue through July 2016 as seen below.

Long Range Rainfall Forecast

Inclusive Period	% of Long-term Average Forecast Rainfall (Inches)		
	South of 6° North	6° North to 8° North	North of 8° North
Jul - Sep 2015	120%	120%	120%
Oct - Dec 2015	90%	90%	85%
Jan - Mar 2016	50%	40%	40%
Apr - Jun 2016	70%	60%	50%

- This poses the threat of extended drought in the RMI
- Dry conditions persisting until June 2016

Based on the initial rapid assessments, the Government of the RMI estimates that approximately 12,231 people are experiencing severe drought conditions in outer islands in Zone 1 and 2 and 27,000 in Majuro. An additional 3550 others may experience moderate drought conditions in the coming months in Zone 3. Preliminary reports from the RMI suggest that in some drought affected areas, household water catchments and other water storage facilities have run out of water and levels of salinity in underground water sources have reached unsafe levels. Food crops including breadfruit, banana, pandanus and taro are being to be affected, but are not yet at critical levels requiring assistance.

The forecast, as seen above, is for the RMI to stay in drought conditions for at least 6 more months (July 2016). It will take several months for normal rainfall for ground water to be replenished and longer still for food crops to recover.

Presently, priority needs therefore include improving access to clean drinking water and basic hygiene to reduce disease outbreaks. In addition, contingency planning for Food Security and Agriculture and Health impacts in the coming months so the Government of the RMI is prepared to respond when reports show severe impacts in these two sectors.

Humanitarian Consequences and Needs Analysis

Objectives and Activities Matrix

The table below outlines the key objectives of the WASH cluster and the Logistics cluster for a 3 month period.

Water, Sanitation and Hygiene (WASH) Cluster Objectives

1. Provision of drinking water Majuro Atoll
2. Provision of hygiene water for Majuro Atoll
3. Provision of drinking and hygiene water Outer Islands (2.6 gallons per person per day)
4. Provision of WASH Kit (outer islands and Majuro islets)

Logistics Cluster Objectives

1. Air bridge established to meet humanitarian needs (provision of chartered planes for transportation of response items and teams)
2. Sea bridge established to meet humanitarian needs (provision of chartered boats for transportation of responses items and teams)
3. Establish supply warehouse to store RO units and parts
4. Emergency Operation Center operational capacity enhanced
5. Consolidate donations from all general public, community organizations and private sector

The following activities have been identified for the response to the drought immediately following the State of Emergency on February 3, 2016. To maintain the urgent response to the immediate needs of the affected population by the drought, including access to water that meets the minimum Sphere standards for drinking, cooking and basic hygiene and the basic issues of well-being, dignity and prevention of harm are addressed in the below matrix.

Cluster Operational Delivery Plan Matrix

Activities to Supports WASH Cluster Objectives

Activities	Indicator	Target
Objective 1		
1.1 Establish drinking distribution points on Majuro Atoll near schools (private and public) and shared with the school community.	Rita (2 x 1500 gallon tanks with water taps installed)	1 community
	Jenrok (1 x 1500 gallon tanks with water taps installed)	1 community
	Delap (2 x 1500 gallon tanks with water taps installed)	1 community
	Rairok (2 x 1500 gallon tanks with water taps installed)	1 community
	Ajeltake (2 x 1500 gallon tanks with water taps installed)	1 community
	Woja (2 x 1500 gallon tanks with water taps installed)	1 community
	Laura – High School (2 x 1500 gallon tanks with water taps installed)	1 community
	Majuro islets Rongong (2 x 1500 tanks and 360 GPD RO	2 communities

	with taps installed) Majuro islets Ejit (2 x 1500 tanks and 360 GPD RO with taps installed)	5 communities
1.2 Procure drinking water from College of the Marshall Islands and distribute to distribution points on Majuro Atoll	1 MOU signed with CMI to procure 20,000 GPD 1 Government water tanker mobilized 1 Private water tanker mobilized	7 distribution points serviced everyday
1.3 Majuro public and private school as school and community water distribution points for drinking water.	Schedule made available to information the public of school and community distribution points across Majuro, implementation overseen by MalGov.	All of Majuro
1.4 Procurement of Reverse Osmosis unit for Majuro (500,000 GPD)	RO unit provides additional water for MWSC Plant C to avoid over drafting of Laura water lens after six months (June 2016)	Majuro community
1.5 Safe water practices education and awareness materials during emergencies.	Community education materials at water distribution points throughout Majuro and household level take home materials	Majuro community
<hr/>		
Objective 2		
2.1 Majuro DUD well feasibility study.	RMI EPA identifies suitable wells for extraction in the DUD area for hygiene needs.	DUD communities
2.2 Secure wells for pump for extracting hygiene water.	Letter of Agreement created for well owners, WASH Cluster and land owner to ensure wells are not over pump.	1 per location
2.3 Establish hygiene water distribution points for DUD.	Rita (1 x 1500 gallon tank and pump with taps installed) Jenrok (1 x 1500 gallon tank and pump with taps installed) Small Island (1 x 1500 gallon tank and pump with taps installed) Delap (1 x 1500 gallon tank and pump with taps installed)	1 community 1 community 1 community 1 community
<hr/>		
Objective 3		
3.1 Establish drinking water and basic hygiene (2.6 gallon per person per day) distribution points in outer island communities.	Likiep (5 x 360 GPD units) Ailuk (4 x 360 GPD units) Mejit (1 x 360 GPD unit) Lib (2 x 360 GPD units) Ujae (1 x 360 GPD unit) Lae (1 x 360 GPD unit) Mejatto (2 x 360 GPD unit) Ebadon (2 x 360 GPD units) Namu (7 x 360 GPD units) Jabot (2 x 360 GPD units) Ailinglaplap (16 x 360 GPD units)	3 communities 2 communities 1 community 1 communities 1 community 1 community 1community 1community 4 communities 1 community 9 communities

	Wotje (6 x 360 GPD units)	2 communities
	Maloelap (6 x 360 GPD units)	5 communities
	Aur (2 x 360 GPD units)	2 communities
	Arno (17 x 360 GPD units)	12 communities
	Mili (2 x 360 GPD units)	3 communities
3.2. Training materials and capacity building of RO operators on outer island in partnership with local governments.	Each community with RO unit(s) has a designated operator that is responsible for operating and reporting of the RO unit	44 communities

Objective 4

4.1 Provision of WASH kits (jerry can and hygiene kits) for all outer island and Majuro Atoll islet households.	Each household receives 2 x 5 gallons jerry cans, a 7 person hygiene kits and hygiene education materials.	1257 households outer islands 100 households Majuro Atoll islets
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Activities to supports Logistics Cluster Objectives

Objective 1 1.1 Mobilize WASH monitoring and multi-sectorial rapid assessment teams to outer islands (grouped geographically) by air bridge.	All communities with a RO unit are monitored on a monthly basis total 36 trips. Group A: Likiep, Ailuk, Wotje, Utirik and Mijit Group B: Maloelap, Aur, Mili Group C: Wotho, Ujae, Lae, Group D: Mejatto, Ebadon, Group E: Namu, Jabot, Ailinglaplap Group F: Enewatak	38 Communities (Enewatak, Wotho, Ujae, Lae, Ebadon, Mejatto, Namu, Jabot, Ailinglaplap, Likiep, Ailuk, Utirik, Mejit, Wotje, Maloelap, Aur, Mili)
Objective 2 2.1 RO deployment, WASH Kit distribution and multi-sectorial response teams to outer islands (group geographically) by sea bridge.	Atolls groupd into 2 routes for sea trips. Assign one (1) vessel for each route on a monthly basis total 12 voyages. Ratak Chain route 16 day voyage: Group A: Likiep, Ailuk, Wotje, Utirik and Mijit Group B: Maloelap, Aur, Arno, Mili Ralik Chain route 16 day voyage: Group C: Wotho, Ujae, Lae, Lib Group D: Mejatto, Ebadon, Group E: Namu, Jabot, Ailinglaplap Group F: Enewatak	41 Communities (Enewatak, Wotho, Ujae, Lae, Ebadon, Mejatto, Namu, Jabot, Ailinglaplap, Likiep, Ailuk, Utirik, Mejit, Wotje, Maloelap, Aur, Arno, Lib, Mili, Wotho)
Objective 3 3.1 Establish supply warehouse for response items in	1 Warehouse constructed to store response equipment	All beneficiaries

Majuro.

Objective 4 4.1 Emergency Operation Center operational capacity enhanced.	A fully function EOC that responsive and operational 24 hours a day 7 days aweek	All beneficiaries
Objective 5 5.1 The logistics cluster lead actively seeks the donations and good will of the general public, private companies and donor partners.	Funding and inkind donations are received from multiple sources	All beneficiaries
5.2 Streamline the process for clearance of donated goods through customs and revenue division and Stevedore.	Fees (clearance, Stevedore, demurrage) waved for all humanitarian relief items	All government and non-governmental partners
5.3 Improve community awareness on drought impacts and on-going response to assist affected atolls/islands with drought conditions.	Utilization of mass media (MHTV, Marshall Islands Journal, Facebook, Yokwe.Net, Flyers, All Radio, Broadcasting companies, request letters)	All citizens and partners aware of the drought and how to access and share information

WASH Cluster Needs Analysis

Prior to the need to conduct multi-sectorial rapid assessments the WASH Cluster met to begin planning for the weather forecasts provided by the RMI National Weather Service. The WASH Cluster methodology for identifying the number communities to be assisted and amount of assistance required was based on a comprehensive understanding of weather forecast, topology, existing capacity (PEC 300 GPD RO unit locations), population, distance to neighboring islands/communities, and available rainfall data. Based on this analysis two scenarios were developed.

- Scenario 1: provide minimum SPHERE standard of drinking water 1 gallon per person per day
- Scenario 2: provided minimum SPHERE standard of drinking and basic hygiene water 2.6 gallons per person per day.

Based on recommendations of the RMI National Disaster Committee (NDC) on January 13, 2016 multi-sectorial assessment teams were immediately deployed. Assessment teams clearly described the desperate and dire situation of people in vulnerable communities from the impacts of the drought.

Given the level of distress assessed and duration of the El Nino drought event forecast the Office of the Chief Secretary recommend that WASH Cluster activities be planned for Scenario 2. The implementation

strategy for WASH needs in outer islands and urban centers tailored to the different operating conditions seen in the different locations.

Logistics Cluster Needs Analysis

Successful functioning of logistics operations is critical to effective preparedness, response and recovery for natural disasters. Initial logistics response requires urgent deployment of very costly airborne reconnaissance and emergency transport to cater to humanitarian needs.

The key to a successful operation is a timely and cohesive response and collaboration between all sectors within logistics (including monitoring of funds, warehousing, procurement, transportation, general logistics coordination and a good understanding of the interaction between these activities).

Health Cluster Needs Analysis

Based on recommendations of the RMI National Disaster Committee (NDC) on January 13, 2016 multi-sectorial assessment teams were immediately deployed. Assessment teams were deployed and some health problems are being seen, but no abnormalities [note: The Ministry of Health has regular surveillance through the outer island dispensary system and they are monitoring the situation closely]. In addition to simply monitoring the situation the Ministry of Health assessment team staff also conducted preventative measures through vaccination programs and public health education.

The Health Cluster will continue to monitor the situation through full participation in assessments and regular monitor of outer islands through the established outer island dispensary system. The Health Cluster is ready to provide immediate response to drought related illnesses and implement the Health Cluster contingency plan as impacts are seen through assessments and surveillance measure.

The overall objective is to decrease morbidity and maintain a mortality rate of zero due to dehydration and malnourishment by providing essential preventative health practice, medical services, pharmaceutical supplies and technical assistance to drought affected communities on a needs basis.

Food Security and Agricultural Cluster (FSAC) Needs Analysis

Based on recommendations of the RMI National Disaster Committee (NDC) on January 13, 2016 multi-sectorial assessment teams were immediately deployed. When possible, FSAC members participated in assessments to track the deteriorating food crop situation on outer islands.

Focus on the affected atolls/islands, including affected farmers and groups whose livelihoods and food security are being monitored as the drought persists. The contingency plan for the FSAC includes the finalization of a supplemental food basket that is culturally appropriate for immediate response and the provision of seeds and seedlings of local crops that will be provided as part of the recovery process.

The overall objective is to decrease the amount of suffer of subsistence living families when local food crops fail and assist with recovery of locally appropriate and health food stables. These objectives will take into account nutritional needs, cultural preferences and the effects of supplemental food assistance on the local economy.

Roles and Responsibilities

The response to drought conditions is coordinated by the Government of the Republic of the Marshall Islands (RMI) through the Office of the Chief Secretary. On February 3, 2016 the Cabinet issued a declaration of a State of Emergency as the prolonged and severe drought throughout the RMI. On February 3, 2016 the EOC was activated to support the day-to-day coordination of drought response activities. Under the EOC, four clusters have been established in priority sectors seen in Annex 2.

National Disaster Committee (NDC)

The Chief Secretary as the designated Chairperson of the NDC will assume the overall control and coordination responsibilities for the duration of any declared national disaster.

National Emergency Operations Center (EOC)

The EOC is established to assist emergency and disaster management functions with collection, processing and dissemination of information, and the implementation of decisions related to events/incidents. The role of the EOC is to:

- Gather, collate and disseminate information
- Prepare and disseminate situation reports
- Facilitate a damage and needs assessment process
- Maintain effective communication and information systems
- Coordinate all government, non-government, private, regional and donor assistance
- Manage the logistic arrangements of the immediate relief supplies

The EOC will monitor and follow up on the implementation of the Response plan.

As one of the coordination tools, a Cluster Approach will bring relevant issues to the table. Clusters are groups of humanitarian organizations working in the main sectors of humanitarian action, clusters are formed when clear humanitarian needs exist within a sector, when there are numerous actors within sectors and when national authorities would benefit from such coordinated support. Clusters create partnerships between national humanitarian actors, local authorities, civil society, and international partners.