Hazard Vulnerability Capacity Mapping Final Report

KWAJALEIN ATOLL COMMUNITIES

ACP-EU Natural Disaster Risk Reduction Program
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The contents of this publication are that of Kwajalein Atoll communities that participated.

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For more information contact IOM at micronesiaenquiries@iom.int.

Acronyms

CBDRM - Community Based Disaster Risk Management
CVM - Community Vulnerability and Capacity Mapping Exercise and Assessment
EWS - Early Warning System
HVCM - Hazard Vulnerability Capacity Mapping
IOM - International Organization for Migration
KADA - Kwajalein Atoll Development Agency
KAJUR - Kwajalein Atoll Joint Utilities Resources
MICS - Marshall Islands Conservation Society
NDMO - National Disaster Management Office
RO - Reverse Osmosis
RMI - Republic of the Marshall Islands
USAKA - United States Army Kwajalein Atoll

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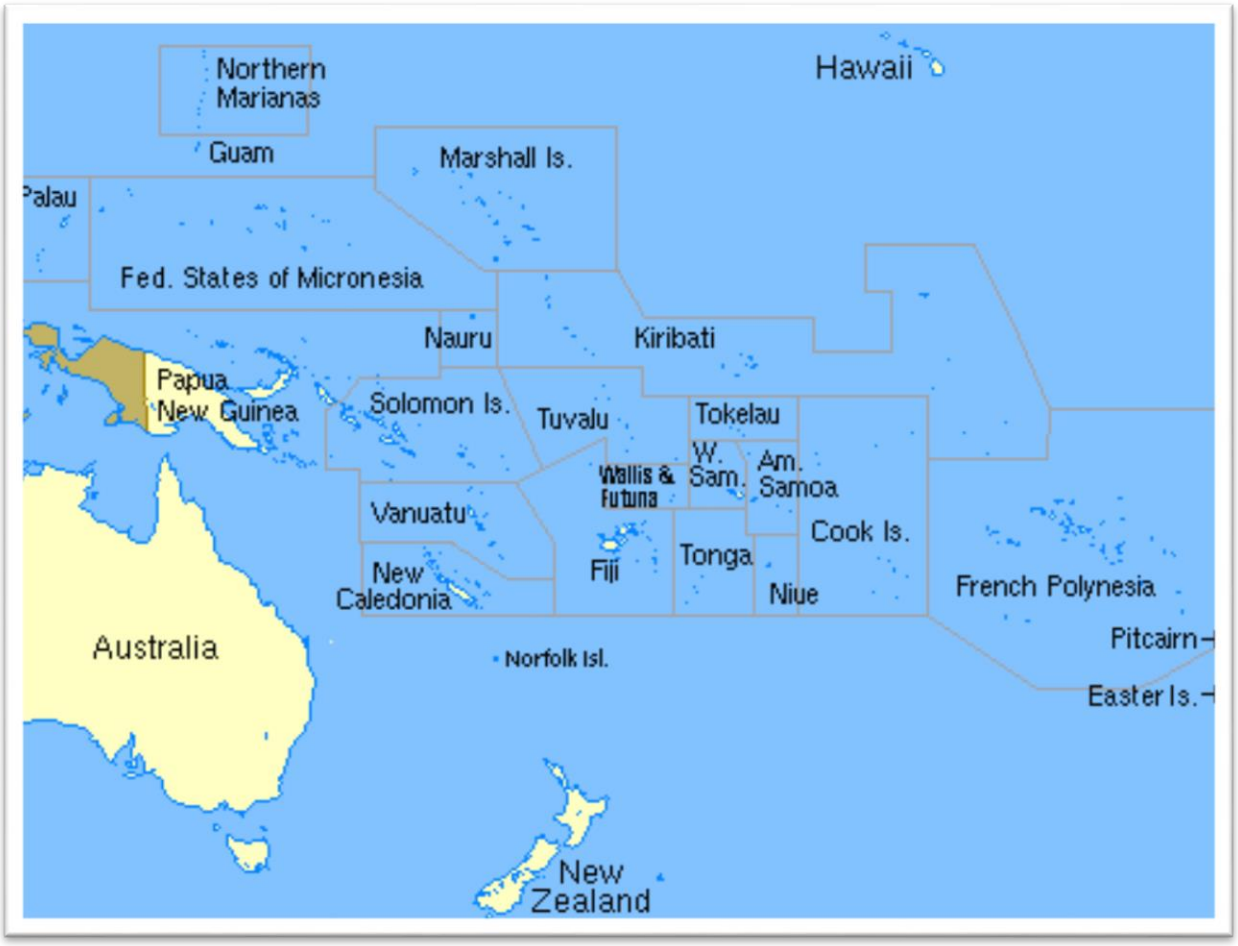
Context

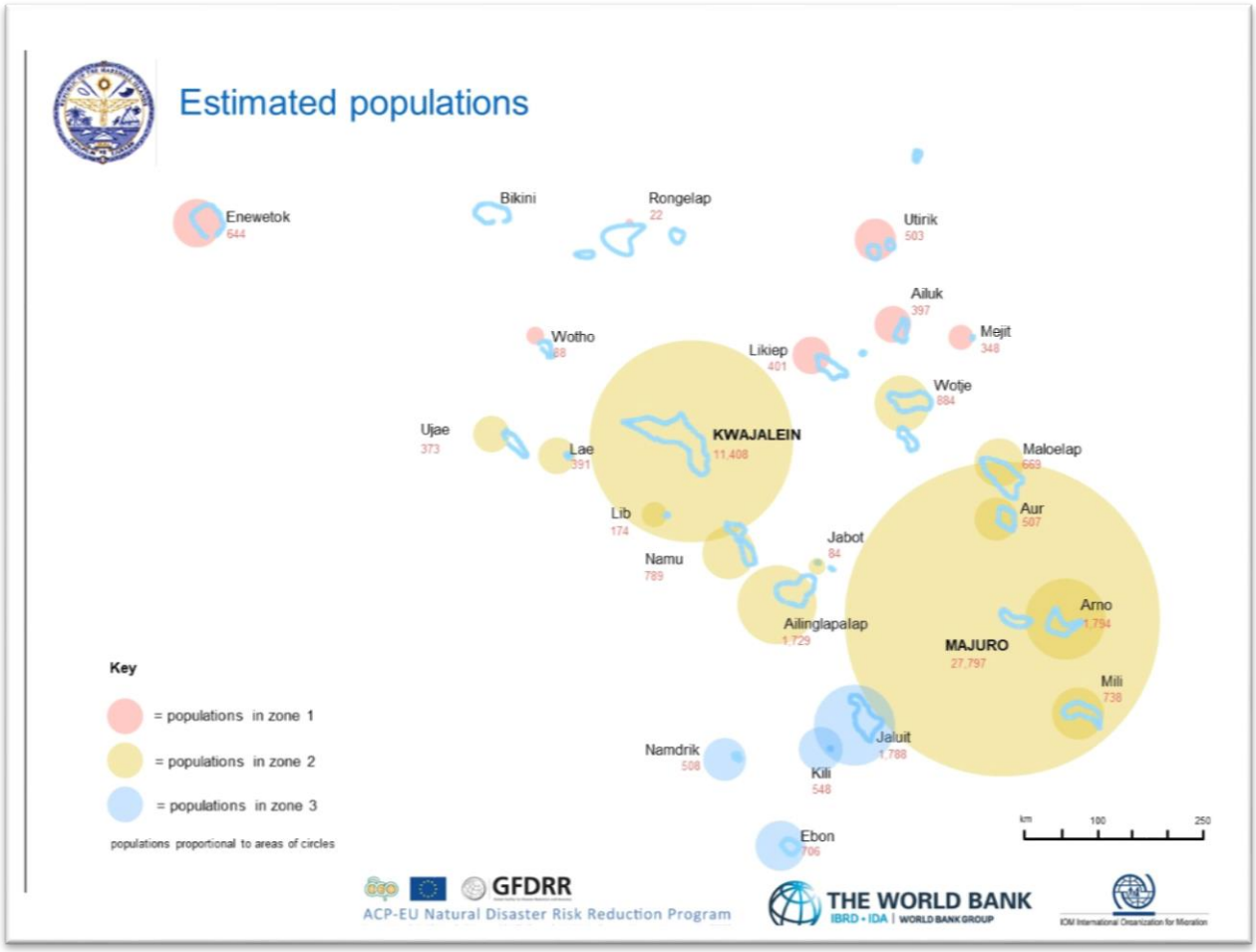
Background of study

The Republic of the Marshall Islands (RMI) is located in the North Pacific Ocean. The RMI consists of approximately 180 square kilometers of land spread across just under 2,000,000 square kilometers of ocean as seen in Map 1.



Map 1: Pacific Ocean map

The RMI is comprised of two parallel island chains of 29 atolls (made up of many islets), and 5 islands. The two island chains are known as Ratak and Ralik chains lie about 200 kilometers apart and extend almost 1300km northwest to southwest. Majuro is the Capital with a population of approximately 27,000, Ebeye on Kwajalein Atoll is the second largest urban center with a population of approximately 15,000 in habitants. The remaining population of RMI's 54,000 individuals reside in the remote outer islands and atolls as seen in Map 2.



Map 2: Republic of the Marshall Islands Estimated Population Map

Climate change impacts of notable concern in the North Pacific region include: extreme temperatures, drought, sea level rise, ocean acidification, and heavy rainfall leading to flooding and landslides. Such impacts are threatening fisheries and reef environments, and the communities and livelihoods that depend on them. Some of the low-lying coral atolls in the North Pacific are especially vulnerable to sea level rise, storm surges, coastal inundation and salinization of water lenses. Rising sea levels also exacerbate the pressure on fresh water lenses in these atoll environments and while an overall increase in rainfall is projected, the populations' reliance on water catchments for storage (as opposed to the water lens) will increase. The region has also experienced the cyclical effects of the El Nino/Southern Oscillation (ENSO)-related weather anomalies. Such climate variability is associated with drought; that often leads to: water shortages, crop failures, food shortages, and fires. In the El Niña phase there is an increased risk of secondary hazards, such as landslide.

The most common hazards that have occurred in the RMI in the past 10 years include Drought Disasters in 2013 and 2016, a Drought Emergency in 2017 and a current extra dry season in 2019. In February 2015 there wave inundations that destroyed 17 homes in Arno Atoll and caused other damage to infrastructure throughout the country prompting a State of Emergency. October 2015 Typhoon Nangka passed through the Northern part of the RMI. In January 2019 Tropical Depression TD01W that passed through the RMI

causing concern, preparatory actions and a State of Emergency. Over the past 10 years there have been numerous small inundations and King-Tides that cause minor damage across the country.

This report articulates the results of IOM's Hazard Vulnerability and Capacity Mapping (HVCM) exercises that took places in communities throughout the RMI. Each community report high lights the communities profile, key hazard risk concerns, maps and early warning systems. The reports can be used by community members to then plan a full Community Based Disaster Risk Management (CBDRM) Plan inclusive of an Early Warning Systems (EWS) framework. Appendix 3 has the draft CBDRM methodology that the World Bank project is funding. In addition, the analysis of the EWS survey is currently underway which will provide recommendations to the National Disaster Management Office (NDMO) on am EWS framework.

Targeted Communities in Kwajalein Atoll

During the project design in coordination with World Bank, national leadership, local leadership, and IOM it was decided that the project would focus on Kwajalein Atoll and Majuro Atoll. The project is targeting a total of 10 communities, but will exceed that amount by the close of project. Within Kwajalein Atoll there are a variety of communities included in Ebeye, the second largest urban center in the RMI and smaller islands within Kwajalein Atoll that are several hours by boat from Ebeye. Communities, such as Ebeye are made up of smaller community sections called Wetos. In Ebeye, the Wetos decided to group together in some cases and others stayed separate. The table below illustrates the communities that have participated from the beginning of the project to date. A total of **14 communities** have been involved.

Wetos	Community/Report Name	Larger Community and Atoll
Bouj, Batien, & Jebalur	Bouj	Ebeye, Kwajalein Atoll
Ebadon	Ebadon	Kwajalein Atoll
Gugeegue	Gugeegue	Kwajalein Atoll
Loij	Louk	Ebeye, Kwajalein Atoll
Monkubok	Monkubok	Ebeye, Kwajalein Atoll
Monnin, Lole	Monnin	Ebeye, Kwajalein Atoll
Santo	Santo	Kwajalein Atoll
Tobikle, Loie, Eokwojaja, Lojkomlak	Tobikle	Ebeye, Kwajalein Atoll

In the next quarter IOM will work with Delap and Namu communities and through the community consultation process confirm the grouping of wetos. Total number of community consultations to at end of March 2019 is **14 consultations** completed for a **total of 146 males, 173 females, and 20 children**

Methodology

Hazard Vulnerability and Capacity Mapping with Early Warning Systems

Introduction:

The Community Hazard Vulnerability and Capacity Mapping (HVCM) with Early Warning System (EWS) has been designed to assist communities and facilitators in conducting HVCM exercise and producing HVCM reports as part of the IOM Community Vulnerability and Capacity Mapping Exercise and Assessment (CVM) Project. The objectives and steps taken allow the facilitators to implement in a way that allows facilitators to ensure the communities is leading the process. It acknowledges that each community is unique, certain variations in the methodology are possible; however, the three sessions included are considered the minimum in order to effectively conduct the exercise. Community members' time is voluntary and valuable and there are many competing pressures, so it is essential that facilitators are always well prepared, efficient and mindful of not wasting time. The minimum time required to conduct all the activities in the HVCM is ten hours of community time. Not all members will be required for all ten hours.

Objectives and Process:

Under the objective of the CVM program, IOM and its partners will conduct HVCM exercises in up to 10 communities across the RMI. HVCM is set to complement and inform other community based climate adaptation and disaster risk reduction activities such as:
The specific objective of the HVCM is to increase community members' awareness of disaster risk and the impacts of climate change in their community and help them to plan activities to reduce vulnerability and increase resilience to both slow and fast onset disasters as well as impacts of climate change. HVCM is a participatory, community-led series of activities that provides essential context-specific information on the local impact of climate change and community vulnerability and existing capacities.

In addition to assessing existing disaster preparedness capacity, HVCM can also help us to better understand the communities we work in in order to address their unique concerns. HVCM is an effective entry point to the community and offers an opportunity to allow community members to share their opinions on what is important to them. The results of the exercise can help us to focus future climate adaptation and disaster risk management plans, trainings and disaster mitigation measures towards the specific concerns of the community.

Where feasible, it is preferable for the activities to be conducted in Marshallese. Fascinators are Marshallese and speak both English and Marshallese.

The HVCM exercise will generally require three sessions:

1. Sensitization and Community Profile
2. Physical Mapping and Hazard Vulnerability Matrix
3. Early Warning System Mapping and Profile
4. Summary and Action Plan Generation

In all sessions, we should emphasize to participants that we are here to learn from them; we need them to teach us about their community. Much of the success or failure of the exercise will hinge upon everyone's participation and input. In all sessions, it is important to ensure participation of all groups in

the community including women, different age groups including youth and any 'outsiders' in that community such as immigrant or under-represented groups. It is essential that the community feel ownership of this process with facilitators only guiding the process. As with all community engagement, it is also important to be very clear at the outset as to what IOM's role and not to raise unrealistic community expectations. Sessions 2 and 3 will require snacks and drinks for all participants. Where possible community contributions such as coconuts or other refreshments should also be encouraged.

Throughout the HVCM, it is important that special consideration be provided to ensure the participation and engagement of traditionally under-represented groups. Ensuring women and youth are actively encouraged to participate is a critical ingredient to the success of the process. Natural disasters have the capacity to disproportionally affect vulnerable groups in society and the mapping exercise should assist the community in appreciating that physically and mentally disabled persons in particular will require additional support in protecting them from the identified hazards. It is therefore a critical outcome of the mapping exercise that these people be identified and their locations identified on the map. If possible ensure their participation in the HVCM exercise.

Community 1: Bouj (Including Batien and Jebalur) Community

Community profile statement

Background

Ebeye Bouj town community is located in Ebeye, Kwajalein Atoll. Starting from Beach Park and ends at Calvary High School. In here we have the National and Local Government Offices, Local Police station, National Telecommunication Authority, Calvary and Catholic Private schools, churches and a few Businesses; the most sought out are H2O and DIY Stores. The population of the community is approximately 4,500 people. Formal employment is the main source of income on Bouj town. Majority of employment are from Kwajalein Military Base and contracted. Local and natural resource are scare on Ebeye and mainly brought from neighboring atolls.

Figure 1.1 Bouj community members presenting their community map

Bouj town community is also under the Kwajalein Atoll Local Government and all decisions are made by the Council and the Traditional leadership. In each of the communities there are Alaps (landowners) and Rijerbal (workers) that own each community and oversees the land and people on behalf of the paramount traditional leaders. The Alaps and Rijerbal are involved in all activities in their areas and calls for meeting when there are important events, such as workshops, trainings, health awareness and visitors

to the community. In the schools decisions are made by the Parish, Deacon Boards and Parent Teacher Association.

Two of the major problems Bouj town is facing are teen pregnancy and alcohol abuse. The community leaders encourages and support awareness programs as way to help face the problems and raise awareness against teen pregnancy and alcohol abuse. Last year Ministry of Health and Human Resource conducted a massive Tuberculosis screening on Ebeye. The benefited of the screening is that now they have finger prints and records of all those who reside on Ebeye. There is variety of community improvement projects taking place on Ebeye and one of them includes Kwajalein Atoll Development Authority (KADA) Project.

Geography and Location

Hazard: Bouj Town community updated their HVCM from 2016 putting typhoon as their number one most hazard from their previous plan and adding drought as their second hazards. In the past 10 years this community was affected by all the droughts in the country as well as the minor inundations and the 2015 wave inundation.

Effects of Climate Change on hazards: Bouj Town community like the rest of Ebeye is continuously facing the effects of climate change. On their map they have identified areas that are always flooded from heavy rainfall and coastal erosion. Barren of any or little to no vegetation, the temperate is high. The community of Bouj town identifies and request for the planting of trees for protection. Without trees to absorb and soak the dirt and with the flood and temperature rise, the flow of bacteria is easily circulated around the environment on Ebeye. During prioritization of the action community members were debating between having a RO Unit or water catchment. Majority of community voted for RO Unit that can help them in times of drought and also help bring down problems with poor hygiene and sanitation as well as dehydration as water very scarce in Ebeye regardless if there is no El Nino or drought communities around Ebeye continues to face with lack of water problem.

Capacities: Traditional Leadership, Local Government Leadership, Senator(s), Women Organization, Church Leadership, Youth Organizations, Local and National Police and the Community Organization are the strength of the community. They are the decision makers and the communities listen to because they know these decisions are for the betterment of the community and well-being. The Bouj town community strongly believes that the children are the future and they encourage them to stay in school and teach them to take ownership for cleaning and planting their community for better life and healthy environment.

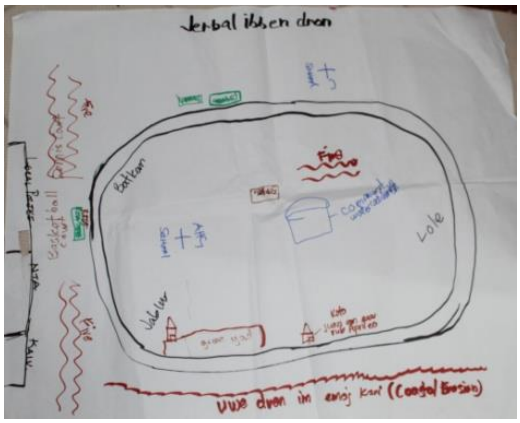


Figure 1.2 Map drawn by male and female 40 - 35 years old

Hazard vulnerability risk mapping

The hazard vulnerability risk mapping process is when the community is split into different groups, usually men and women separately, and the young people. They take flip chart paper and draw a map of their community and identify key are or infrastructure, like churches and evacuation centers, docks, and such. Then they identify the risk, where it floods and disaster prone areas. The groups

then present back to each other and have a discussion on how they are different or the same and add where needed. The drawn maps (from all the groups) can then be transferred onto google earth format.

On the Bouj maps below you can see that the community has identified where there are fire risk either because there has been a fire or burnt down and where they are worried that a fire can happen. They have also drawn on the key community locations like the Irojlaplap (Traditional leaders house), and other evacuation locations, the blue buildings (on the Google Earth Map).

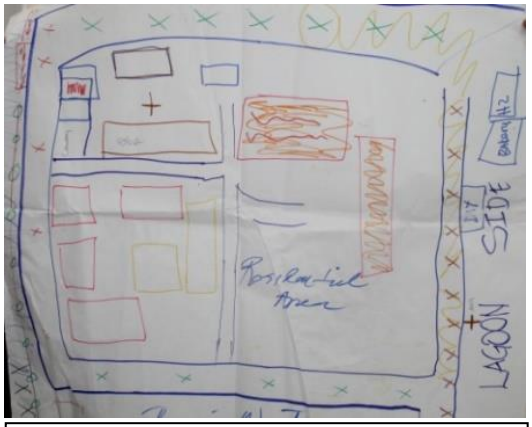


Figure 1.3 Map drawn by Male and Female age group > 40 years - 60

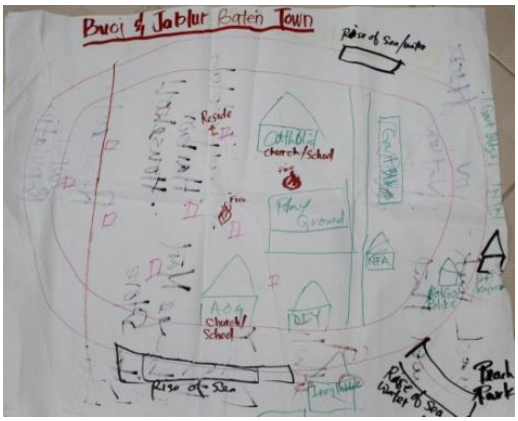


Figure 1.4 Map drawn by age group below 35

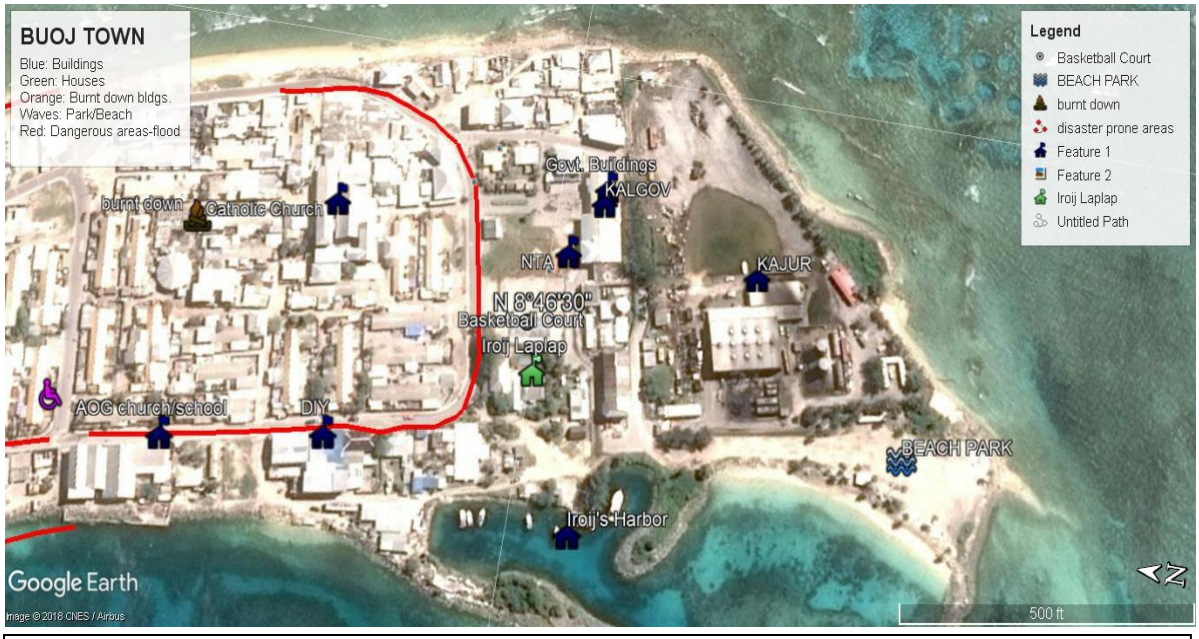


Figure 1.5 Google earth combine map for Bouj community

Hazard vulnerability matrixes

The below matrix is the result of the prioritization process where the community of Bouj prioritized droughts and typhoons as their key hazards. For droughts, the community has identified impacts from

lack of water for drinking and food preparation as well as the increase in health concerns related to lack of water such as diarrhea, pink eye and dehydration. They have noted that there are increased risk for children. They have noted that they have a lot of capacities that can be used to address the identified needs, such as working with leadership and social groups to prepare for drought by procurement of drought related materials such as RO units, jerry cans, and water catchments. They also note that they need to invest in further trainings and ensure that they have established and effective emergency communications in place. In the past 10 years the Bouj communities has experience three droughts (2013, 2016 and 2017 and is currently experiencing exceptionally dry weather).

For typhoons, the community is most concerned about the damage to infrastructure and the disruption to work and school life. They are concerned that there are not enough safe spaces to go to, especially since the atolls are so narrow with no inland. The same groups as identified for droughts have the capacity to address the needs of preparing alarm systems, emergency evacuation kits and standby supplies to be ready to act in times of typhoon disasters. In the past 10 years the Bouj community has not experienced a typhoon, but has had frequent storms that have caused inundation and wind damage.

Hazards	Impacts	Vulnerabilities/Weaknesses	Adaptive Capacities/Strengths	Needs
Drought	-No water -Thirsty -Dirty environment -Pink eyes and cough spread -Diarrhea -Impacts the children especially students -Dehydration -Disease spread -Contaminate water	-Not enough water catchments -Not enough reverse osmosis. -Not enough trees for protection -Improvement in plumbing systems -Water transportation	-Religion(s) -Community Organizations -Women Clubs -Traditional Leaders -Disaster communities. -National Police -Police force -Ministry of Health and Human Services -U.S Army Kwajalein Atoll (USAKA) -few wells	-Emergency kits -R/O Units -Training conservation -Water catchment -Water valve -Jerry can -Funds -Well communication -VHF radio -Wi-Fi -Radio station -Fire Extinguisher
Typhoon	-Destroy houses -Stop school and work -Injured and wounded -Contaminated water catchment -Destroy power lines and	-Not enough safe places -No seawalls -Close to sea -Exposed homes -Homes are not secured -Not enough information -Not trees for protection -No emergency equipment -No transportation	-Religions/ churches -Community Organizations -Women Club -Youth Club -Strong Leadership/Iroij & National & Local -Strong buildings -Hospital -Businesses -Police Forces -USAKA	-Transportation -Alarms for towns -Radio Station -Emergency Kit -VHF Radio -MRE (Meal, Ready, Eat) -Mass text : 999 -Well organization club. -Well Communication RMI.

The below table is the Bouj community action plan that outlines the four key actions that need to take place – procuring RO Units, training community members on drought and disasters, improved transportation and an alarm/siren system. For each of these four actions they have identified who is responsible from within the community, who is responsible from outside the community, if funding is required and how, if technical support is required and how, and who in the community and by when the

action will take place. The community was not always able to identify the technical support and funding source. Below is the table with the full community action plan.

Community Actions	Who is responsible from within the community	Who is responsible from outside the community	Is funding required? Who?	Is technical support needed? Who?	Who in the community can lead this action? When?
1. RO Unit	Traditional Leader Local Government Mayor Hirata Kabua City Manager Scott Paul KADA KAJUR Alap Meria Jericho Johnson deBrum	Office of Chief Secretary – NDMO Office International Organization for Migration Marshall Islands Red Cross Society US Embassy ROC Taiwan Embassy	Yes	Yes KAJUR	December 2018
2. Training (drought)	Traditional Leader Local Government Mayor Hirata Kabua City Manager Scott Paul KADA KAJUR Alap Meria Jericho Johnson deBrum	Office of Chief Secretary – NDMO Office International Organization for Migration Marshall Islands Red Cross Society US Embassy ROC Taiwan Embassy	Yes		December 2018

3. Transportation	Traditional Leader Local Government Mayor Hirata Kabua City Manager Scott Paul KADA KAJUR Alap Meria Jericho Johnson deBrum	Office of Chief Secretary – NDMO Office International Organization for Migration Marshall Islands Red Cross Society US Embassy ROC Taiwan Embassy	Yes		December 2018
4. Alarm for towns	Traditional Leader Local Government Mayor Hirata Kabua City Manager Scott Paul KADA KAJUR Alap Meria Jericho Johnson deBrum	Office of Chief Secretary – NDMO Office International Organization for Migration Marshall Islands Red Cross Society US Embassy ROC Taiwan Embassy	Yes		December 2018

Community Early Warning System

In Bouj community when discussing the current EWS at the community level the participants decided to draw out the system as they understand it on flip chat paper (Figure 1.6), and the IOM team completed the table in appendix 1.1. The community has identified two key sources of information on early warnings – the Guam Weather Service Office and the U.S. Amy Kwajalein Atoll (USAKA). Trusted community members including the RMI –USAKA liaison officer, the Mayor and the Chief Secretary validate the weather warning and then disseminate to the community. The dissemination methods include airing on the national AM/FM radio station V7AB, mass text, and police going door to door, social media such as facebook and mouth to mouth of community members warning each other. The Bouj community members feel that most people in the community receive the message but that there must be more efforts made to ensure vulnerable populations receive the message, such as those without the financial resources to own a phone, wifi, radio, elderly and children. The community also identified that the actions taken once the warnings are heard must be improved, such as helping those with disabilities get to evacuation sights and ensure that all community members understand where to go in an emergency.

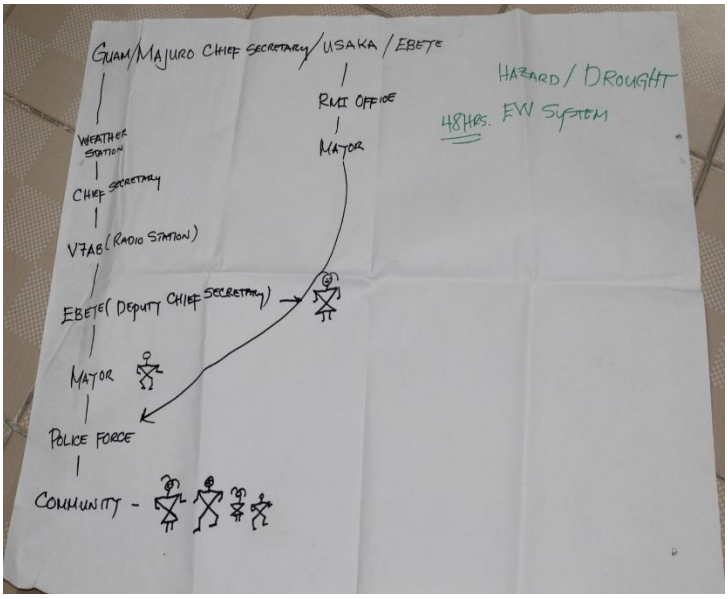


Figure 1.6 Diagram on EWS by senior male and female from Bouj town community. In this picture the community members drew out how they imagine EWS message is communicated and carried out Ebeye.

Summary Bouj Community

The participants identified typhoons and drought as their three main natural hazard concerns.

An underlying theme in the action plan is recognition that laws, programs and plans are already in place but education, participation, and implementation are needed.

In conclusion, the HVCM Exercise for Ebeye Bouj Town Community was successful and points were taken that ownership and initiative has to be community driven by utilizing their existing capacities to address their concerns. It is anticipated that with the visit of the CVM program to Ebeye Bouj town community, the communities will be better prepared and improved their capacity to identify appropriate community actions to deal with the hazards.

In terms of the community prioritization process, possible short-term disaster risk reduction and climate adaptation activities that were identified include the following:

- Rehabilitation of the community evacuation center to ensure minimum standards and safety measures
- Further training and awareness raising with community members on enhancing disaster response capacity
- Formation of community working group to further develop these initiatives.
- Coastal strengthening through planting of mangroves
- Strengthen the vulnerability of drought through establishment of an RO Units
- Transportation and alarm system to help communicate and rally the early warning message in time of disaster as well as transport those with special needs.

The Homeowners Handbook is an excellent resources that is available in Marshallese for retrofitting homes to become more typhoon resistant. In addition, community posters that summarize the work above (and found in appendix 2.1) are being printed and distributed to the community. Lastly, the results of these community reports will be utilized to finalize the GIS community evacuation plan maps developed in partnership with Marshall Islands Conservation Society (MICS).

Community 2: Ebadon Community

Community profile statement

Background: Ebadon is one of many islands in the Ralik Chain of the Marshall Islands.

Figure 2.1 Men's group from Ebadon community drawing their hazard vulnerability capacity map.

The population of Ebadon is approximately 100+ according to the interview conducted. Trading copra and fishing is the main core of survival on Ebadon. Majority of the men fish while ladies stay home to do daily chores such as cleaning their house, watching the kids, and preparing meals for the day. Out of all the adults in the community, only a handful have forma jobs. These people include the nurse, principle, and 3 teachers. Local resource is an everyday use for the people in Ebadon. They rely on what they grow and the marine animals for daily food supply. For other supplies, such as soap, rice and can foods, they either walk on the reefs during low tides to their neighboring island Mejato, or go on a small boat to buy their day to day needs/necessities.

Ebadon is under the jurisdiction of Kwajalein Atoll Local Government and the Traditional Leaders. The first and most important step of protocol to conduct any activities with community members on Ebadon and any other islands that are under Kwajalein jurisdiction and local government is coordinating through the Iroj. Once the Iroj gives the blessing to proceed on with activity/project, coordination is made through Mayor, traditional leaders/alaps and to the community itself.

Primary social concerns expressed by the community members were the feeling of being neglected "forgotten" by their Local Government. Community members mentioned that Ebadon is always left behind. They have their own saying describing their home, "Island left behind".

Geography and location:

Hazards: Because Ebadon was severely affected by a drought recently, the locals still remember what they experienced, majority of the community members voted for King Tide and Drought to be their number one hazards. In the past 10 years this community was affected by all the droughts in the country as well as the minor inundations and the 2015 wave inundation.

Effects of Climate Change on hazards: Incidence and severity of king tides and droughts are set to increase, the risks from either of these disasters are devastating concerns for the residents of Ebadon.

Based on experiences of droughts, the principle impacts of droughts as reported by the community were the risk of limited drinking water, limited water to prepare food, limited water for cleaning and showering, outbreak of sickness pink eye, diarrhea, and damaged vegetation. Following the drought, the effects of the dry season, as mentioned above was in effect and was a high risk to the community.

Based on studies of king tides, after learning about the principle impacts of king tides as reported by the community their concern was the risk of sea level rising destroying the community and everything in it. The people in Ebadon have not experienced king tide waves, but they fear that if ever they face a king tide

they will be wiped out of the island. They also noticed that the sea level has risen from previous years and the sea is wearing away the North side of the Island.

Capacities: The strengths of this community include the variety of social groups, including, Traditional Leaders, Community Members, Church Group Members, Families, and Women Group. The community members are driven through strong cultural reliance and recognition deeply manifested into their very old and respected foundation roots.

Hazard vulnerability risk mapping

The hazard vulnerability risk mapping process is when the community is split into different groups, usually men and women separately, and the young people. On the Ebadon community maps below you can see that the community has identified the churches (cross), the schools (book), the people (hearts), the houses (black square), and the stores (money sign). Also interesting is that the community identified where the high tide mark was in the 1990s and now in 2018, and that it is moving inwards.

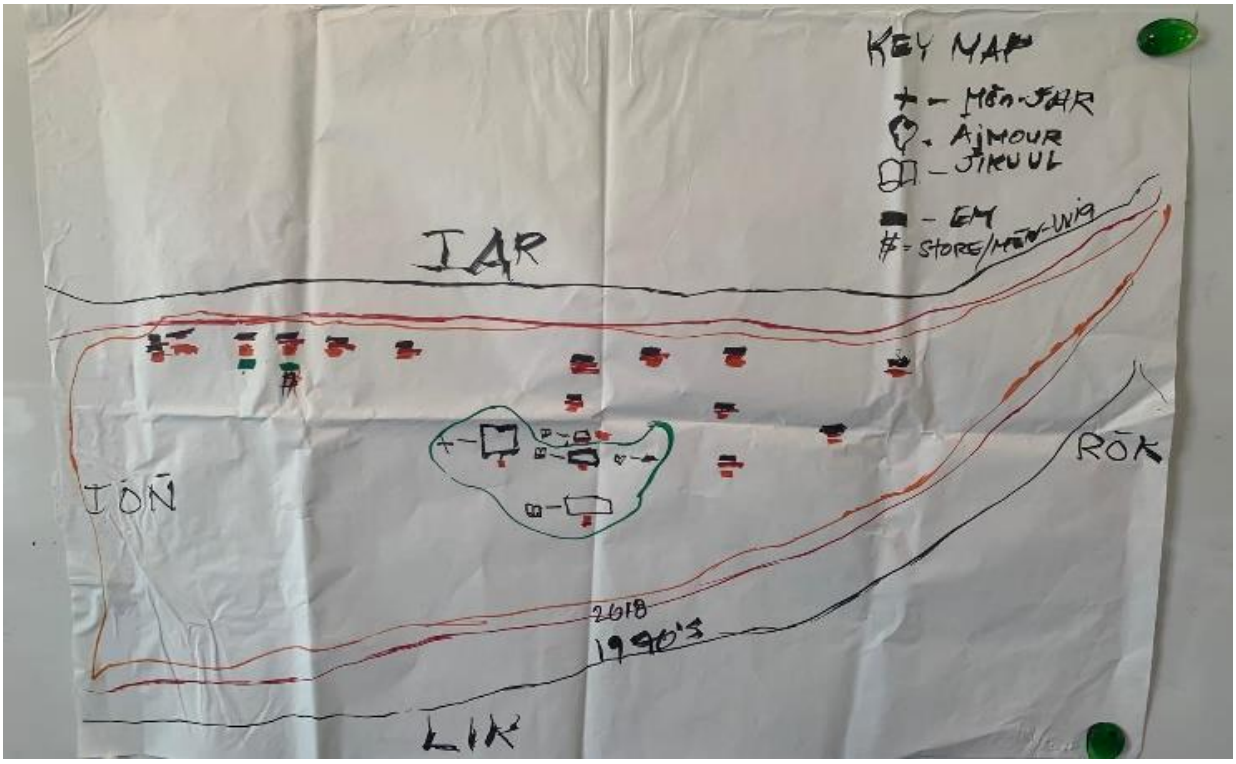


Figure 1.2 Map drawn by men in the community. Red showing the areas that are dangerous and already at risk of costal erosion, and community members housing that are not safe

Hazard vulnerability matrixes

The below matrix is the result of the prioritization process where the community of Ebadon prioritized King Tides and droughts as their key hazards. For King Tides the community identified that the impacts are flooding that causes damages to homes, vegetation and crops, shorelines and reefs and sometimes marine livelihoods. The community weaknesses to respond to King Tides are that there are no early warning systems, not enough communications equipment to communication with larger urban centers, and limited transportation. There is also a fear in the community of not being prepared and that most houses are unsafe. The community also sees that they have adaptive capacities and strengths in the community. Mostly that there is a sense of community and strength in working together for the safety of their lives. Additionally they see that their schools and churches are safe spaces for sheltering and that they will prepare emergency kits. The community designed some short and long term goals. In the short term to prepare for King Tide the community will seek funds, increased water and food supplies, life jackets and seeds for planting more vehicles. In the long term the community is seeking to procure boats for transportation and wifi for communication.

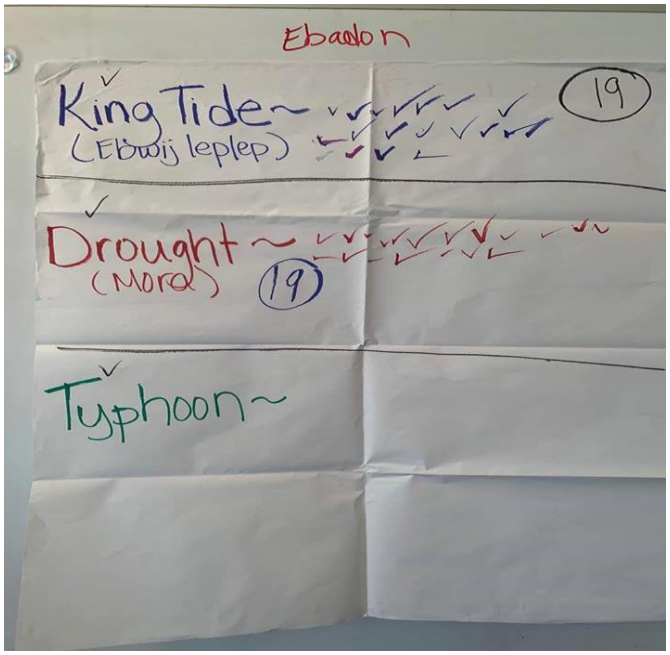


Figure 2.3 Ebadon community prioritizing their highest hazards

For droughts, the community is most concerned about the impacts of drought on marine life by the warming temperatures of the water, damage to vegetation and crops, hunger in the community and lack of drinking water. Additionally the community is concerned that there will be disease outbreak due to lack of water for sanitation purposes. The weaknesses of the community are that there are not sufficient water catchment for capturing and storing water. They are also concerned that there will be effects on livelihoods do to reduction in copra and the migrating of fish to deeper cooler oceans. They feel that they lack caregivers and protection measures. The community adaptive capacities and strengths include support from IOM, local governments and other support agencies. They also have emergency kits, hygiene kits and underground wells. The community made short and long term plans to tackle drought. For the short term the community would like to get cleaning supplies to keep water catchments and gutters clean, seedlings about planting drought tolerant crops, and stocking medication. Lastly in the short term the community wants more training and awareness raising for drought. In the long term the community would like to procure RO units and additional water catchments for water security.

Hazard	Impacts/Risk	Weaknesses	Adaptive Capacities/Strengths	Short Term	Long Term

King Tide	-Damaged vegetation/land -Flooding in houses -Damage reefs and shorelines -Destroy marine lives	-No EWS -No enough radio to call out/only one on island -Fear of being unprepared No transportation -Will damage vegetation -Most of houses are unsafe.	-Community working together for safety of their lives -School and church for safe shelter. -prepare emergency kits	-Funds -water -food -life jackets -seeds for planting	-Vehicles *boat for transportation -Wifi

Hazard	Impacts/Risks	Weaknesses	Adaptive Capacities/Strengths	Short Term	Long Term
Drought	-will effect marine animals/one of their main source to get food. -damage vegetation -starvation and thirsty -outbreak of disease/sicknesses will take place -will need water for daily use	-not enough water catchments -vegetation will be damaged -cobra will be damaged therefore cannot trade for $ -migration of marine animals -No caregiver -No protection	-funding's from IOM Local Gov't and other agencies that are willing to help -Emergency Kit -Hygiene Kit -Underground wells	-supplies for cleaning water for safe drinking -seedlings -Training awareness for drought -medications	-R.O. Unit -water catchments

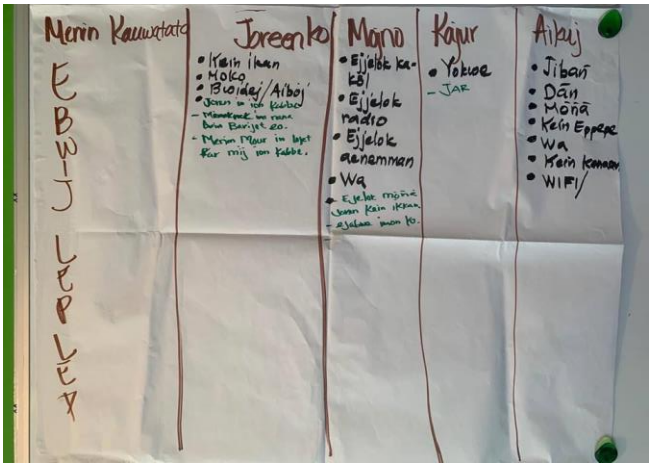


Figure 2.4 Table done by Ebadon Community members showing the impacts, weaknesses, strength, and needs of King Tide

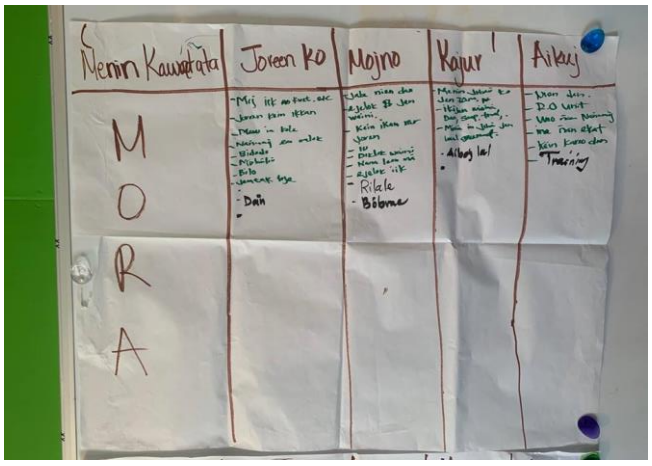


Figure 2.5 Ebadon Community Members listing down the impacts, vulnerability and weaknesses of Drought

The community action plan below for Ebadon community has keep the same two hazards to address as in the matrix, King-Tide and droughts. They have identified specific actions for each, the main community focal points to implement those actions, the outside technical and financial support and a timeline for implementation. The Ebadon community has come up with a modest and achievable action plan.

Hazards	What can be done?	Community Focal Point	Focal Point from outside Ebeye	When can it be done?
King Tide	-Water and Food (emergency kit) Boat	-Morelik George -Kebot Johnny -KALGOV -Traditional Leaders -Senators Mayor City Manager	-MIRCS -IOM -NDMO -NRC	January 2020
Drought	-Water catchment RO Unit	-Morelik George Kebot Johnny KALGOV Traditional Leaders Senators Mayor City Manager	-MIRCS -IOM -NDMO -NRC	January 2020

Community Early Warning system

The Ebadon community identified King Tides and drought as the top two concerns for the community. They identified that they get their information on EWS from the national radio station V7AB and over the VHF radio. Those who receive the message are those that happen to be listening to the radio who then pass it by word of mouth throughout the community and confirm the validity of the message by communicating on VHF with Ebeye. The community does not have an official alarm system and there is no systematic way of ensuring all community members know. To prepare for emergencies the families will prepare emergency kits and work together to keep the community safe. At a community level they will work with traditional leaderships and local governments will be requested to help arrange emergency plans and ensure the evacuation shelters are open. The community does not think that all members of the community equally receive messages and they are requesting a siren or alarm system for the community. The full EWS chart can be found in annex 1.2

Summary

The participants have identified King Tide and drought as their two main natural hazard concerns.

An underlying theme in the action plan is recognition that laws, programs and plans are already in place but education, participation, and implementation are needed.

In conclusion, the HVCM and EWS exercise for the Ebadon Community was successful and points were taken that ownership and initiative has to be community driven by utilizing their existing capacities to address their concerns.

With the commencement of the World Bank funded project, the communities will be better prepared and will improve their capacity to identify appropriate community actions to deal with the hazards.

In terms of the community prioritization process, possible short-term disaster risk reduction and climate adaptation activities that were identified include the following:

- Rehabilitation of the community evacuation center to ensure minimum standards and safety measures
- Further training and awareness raising with community members on enhancing disaster response capacity
- Formation of community working group to further develop these initiatives.
- Strengthening disaster preparedness through establishments of Emergency Kits, Water catchments, and Medication and transportation.

The Homeowners Handbook is an excellent resources that is available in Marshallese for retrofitting homes to become more typhoon resistant. In addition, community posters that summarize the work above (and found in appendix 2.2) are being printed and distributed to the community. Lastly, the results of these community reports will be utilized to finalize the GIS community evacuation plan maps developed in partnership with MICS.

Community 3: Gugeegue Community

Community Profile Statement

Background

Gugeegue is located on Kwajalein Atoll. It is under the jurisdiction of Kwajalein Atoll Local Government. About 100+ people resides on Gugeegue. Gugeegue is more like a rural area however with scarce resource the people depend on formal income for survival. Majority of the population have jobs for every house an estimate of 1 or 2 person will work to feed and support more than 10+ people.

Geography and Location

Hazard: The people in Gugeegue community had a previous HVCM exercise and action plan however; they agreed to go through the activity again and refresh their knowledge as well as update their plans as they go through the process again. Back in May 2014, the highest votes of disaster turned out to be typhoon and King Tide. This year, their most hazard votes within the year of 2015-2018 came upon drought and one group wrote down fire as well. In the past 10 years this community was affected by all the droughts in the country as well as the minor inundations and the 2015 wave inundation.

Effects of Climate Change on hazards: Gugeegue, just like Ebeye, and just like the rest of RMI suffer from different kinds of problems that grow from the stages of change in climate. On their maps, the community identified the different dangers and weaknesses the town faces from these changes from climate. For instance, on the community map they marked places they go for water when drought takes action, the

dangerous sections in town that get flooded during heavy rains, the damaged seawalls and more. This year, the community agreed that the most frequent hazard was drought and asked for more assistance in this period of time for aiding in their community water.

Capacities: Gugeegue listed down the few resources they see as their community's capacities. In times of disasters; such as typhoons, droughts, power outages, fire and etc. For water, they often seek to KAJUR (Kwajalein Atoll Joint Utility Resources), community stores and sea water. In times like these, they also have hand sanitizer available to reduce sickness/diseases from spreading around their community. Although Gugeegue only have few water catchments for the community, the find ways to preserve this water so that it will last a while. This town seeks for aid in the few water catchments they have and also believe that trash bins are important to distribute or make around town to keep their neighborhood clean. It was also stated that trash bins are very important to also reduce sickness and diseases from spreading as well.

Hazard Vulnerability Risk Mapping

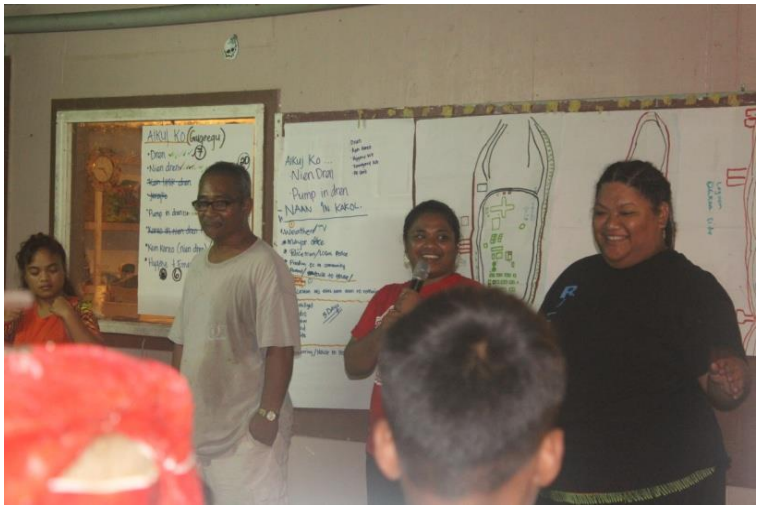


Figure 3.1 Gugeegue community members and IOM staff summarizing community mapping for next steps of vulnerability matrix and action planning.

The hazard vulnerability risk mapping process is when the community is split into different groups, usually men and women separately, and the young people. They take flip chart paper and draw a map of their community and identify key are or infrastructure, like churches and evacuation centers, docks, and such. Then they identify the risk, where it floods and disaster prone areas. The groups then present back to each other and have a discussion on how they are different or the same and add where needed. The drawn maps (from all the groups) can then be transferred onto google earth format.

On the Gugeegue map below you can see that the community has identified the red lines and red dots as areas of concern or problems such as flooding and erosion. The green dots are the community resources including the school, stores, hospital, wells, catchments, and churches. The final legend is blue dots which are buildings that are in need of repair and retrofitting.

Figure 3.2 Gugeegue community hazard vulnerability map made by community's members that has been put onto google earth format.

Hazard Vulnerability Matrixes

The below matrix is the result of the prioritization process where the community of Gugeegue prioritized drought and fire as their key hazards. For drought the community identified the key impacts of drought as health concerns such as pink eye and diarrhea. They also identified that the community has lack of water, and what is left might be contaminated, as well as damaged vegetation. Lastly the community identifies the disruption in social norms such as school absences as a concern. The vulnerabilities and weaknesses of the community are that there are not enough water catchments to collect and store water, the damage to plans and other vegetation. They identified that there is not an RO on Gugeegue and that they need to procure water from KAJUR and have it delivered. There is a lack of transportation. They are also concerned that there is no water for fire services. The community then identified that there are adaptive capacities and strengths of the community which include KAJUR, stores that stock water supplies, sea water as a washing sources. They also identified that there are ground water wells in the community and they have water catchments. They also see that there are other options such as hand sanitizers and trash bins for keeping things clean and orderly. The last thing the community identified is the short term actions that they can take to address droughts. These include procuring more water catchments, water pumps, Clorox for cleaning tanks and gutters and then cleaning the catchments and more RO units.

For files, the community is most concerned about the fact that there are not enough water catchments for the community and that there is damage to the vegetation and crops during droughts. The community has identified weaknesses of not having enough water to put out fires during the dry times of drought and the lack of RO units on Gugeegue to not have to get water from KAJUR. The one available adaptive capacity

that they were able to identify is sea water as a source for water. Lastly, the short term actions that the community identified are the need for a fire truck and or system that can utilize sea water.

Hazard	Impact/Risks	Vulnerabilities/ Weaknesses	Adaptive Capacities/ Strengths	Short term Actions
Drought	-No water -Pink Eye -Diarrhea -Dusty atmosphere -Contaminated water -Damaged vegetation -Absent from school due to no water	-Few water catchments -Damaged water to plant vegetation -No RO Units -Purchase water from KAJUR -No transportation -Not enough water to cool down fire	-KAJUR -Stores to purchase water -Sea water -Hand sanitizer -Few water catchments -10 ground water for community -Trash bins	-Water catchments -Water Pumps -Clorox to clean water -Cleaning water catchments -RO Unit
Fire	-Few water catchments -Damaged vegetation	-Not enough water to cool down fire -R.O Units	-Sea water	-Fire truck with long host to connect to sea-water

The community of Gugeegue has created a simple and targeted action plan to address drought. They are seeking water catchments and RO units that will be managed by the local government representative – Wesley Lamari with support from outside technical experts.

Hazard	What can be done?	Who within community can be the focal point to lead the plan?	Who from outside of Ebeye can be focal point to lead the plan?	When can it be done?
Drought	Water catchments Water Pumps (R.O Units)	Wesley Lemari KALGOV	MIRCS IOM National Govt. NDMO	January 2019

Early Warning System

This report identifies the EWS that the people in Gugeegue town composed. The image to the right is representative of the group of youth; describing their ideas of EWS in which their ideas are also stated down in the chart below.

Figure 3.3 Gugeegue youth group representative presents a student perspective on the current early warning system in the Gugeegue community.

To capture the ideas of the whole Gugeegue community, we split the audience in three groups in which were ladies, gentlemen, and youth of Gugeegue where they got in groups and discussed on these matters and jotted down their ideas and concerns on poster papers in which they shared their ideas afterwards. The ideas and thoughts of Gugeegue community is also stated down the table chart in appendix 1.3.

Summary

The community in Gugeegue identified drought has their number one hazard with fire leading in second place.

An underlying theme in the action plan is recognition that laws, programs and plans are already in place but education, participation, and implementation are needed.

In conclusion, the HVCM and EWS exercise for Gugeegue Community was successful and points were taken that ownership and initiative has to be community driven by utilizing their existing capacities to address their concerns.

It is anticipated that with the commencement of the World Bank funded CVM project, the communities will be better prepared and improved their capacity to identify appropriate community actions to deal with the hazards.

In terms of the community prioritization process, possible short-term disaster risk reduction and climate adaptation activities that were identified include the following:

- Rehabilitation of the community evacuation center to ensure minimum standards and safety measures
- Further training and awareness raising with community members on enhancing disaster response capacity
- Formation of community working group to further develop these initiatives.

The Homeowners Handbook is an excellent resources that is available in Marshallese for retrofitting homes to become more typhoon resistant. In addition, community posters that summarize the work above (and found in appendix 2.3) are being printed and distributed to the community. Lastly, the results of these community reports will be utilized to finalize the GIS community evacuation plan maps developed in partnership with MICS.

Community 4: Loij Community

Community Profile Statement

Background

The population of the community is 50+ people. Loij community, though it is separated from Ebeye community, it is also under the Kwajalein Atoll Local Government and all decisions are made by the Council and the Traditional leadership.

The people living on the islet lives along the coastlines. Their livelihoods includes self-employee, running small canteen, fishing, a little farming, working with the National and Local Governments and working as contract workers with contract companies under USAKA.

Figure 4.1 Loij Community female group members work on their hazard vulnerability map.

Geography and Location

Hazard: The people in Loij community had a previous HVCM exercise and action plan from 2014 and only wanted to update. Back in May 2014, the highest votes of disaster were inundation waves, typhoon, and drought. This year, the community kept the hazards they voted for and worked only on modifying needs. The needs that were rank the most by community members: Generator, IOM donate water catchment, and solar radio. In the past 10 years this community was affected by all the droughts in the country as well as the minor inundations and the 2015 wave inundation.

Capacities: Traditional Leadership, Local Government Leadership, Senator(s), Women Organization, Church Leadership, Youth Organizations, Local and National Police and the Community Organization are the strength of the community. They are the decision makers and the community listens to because they know these decisions are for the betterment of the community and wellbeing.

Hazard Vulnerability Risk Mapping

The hazard vulnerability risk mapping process is when the community is split into different groups, usually men and women separately, and the young people. They take flip chart paper and draw a map of their community and identify key are or infrastructure, like churches and evacuation centers, docks, and such. Then they identify the risk, where it floods and disaster prone areas. The groups then present back to each other and have a discussion on how they are different or the same and add where needed. The Loij community identified great deal of flooding and inundation concern around their ocean side of their community.

Hazard Vulnerability Matrixes

Figure 4.2 The Loij Community men's group members explain their community hazard vulnerability map.

The below matrix is the result of the prioritization process where the community of Loij prioritized wave inundations and typhoons as their key hazards. For wave inundations the community identified that their weaknesses are the lack of coastal protection, which includes that there is a loss of location vegetation that reduces erosion and that they do not have any seawalls. Additionally, they know that the fact that their community is at sea level they are vulnerable, and that is compounded by the type of housing which is make shift and not storm proof. They see that they have many capacities that will help them adapt in and address the noted vulnerabilities, this includes the strong social groups and networks that exist from youth groups to formal government establishments. In the short term to address the inundation hazards they want to replant trees along the coast line, build seawalls, elevate their homes and prepare with better transportation and emergency kids.

For typhoons, the community is most concerned about the lack of preparedness, this is includes such areas as infrastructure with the need for more resilient home construction and sea walls, to prevision of better health care with more doctors and medical kits to better communications. They not, like with inundations that their established community networks and groups are their strongest asset. In the short term they aim to prepare with improved infrastructure investments, better preparedness and planning and improved communications systems.

Hazard	Vulnerabilities/ Weaknesses	Adaptive Capacities/ Strengths	Short term Actions
Inundation wave	-No seawall -Not enough plants to protect the coastline -Low-land -Low-housings	-National and Local Governments -Church leaders -Women Club -Youth Club -Men Club -Community Org. -Strong traditional -Leadership/Iroij & Alaps	-Build seawall -Plant trees -Elevate homes -Emergency Kits -Transportation

Typhoon	-Not enough safe house -No VHS radio -No hospital -No Doctors -No transportation for evacuation -No seawall -No emergency kits	-National and Local Governments -Church leaders -Women Club -Youth Club -Men Club -Community Org. -Strong traditional -Leadership/Iroij & Alaps	-RO Unit -Alarm System -Disaster Plan -Seawall -Typhoon-proof structure -Solar innovation -Evacuation -Transportation -Generator

The Loij community action plan short and concise. The community wants to prepare for wave inundation and typhoons by procuring water catchments and RO units supported by Kwajalein Atoll Local Government and outside technical experts.

Hazard	What can be done?	Who within community can be the focal point to lead the plan?	Who from outside of Ebeye can be focal point to lead the plan?	When can it done?
Inundation wave and Typhoon	Water catchments Water Pumps (R.O Units)	KALGOV	MIRCS IOM National Govt. NDMO	January 2019

Early Warning System

In Loij community the key hazards they mapped their EWS for were inundation and typhoon. The community has identified the key source of getting the information was from KalGov/Mayor who received it from the weather services office or Kwajalein Atoll TV. To ensure that all community members received the EWS message, Police would go to house to house and text messages would be sent. The Loij community members feel that some people in the community might not receive the message such as the poorer members of the community that don't own phones, those with disabilities and the elderly. The community also identified that when communities get the warning they prepare by getting food supplies ready, flashlight, batteries, and such. They noted that community leaders must continue to look for funding and opportunities to ensure that evacuation shelters are ready that they are actually open and prepared in times of disaster. They hope that the community will be able to get an alarm system or a siren soon. The full table of Loij community early warning system can be found in appendix 1.4.

Summary

The community in Loij stuck to the hazards that they agreed on 4 years ago keeping wave inundation.

An underlying theme in the action plan is recognition that laws, programs and plans are already in place but education, participation, and implementation are needed.

In conclusion, the HVCM and EWS exercise for Loij was successful and points were taken that ownership and initiative has to be community driven by utilizing their existing capacities to address their concerns.

It is anticipated that with the commencement of the World Bank funded CVM project, the communities will be better prepared and improved their capacity to identify appropriate community actions to deal with the hazards. The Homeowners Handbook is an excellent resources that is available in Marshallese for retrofitting homes to become more typhoon resistant. In addition, community posters that summarize the work above (and found in appendix 2.4) are being printed and distributed to the community. Lastly, the results of these community reports will be utilized to finalize the GIS community evacuation plan maps developed in partnership with MICS.

Community 5: Monkubok Community

Community Profile Statement

Background: Monkubok community is one of the village/towns of Ebeye, Kwajalein Atoll. 'Monkubok Village' itself is one of the many towns on Ebeye including Bouj, Monnin, North Camp, Loij, and Gugeegue Each of these towns have many sub-villages inside them and choose to name their HVCM and EWS report by their town names.

The population of Monkubok is approximately 500+ according to the interview conducted. Formal employment is the main core of survival on Ebeye. Majority of employment are from Kwajalein Military Base and contracted. Local Resource is scare on Ebeye and mainly brought from neighboring atolls.

Monkubok is under the jurisdiction of Kwajalein Atoll Local Government and the Traditional Leaders of Ebeye. The protocol to conduct any activities with community members and local government is coordinate through Mayor and to pay respect to traditional leaders and have their blessing before any project can be good on the ground. For community members coordinate with Local Government, Traditional Leaders, and Land Owners.

Primary social concerns expressed by the community members are alcohol drinking from Monday to Monday affecting family income and the individual drinking jeopardizes or put themselves at risk of losing their jobs. Some community members on Monkubok are starting to see the drinking of kava has a problem because fathers are out drinking from evening until early in morning around 3 or 4 am leaving them no time to spend with family. Very little to no place for entertainment of family, youths, and everyone else leads to underage drinking and other kinds of social problem to build on top of each other. This include teenage pregnancy, weed smoking or drugs, domestic violence, school dropout and so on.

Geography and location:

Hazards: Because Monkubok was severely affected by a King-tide once and the locals still remember what they experience majority of the community members voted for king-tide leading it to be their number one most hazardous hazards. In the past 10 years this community was affected by all the droughts in the country as well as the minor inundations and the 2015 wave inundation.

Effects of Climate Change on hazards: While long-term climate change projections based on findings from the Pacific Climate Change Science Program have indicated in their regional modeling that the incidence and severity of King-tide is set to reduce, the risks from a devastating King-tide are real for the residents

of Monkubok. Also with the projected rise in sea level, the impacts of storms and typhoons may increase especially in relation to the effects of storm surge.

Based on experiences of King-tide, the principle impacts of king-tide as reported by the community were the risk of immediate loss and damage of important property from the high waves and winds bringing in debris. According to the community members King-tide damage homes, bring huge chunks of debris and rocks covering the main road and all around the community, power outage, main source of drinking water is salty, school and work stops or that it disrupt daily routine for everyone. Following the King-tide, the effects of the storm surge, salt water inundation and coastal erosion onto land following the storms was also mentioned as a significant risk.

Capacities: The strengths of this community include the variety of social groups, including Kwajalein Atoll Local Government, Traditional Leaders, Community Members, Church Group and Families, Political Leaders, and Women Group. The community members are driven through strong generosity, cultural and reliance deeply manifested into their very old and respected foundation roots.

Figure 5.1 Monkubok women's group presents their hazard vulnerability map

Hazard Vulnerability Risk Mapping

The hazard vulnerability risk mapping process is when the community is split into different groups, usually men and women separately, and the young people. They take flip chart paper and draw a map of their community and identify key are or infrastructure, like churches and evacuation centers, docks, and such. Then they identify the risk, where it floods and disaster prone areas. The groups then present back to each other and have a discussion on how they are different or the same and add where needed. The drawn maps (from all the groups) can then be transferred onto google earth format.

On the Monkubok map below you can see that the community has identified where there are flood risk (the red lines) and disaster prone areas (near Monnin Harbor). Thy have also noted key community locations like KAJUR, Ebeye Dock, community assets like the Bank, and large storage areas.

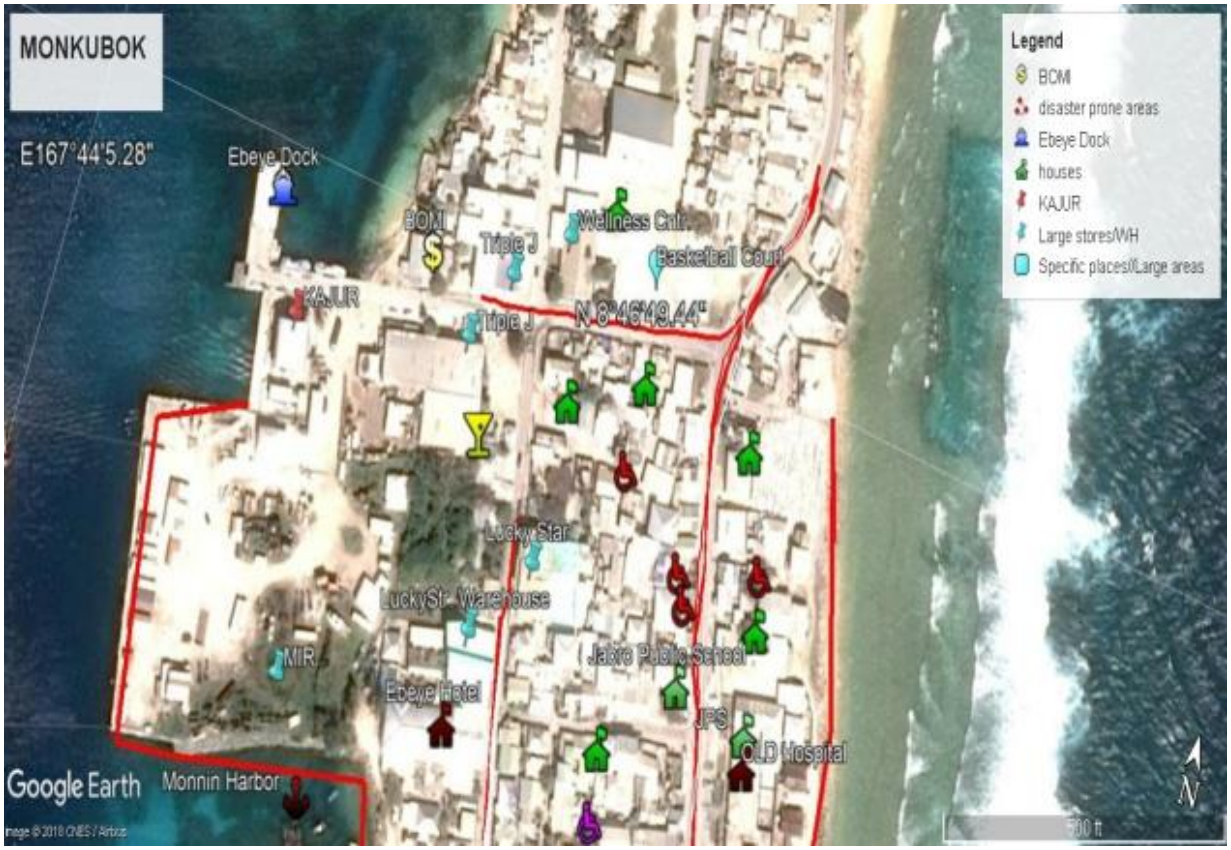


Figure 5.2 The map of Monkubok has drawn by community members identify significant places; main road, inundated areas and areas at risk of disappearing, evacuation shelters, disability homes, schools, church, stores and areas that are usually flooded.

Hazard Vulnerability Matrixes

The below matrix is the result of the prioritization process where the community of Monkubok prioritized a single hazard, king tides, to focus on. The community identified that impacts from king tides as damage to infrastructure such as homes and power supplies. They additionally noted that there is an issue with water supplies due to salt water coming into the wells when there is flooding and that there is disruption to normal life activities such as school because of roads begin flooded. They noted that their strengths are in their community networks such as traditional leaders and schools, as well as their infrastructure such as hotels, schools and churches. They weaknesses they want to overcome are the need for better transportation to facilitation evacuations, especially of vulnerable populations, the need for heavy equipment for cleaning and clearing debris and repairing damage. Lastly they require improved communication tools to improve early warning and response coordination within the community and islands.

In the short term to address these issues, the community would like to procure emergency preparedness materials such as emergency kits, back-up generators, flashlights and solar panels. They additional want to increase preparedness with a siren, and establishing evacuation centers and improved transportation.

Hazards	Impacts	Strength	Weaknesses	Needs / Action items
King-tide	-Damage homes -Drinking water salty -Damage Power lines -Stop school and work -Everywhere is flooded -Power shut down for days	-Traditional Leaders -Local Government -Church -Hotel -School	-No transportation to help bring people to shelters especially the vulnerable ones -There is no cleaning supplies and no loader or huge truck to clear away the flood, debris, rocks sprawling around the main road and our homes backyard -There is no communication from the local government that there will be a king – tide -No money -No food -No water	-Flashlights -Water -Emergency Kits -Backup Generator -Solar -Emergency Plan -Siren -Evacuation Center -Transportation

The Monkobuk community created a very short and achievable action plan for addressing King-tides by procuring solar RO units to ensure clean drinking water if there is inundation of salt water into ground water wells. The community focal point for this is Stalen Glanry with support from outside technical experts.

Hazard	What can be done?	Community Focal Point	Focal Point from outside Ebeye	When can it be done?
King-tide	RO Unit Solar	Stalen Glanry	MIRCS National Gov't NDMO IOM	January 2019

Early Warning System

In Monkubok community the key hazards they mapped their EWS for King-tides. The community has identified the multiple sources for receiving EWS messages including Office of the Chief Secretary, USAKA, Guam, and the Mayor and once those individuals receive the messages they are distributed via police men, TV, phone and through community members talking to each other. The police and the disaster committee play a big role in being responsible for ensuring that everyone in the community is informed. The community leaders have the responsibility to prepare the emergency plans, that evacuation shelters are open on time, and that everyone in the community is informed.

The participants from Monkubok community had concerns that not everyone in the community is always made aware of the EWS. They are particularly worried that mothers, children, elderly and the disabled maybe left out of the EWS process. They would like to have a siren or standard word of mouth system to

ensure all community members are informed in times of emergencies. The full table of Monkubok community early warning system can be found in appendix 1.5.

Summary

The participants have identified King-tide as their main natural hazard concerns.

An underlying theme in the action plan is recognition that laws, programs and plans are already in place but education, participation, and implementation are needed.

In conclusion, the HVCM and EWS exercise for Monkubok Community was successful and points were taken that ownership and initiative has to be community driven by utilizing their existing capacities to address their concerns.

It is anticipated that with the commencement of the World Bank funded CVM project, the communities will be better prepared and improved their capacity to identify appropriate community actions to deal with the hazards.

In terms of the community prioritization process, possible short-term disaster risk reduction and climate adaptation activities that were identified include the following:

- Rehabilitation of the community evacuation center to ensure minimum standards and safety measures
- Further training and awareness raising with community members on enhancing disaster response capacity
- Formation of community working group to further develop these initiatives.

The Homeowners Handbook is an excellent resources that is available in Marshallese for retrofitting homes to become more typhoon resistant. In addition, community posters that summarize the work above (and found in appendix 2.1) are being printed and distributed to the community. Lastly, the results of these community reports will be utilized to finalize the GIS community evacuation plan maps developed in partnership with MICS.

Community 6: Monnin (including Lole) Community

Community Profile Statement

Background: Monnin community (including Lole) is one of the village/towns of Ebeye, Kwajalein Atoll. 'Monnin Town' itself is one of the many villages of Ebeye including Bouj, Mwon Kubok, Loein, Ekojaja, Lojkomlak, Midcorader, and Tobikle

The population of Monnin is approximately 500+ according to the interview conducted. Employment is the main core of survival on Ebeye. Majority of employment are from Kwajalein Military Base and contracted. Local Resource is scare on Ebeye and mainly brought from neighboring atolls.

Monnin is under the jurisdiction of Ebeye Kwajalein Atoll Local Government and the Traditional Leaders of Ebeye. The protocol to conduct any activities with community members and local government is coordinate through Mayor and to pay respect to traditional leaders and have their blessing before any

project can be good on the ground. For community members coordinate with Local Government, Traditional Leaders, and Land Owners.

Primary social concerns expressed by the community members were underage drinking alcohol, chewing betelnut, smoking cigarette, and hanging out around town very late into the night regardless of curfew hours.

Geography and location:

Hazards: Because Monnin was severely affected by a typhoon and drought once and the locals still remember what they experience majority of the community members voted for typhoon leading it to be their number one hazards and drought to be their second hazards. In the past 10 years this community was affected by all the droughts as well as the minor inundations and the 2015 wave inundation.

Effects of Climate Change on hazards: While long-term climate change projections based on findings from the Pacific Climate Change Science Program have indicated in their regional modeling that the incidence and severity of typhoons is set to reduce, the risks from a devastating typhoon are real for the residents of Monnin. Also with the projected rise in sea level, the impacts of storms and typhoons may increase especially in relation to the effects of storm surge.

Based on experiences of typhoon, the principle impacts of typhoons as reported by the community were the risk of immediate loss important property from the high winds, rain, falling trees and debris and waves. Following the typhoon, the effects of the storm surge, salt water inundation and coastal erosion onto land following the storms was also mentioned as a significant risk.

Capacities: The strengths of this community include the variety of social groups, including Kwajalein Atoll Local Government, Traditional Leaders, Community Members, Church Group and Families, Political Leaders, and Women Group. The community members are driven through strong generosity, cultural reliance deeply manifested into their very old and respected foundation roots.

Hazard Vulnerability Risk Mapping

The hazard vulnerability risk mapping process is when the community is split into different groups, usually men and women separately, and the young people. They take flip chart paper and draw a map of their community and identify key are or infrastructure, like churches and evacuation centers, docks, and such (as seen in figure 6.1). Then they identify the risk, where it floods and disaster prone areas. The groups then present back to each other and have a discussion on how they are different or the same and add where needed. The drawn maps (from all the groups) can then be transferred onto google earth format (as seen in figure 6.2)

Figure 6.1 Map drawn by Monnin Youth Group. Red showing the areas that are dangerous and already at risk of costal erosion and old hospital, old hotel, and old ship that are eroding away and have already lead for the loss of some life.

On the Monkubok map below you can see that the community has identified where there are flood risk (the red lines). They have also identified where persons with disabilities are (the wheelchairs) and key community assets such as government buildings and community gather points such as churches.

Figure 6.2 Map drawn by Monnin community members combine and in google earth format.

Hazard Vulnerability Matrixes

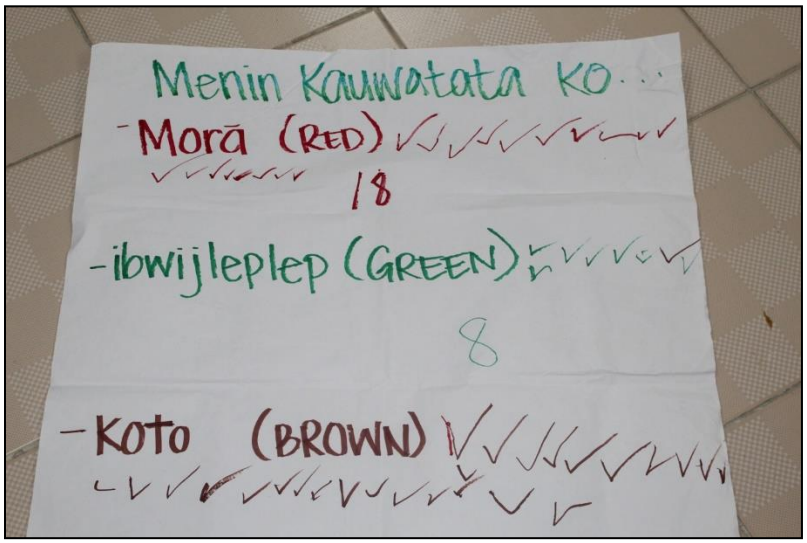


Figure 6.3 Monnin prioritizing their hazards

The picture to the right is the result of the prioritization process for hazard planning in the community of Monnin prioritized, typhoons and droughts were prioritized. The community identified that impacts/risks from typhoons as damage to infrastructure such as homes, power supplies and sea wall. They additionally noted that there is an issue with food and water supplies which can result in severe health risks, loss of food stock and lack of water. The vulnerabilities that they feel is that there is a lack of awareness on disaster preparedness and response, this includes insufficient communications, limited emergency response supplies such as flashlights, insufficient food stocks and no standardized EWS. They noted that their strengths are in their community networks such as traditional leaders and schools, as well as their infrastructure such as hotels, schools and churches. Their short term actions include preparing food and water stocks, emergency kits, improving community preparedness through training and action planning and small infrastructure repairs. In the longer term the community of Monnin aims to build a sea wall, renovate buildings and prepare a safe house for times of disaster.

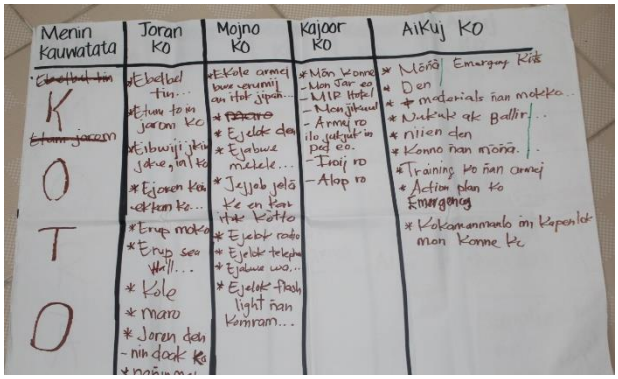


Figure 6.4 Table done by Monnin Community members showing the impacts, weaknesses, strength, and needs of storm/typhoon

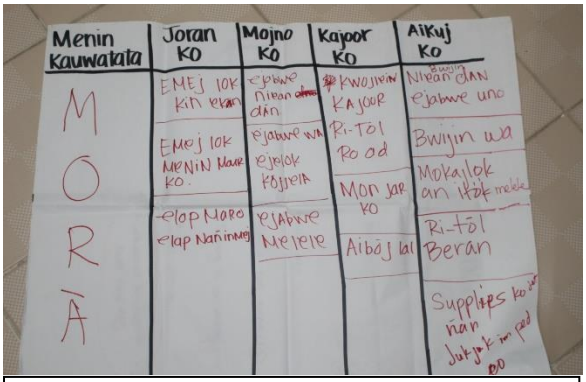


Figure 6.5 Monnin Community Members listing down the impacts, vulnerability and weaknesses of Drought

For droughts, the communities key concern was around water shortage related impacts such as increase in illness related to lack of water, diminishing food stocks, both vegetation and animals and limited drinking water. The vulnerabilities the community feels is because of lack of water catchment systems, little notice or understanding of droughts and lack of transportation. The capacities they feel they have to address drought are whining the local government networks, traditional leaders and state owned enterprise KAJUR. Additionally they need to utilize their catchments that exist effectively and look for

more ground water. In the short term to address drought, the community aims to look for additional water catchment systems, ensure medicine for drought related illness are stocked, improve communications on drought emergency preparedness and work with traditional leaders for more action. In the long term, they are seeking support from external partners for additional supplies and tools to prepare as well as look at building an underground aquafer for water storage.

Hazard	Impact/Risks	Vulnerabilities/ Weakness	Adaptive Capacities/Strengths	Short-term actions	Long Term Action
Typhoon (KOTO)	- Tin roofs blown off. - Damaged electric lines - Flooded houses, buildings and streets - Damaged vegetation - Damaged buildings and homes - Damaged sea walls - Starvation - Thirsty; dirty drinking water - Diseases / sickness spreading.	-Starvation from lack of help/aid. - No water - Not enough understanding of what is going on. - No notice or announcement of typhoon. - No tools for communication (phones, radios, walktalkies) - No transportation - No flashlight and other tools for blackout & no electricity.	- Shelter (Church, Schools) - MIR hotel - People of the town - Generosity & Help - Chiefs - Heads of the island (Senator, chief secretary, mayor, Landowners & etc.)	- Food - Water - Emergency kits - Materials - Water catchments - Trainings - Action plan	- Building stronger sea walls. - Renovate buildings - Stronger safe houses
Drought (MORA)	-Damaged vegetation -Extinct of animals. -small amount of drinking water. - many different diseases and sickness	- Few water catchments - transportation - no announcements or notice - lack of communication -lack understanding of drought	- Kwajalein Atoll - KAJUR Dpt. - Chiefs - Government - Leaders of the Island. - Church - water stored under ground - full water catchments	- Sending of more water catchments - Medicine for the sick from drought diseases - transportation - Faster act of communication and announcements - leaders taking action	- Supplies and tools for aid in times of drought. - new/more underground water keepings.

The Monnin community completed a community action plan with 4 key action points, first to prepare emergency kits, second to maintain and strengthen evacuation shelters, third to procure water catchments, and forth stockpiling of medical supplies. The community has then identified the specifics of what has to be done and where, who will be responsible, if funding is required, who can provide technical assistance and who in the community can lead the actions.

Community Actions	What has to be done?	Who can authorize Action to proceed?	Is funding required?	Is technical support needed? Who?	Who in the community can lead this action? When?
1. Emergency Kits	Placed at: -Evacuation Shelters -MIR Hotel Requires: Generosity and Help between community members Support from Traditional Leaders and Local Government	- Traditional Leaders and Landowner	Yes	Is technical support required: Yes Who can provide: IOM, Office of the Chief Secretary National Disaster Office, and Programs or Agency that can help	Who can lead: Office Of the Chief Secretary, Deputy Chief Secretary Abacca Anjain Maddison Kearin Dribo Joseph Loeak When will it be done by: December 2019
2. Maintain/Strengthen Evacuation Shelters	What can be done? _Trainings on Essential of Humanitarian Aid has been conducted on Ebeye -Emergency First Respond Training for CPR and First Aid in the school and communities around Ebeye -Jerry Cans distributed to	-Traditional Leaders and Land owners	Yes	Is technical support required: Yes Who can help: IOM, Office of the Chief Secretary National Disaster Office, and Programs or Agency that can help	Who can lead: Office Of the Chief Secretary, Deputy Chief Secretary Abacca Anjain Maddison

	members of the community -Support from Traditional Leaders and Local Government				
3.Water catchment	Work with Kwajalein Atoll local government, KAJUR, Chiefs, water catchments	-Traditional Leaders and Land owners	Yes	Is technical support required: Yes Who can help: IOM, Office of the Chief Secretary National Disaster Office, and Programs or Agency that can help	Who can lead: Kearin Dribo
4. Medication	Work with Kwajalein Atoll local government, KAJUR, Chiefs,	-Traditional Leaders and Land owners	Yes	Is technical support required: Yes Who can help: IOM, Office of the Chief Secretary National Disaster Office, and Programs or Agency that can help	Who can lead: Joseph Loeak

Early Warning System

In Monnin community the key hazards they mapped their EWS were typhoons and drought. The community has identified the multiple sources for receiving EWS messages including Office of the Chief Secretary, USAKA, Guam, and the Mayor and once those individuals receive the messages they are

distributed via police men, TV, phone and through community members talking to each other. The police and he disaster committee play a big role in being responsible for ensuring that everyone in the community is informed. The community leaders have the responsibility to prepare the emergency plans, that evacuation shelters are open on time, and that everyone in the community is informed.

The participants from Monnin community had concerns that not everyone in the community is always made aware of the EWS. They are particularly worried that mothers, children, elderly and the disabled maybe left out of the EWS process. They would like to have a siren or standard word of mouth system to ensure all community members are informed in times of emergencies. They noted the importance that they system would work when there is no power or wifi. The full table of Monnin community early warning system can be found in appendix 1.6.

Summary

The participants have identified typhoons and drought as their two main natural hazard concerns.

An underlying theme in the action plan is recognition that laws, programs and plans are already in place but education, participation, and implementation are needed.

In conclusion, the HVCM and EWS exercise for the Monnin Community was successful and points were taken that ownership and initiative has to be community driven by utilizing their existing capacities to address their concerns.

It is anticipated that with the commencement of the World Bank CVM project, the communities will be better prepared and improved their capacity to identify appropriate community actions to deal with the hazards.

In terms of the community prioritization process, possible short-term disaster risk reeducation and climate adaptation activities that were identified include the following:

- Rehabilitation of the community evacuation center to ensure minimum standards and safety measures
- Further training and awareness raising with community members on enhancing disaster response capacity
- Formation of community working group to further develop these initiatives.
- Strengthening disaster preparedness through establishments of Emergency Kits, Water catchments, and Medication.

The Homeowners Handbook is an excellent resources that is available in Marshallese for retrofitting homes to become more typhoon resistant. In addition, community posters that summarize the work above (and found in appendix 2.6) are being printed and distributed to the community. Lastly, the results of these community reports will be utilized to finalize the GIS community evacuation plan maps developed in partnership with MICS.

Community 7: Santo Community

Community Profile Statement

Background: Santo is one of the many islands that lies on the Ralik Chain falling on the jurisdiction of Kwajalein Atoll Local Government and its Traditional Leaders.

The population of Santo is approximately 600+ according to the interview conducted. Formal employment is the main core of survival on Santo. Majority of employment are from Roi Namur Military Base and contracted. National and local resource are scare on Santo therefore they depend on Roi Namur to buy their groceries.

Figure 7.2 Santo Community member's votes for prioritizing their highest hazards

The protocol to conduct any activities with community members and local government is paying respect to the Iroj. While paying respect that is when activity is introduced. Once the Iroj and his fellow traditional leaders/land owners give their blessings, coordination is made through with the Mayor and Local Government.

Primary social concerns expressed by the community members were lack of support from local jurisdiction. For example, their request do not come in on exacted time they needed and more often there needs are never meet.

Geography and location:

Hazards: Because Santo was severely affected by a Drought and King-tide once and the locals still remember what they experience majority of the community members voted for Drought leading it to be their number one most hazardous hazards and King-tide to be their second most hazards. In the past 10 years this community was affected by all the droughts as well as the minor inundations and the 2015 wave inundation.

Effects of Climate Change on hazards: The community of Santo have voted for Drought has their number one hazard. Drought has been on Santo on and off, on and off over the past decade. The community of Santo reported that they have been experiencing drought very often.

Working in groups the community listed down the impact of drought. Disease outbreak is one of the top problems they encounter. Swells, pinkeye, coughing, skin rash on kids multiply and spread due to lack of water and knowledge of how to prepare for drought as well has not being informed ahead of time about an upcoming drought.

Capacities: The strengths of this community include the variety of social groups, including Kwajalein Atoll Local Government, Traditional Leaders, Community Members, Church Group and Families, Political Leaders, and Women Group. The community members are driven through strong generosity, cultural reliance and recognition deeply manifested into their very old and respected foundation roots.

Hazard Vulnerability Risk Mapping

The picture to the right is the Santo community map. The hazard vulnerability risk mapping process is when the community is split into different groups, usually men and women separately, and the young people. They take flip chart paper and draw a map of their community and identify key are or infrastructure, like churches and evacuation centers, docks, and such (as seen in figure 7.2).

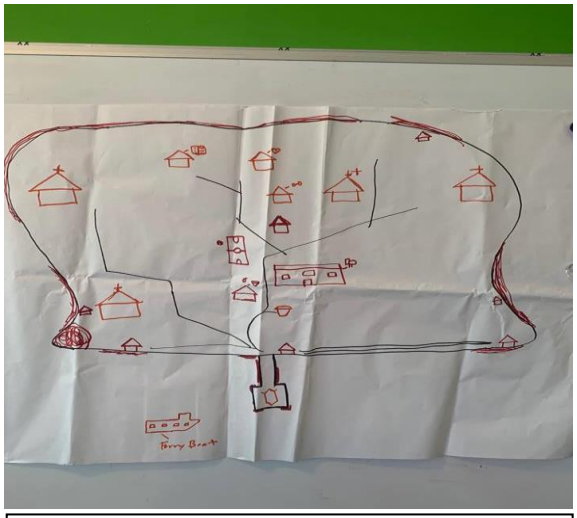


Figure 7.3 Map drawn by Santo community members.

Hazard Vulnerability Matrixes

Below are two images of the community identifying there hazard parameters. The Santo Community identified drought and King-Tides as their key hazards that need to be addressed. For droughts the community identified that the key impacts can range from health impacts, such as diarrhea, pink eye, skin rashes (especially for children), and decreasing medicine stocks. There is also impacts on the environment from crop and livelihood damage, to lack of available water, dusty and dry soil and sometimes cracked tanks. The strengths the communities have identified are the local social groups that are active such as Kwajalein Atoll Local Government, extended family members and schools. There are also the strength of the traditional leadership system and church networks that are there to support the community. Lastly the community identified the support they receive from near-by Military installation Roi-Namur. The weaknesses are that there is a lack of transportation, lack of generators and RO units, limited medication supplies, not enough education and awareness of the general public on how to prepare for droughts. The community has identified that they

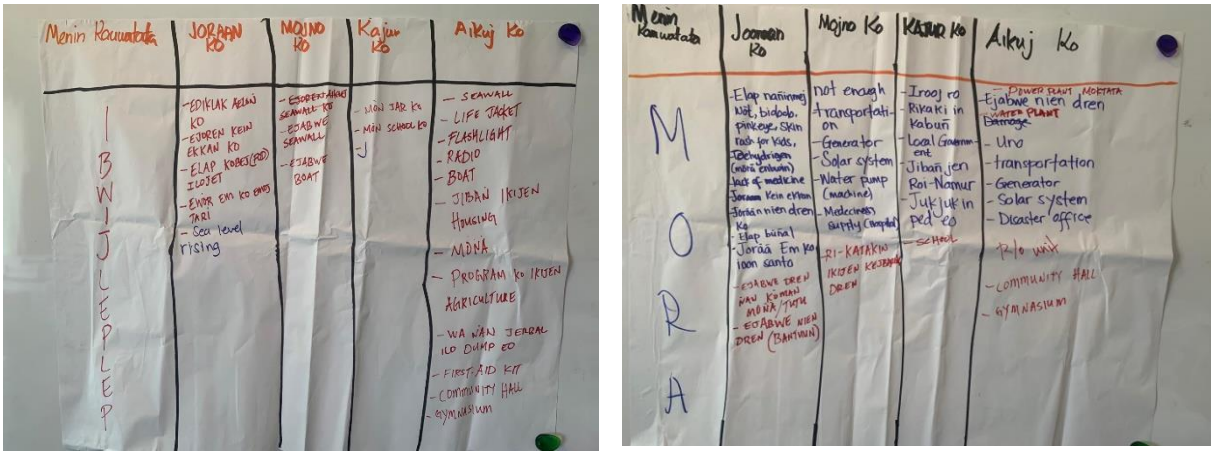


Figure 7.3 Flipcharts showing what the community members listed during Hazard Vulnerability Capacity Mapping Workshop

need to increase the water catchment storage capacity, hold better medicine stock supplies, increase emergency systems and RO unites, as well as generators. They would also like more community centers such as a community hall, disaster office, and gymnasium.

For the King Tides the community has identified impacts including costal erosion that, along with climate change is contributing to islands reducing in size, crop and sustainable livelihoods damage, increase in trash being pushed onto the island and houses impact with damage from King Tides. The strengths that the community see are similar to those in drought including the influence of traditional leaders, church networks, and Kwajalein Atoll Local Government. Additionally there is also the assistance from Roi Namur as in droughts and government structures such schools. The weaknesses the community feels including lack of protection measures from King Tides such as sea walls as well as limited transportation for response. The needs of the community include more King Tide protection such as sea walls and more preparedness measures such as lifejackets, flashlights, radios, boats, repairs to homes, improved agricultural options, first aid training and community evacuation centers.

Hazards	Impacts	Strength	Weakness	Needs
Drought	-Disease outbreak -Swells -Diarrhea -Pinkeye -Skin rash for kids -Lack of medication -Damage crops -Damage water catchment -Dusty environment -Not enough water catchment	-Traditional leaders -Church pastors -KALGOV -Aid and in kind donation from military base at Roi-Namur -Family and community members -School	-No enough transportation. vehicle and boat -No generator -No RO UNIT -Lack of medication -Lack of education and awareness on how prepare for drought and how to save water	-Need more water catchment -Medication -Transportation -Generator -Power Plant -Solar System -Disaster Office -RO Unit -Community Hall -Gymnasium
King Tide	-Island decreasing in size -Destroy crops -Too many trash in the sea -There are houses that the king-tide have move and destroy -Sea-level rise	-Traditional leaders -Church pastors -KALGOV -Aid and in kind donation from military base at Roi-Namur -Family and community members -Schools -Church	-Not enough seawall -Not enough boat	-Seawall -Lifejackets -Flashlight -Radio -Boat -Housing aid -Food -Agriculture -Programs -Transportation -First Aid Kit -Community Hall -Gymnasium

The Santo community created an action plan for two key hazards, drought and King Tides, actions that can be done to address these – procuring RO units and seawalls and boats respectfully, community focal

points – which is Joseph Joseph each time and a list of partners outside the community that can support and when it will be done by.

Hazards	What can be done	Community Focal	Focal Point from outside the community	When can be done?
Drought	Disaster Office RO Unit	Joseph Joseph	MIRCS National Gov't NDMO IOM	January 2020
King Tide	Seawall Boat	Joseph Joseph	MIRCS National Gov't NDMO IOM	January 2020

Early Warning System

In Santo community the key hazards they mapped their EWS were drought and King Tides. The community has identified the multiple sources for receiving EWS messages including Office of the Chief Secretary, USAKA, Kwajalein Atoll Local Government, and the Mayor and once those individuals receive the messages they are distributed via police men, TV, phone and through community members talking to each other. The Santo community does not have an Alarm System and there is no plan for contacting everyone. Some people have radios and sometimes they hear information when they are in Roi Namu.

The participants from Santo community had concerns that not everyone in the community is always made aware of the EWS. They have identified that family members must get themselves to the evacuation sight, they should help their neighbors, and prepare first aid kits and emergency kids. They would like the community leaders to consider building appropriate shelters that have preposition supplies or times of emergency. For better early warning systems there needs to be more education and awareness raising on disaster preparedness. The full table of Santo community early warning system can be found in annex 1.7.

Summary

The participants have identified drought and King Tide as their two main natural hazard concerns.

An underlying theme in the action plan is recognition that laws, programs and plans are already in place but education, participation, and implementation are needed.

In conclusion, the HVCM and EWS exercise for the Santo Community was successful and points were taken that ownership and initiative has to be community driven by utilizing their existing capacities to address their concerns.

In terms of the community prioritization process, possible short-term disaster risk reduction and climate adaptation activities that were identified include the following:

- Rehabilitation of the community evacuation center to ensure minimum standards and safety measures

- Further training and awareness raising with community members on enhancing disaster response capacity
- Formation of community working group to further develop these initiatives.
- trengthening disaster preparedness through establishments of Emergency Kits, Water catchments, and Medication.

The Homeowners Handbook is an excellent resources that is available in Marshallese for retrofitting homes to become more typhoon resistant. In addition, community posters that summarize the work above (and found in appendix 2.7) are being printed and distributed to the community. Lastly, the results of these community reports will be utilized to finalize the GIS community evacuation plan maps developed in partnership with MICS.

Community 8: Tobikile (Including Loie, Eokwojaja & Lojkomlak)

Community Profile Statement

Background

Tobikile, Loie, Ekojaja, and Lojkomlak are located on Ebeye Kwajalein Atoll and runs under Kwajalein Atoll Local Government Jurisdiction. Population is approximately 1000+ according to the interview conducted. Formal employment is the main core of survival. People work on job in order to gain a living and bring food on to the table. The type of job varies from person to person. There are those that work in retailer stores, work as janitors, bank tellers, work in offices, baby sit for a living, or maid for those who earn more income. Like the rest of the workers from around Ebeye majority of the labor force in these four towns works at the Kwajalein. Some are rise early in the morning 4am to catch the ferry while others who work the night shift returns to rest and start again the next evening.

Hazards: Due to frequent experience of drought the communities voted for drought has their number one hazards and king-tide being second. In the past 10 years this community was affected by all the droughts in the country as well as the minor inundations and the 2015 wave inundation.

Effects of Climate Change on hazards: The damage from a drought is real for communities around Ebeye. Community members reported that outbreak of diseases, drinking water contamination, and dehydration/thirst are only few of the many challenge they face. With limited water catchment and medication cough, pink-eyes, skin-rash disease spreads easily.

Based on experiences of King-tide, the principle impacts of King-tide as reported by the community were the risk of immediate loss and damage of important property from the high waves and winds bringing in debris. According to the community members King-tide damage homes, bring huge chunks of debris and rocks covering the main road and all around the community, power outage, main source of drinking water is salty, school and work stops or that it disrupt daily routine for everyone. Following the king-tide, the effects of the storm surge, salt water inundation and coastal erosion onto land following the storms was also mentioned as a significant risk.

Capacities: The strengths of this community include the variety of social groups, including Kwajalein Atoll Local Government, Traditional Leaders, Community Members, Church Group and Families, Political Leaders, and Women Group.

Hazard Vulnerability Risk Mapping

During the mapping process in Tobikle the community identified the most significant places to them, including the main road areas, and the areas at risk of being eroded due to climate change and sea level rise. They aslo identified the evacuation shelters, the homes of those with disabilities, the schools, the churches and stores. They also identified the areas that most commonly flood.

Hazard Vulnerability Matrixes

Figure 8.1 Female community members work on their flipcharts showing what the community members listed during Hazard Vulnerability Capacity Mapping Workshop as their top concerns

The Tobikle community identified El Nino (drought) and King-tides as their key hazards that need to be addressed. For El Nino the community identified that the key impacts can range from sickness and disease outbreak, agricultural damage and a dirty environment. They also identified that the limited water capacity and that it can get contaminated. The strengths, or adaptive capacity, the community members have identified are the traditional leadership system and Kwajalein Atoll Local Government. They also identified that the ground water and water catchments are the also adaptive capacity if they are used properly. The vulnerabilities are that there is a need for additional water catchments, more stock supplies of medication and disruption of normal school and work behavior. The community has identified that they need to increase the water catchment storage capacity, protect their wells and explore more opportunities for well water. Have stand by and regular cleaning of the catchments, roofs and surrounding areas. Raise awareness with the community on the impacts of El Nino and train communities to be more prepared to prepare for and respond to El Nino

For the King-tides the community has identified impacts including damage to infrastructure including homes, agriculture roads and other property such as vehicles. They also noted that the water will from inundation can enter into homes and destroy belongings. There is also an impact on school, work and daily routines. The Tobikle community strengths and adaptive capacities include the traditional leadership on the island, the community its shelf and those that live there, the Kwajalein Atoll Local Government, the National Disaster Management Office, the Office of the Chief Secretary, the Police, the Ministry of

Health and Human Services, women's groups and USAKA. The vulnerabilities from King-tides include flooding of roads (due to broken drains), lack of supplies for response, no emergency supplies or first aid kits, and lack of coordinated needs assessment and response. Lastly they the community believes that there is a lack of education on king tides with the general public. The Tobikle community has identified the need for better emergency response planning, training on emergency response, awareness raising on King-tides, transportation opportunities, repairing of infrastructure, more evacuation shelters and retrofitting of homes to make them more prepared King-tides and storms.

Hazard	Impacts	Adaptive Capacity	Vulnerabilities	Needs
El Nino	-Destroy crops -Dirty environment -All kinds of sicknesses occurs leads to disease outbreak -Not enough water catchment -Contaminated water	-Ground water/wells -Traditional leaders -Kwajalein Atoll Local Government -Rain -Cement Water catchment	-Not enough water catchment -Not enough medication -Sicknesses occurs -No help -Stop school and work	-Water catchment -Tools and supplies to make a ground wells -Cleaning supplies for water — cleaning supplies to clean house roof, the cutter, inside water catchment -Awareness Raising -Training
King-tide	-Damage houses, crops, road, vehicles -Water from the ocean enter houses -Break houses -Impact school and work and daily life routine	-Iroij Ro an aelōñ in -Jukjuk im bed eo -Kwajalein Atoll Local Government -National Disaster Management Office -Office of Chief Secretary -Police force -Ministry of Health and Human Services -Droulul ko an Kōrā -USAKA	-Flooded road -Lack of education -Drain out not working -No tools and equipment to work with -No one is listening to our complains and needs -No emergency supplies -No first aid kit	-Emergency Plan -Training -Awareness raising -Transportation -Drain out repairmen -Need evacuation shelter -Typhoon proof housing

The Tobikle community created a very specific El Nino plan to address El Nino's in Tobikle. The actions that can be done are to procure more water catchments and cleaning supplies. The community identified specific members to implement these actions, as well as the traditional leadership and elected officials. Additionally, the community identified that they can get support from outside the community to complete by January 2020.

Hazard	What can be done?	Community Focal Point	Focal Point from outside Ebeye	When can it be done?
El Nino	Water-catchment Cleaning Supplies	Alusan Abner Councilman Traditional Leaders Senators	MIRCS Majuro Water Sewer Company Anyone who is willing to help	January 2020

			IOM US Embassy	

Early Warning System

In the Tobikle community the key hazards they mapped their EWS were El Nino and King-tide. The community has identified the multiple sources for receiving EWS messages including Guam Weather Service Office, Office of the Chief Secretary, the Mayor, Kwajalein Weather Station, and Local and National Police. The Mayor is the key community member to receive the message on the early warning. The key medium on how message are disseminated in the community are through text message, by the Mayor and by the police going from house to house. There is no formal community alarm system in Tobikle beyond the word of mouth system that the police and disaster committee disseminate. To be prepared for the disaster, community members will rally their families together, get supplies such as food and water and seek shelter at the evacuation shelters. The community would also seek help from local and national government if required.

The participants from Tobikle community had concerns that not everyone in the community is always made aware of the EWS. They are concerned that the very youngest to the very oldest, as well as those with disabilities such as blind and deaf may not be able to receive the messages. They have requested assistance to fix their early warning system and to have more awareness so all communities know. For better early warning systems there needs to be more education and awareness raising on disaster preparedness. The full table of Santo community early warning system can be found in appendix 1.8.

Summary

The participants have identified El Nino as their main natural hazard concerns and King-tide has second concern.

An underlying theme in the action plan is recognition that laws, programs and plans are already in place but education, participation, and implementation are needed.

In conclusion, the HVCM and EWS exercise for Tobikle including Loie, Ekojaja, and Lojkomlak Community was successful and points were taken that ownership and initiative has to be community driven by utilizing their existing capacities to address their concerns.

It is anticipated that with the commencement of the World Bank Project, the communities will be better prepared and improved their capacity to identify appropriate community actions to deal with the hazards.

In terms of the community prioritization process, possible short-term disaster risk reduction and climate adaptation activities that were identified include the following:

- Rehabilitation of the community evacuation center to ensure minimum standards and safety measures
- Further training and awareness raising with community members on enhancing disaster response capacity
- Formation of community working group to further develop these initiatives.

The Homeowners Handbook is an excellent resources that is available in Marshallese for retrofitting homes to become more typhoon resistant. In addition, community posters that summarize the work above (and found in appendix 2.8) are being printed and distributed to the community. Lastly, the results of these community reports will be utilized to finalize the GIS community evacuation plan maps developed in partnership with MICS.

Appendixes

1. Early Warning System Profile

Appendix 1.1 Bouj Community Early Warning System Mapping Table

Community Early Warning System Mapping	
Type of hazard	**Drought and Typhoon**
How does early warning (EW) information reach the community?	Where does the EW message come from? **Guam, Office of the Chief Secretary, Mayor, USAKA**
	Who in the community receives the EW message? **Mayor**
	How is the EW message sent? **Police will use their microphone to announce the EWS** **Facebook,** **V7AB Radio,** **Mass text message from NDMO Office,** **Security checkpoints,** **Weather station ,** **Neighbors, friends, and families**
How does the EW message get passed to the rest of the community?	Does the community have an alarm system? **Yes**
	If so, what type of alarm is it? (List any that apply). **Word of the mouth**
	If so, how many community members can hear the alarm system? Circle all that apply. **Few** **Some** **Most** **All** **Other:**
	Does the community have a word-mouth-system? **Yes**
	If so, is there a plan for contacting every community member? **Yes**
After receiving the EW message, how does your community prepare?	How many hours/days before this hazard would the community receive the EW message? **It depends on where we were when the message was issued out. For example if I was not at home I might not have heard and my family might forget to tell me about it** **24 hours before** **1 hour before** **When the disaster occurs**
	What type of preparations do families do for this specific hazard? **Rally all our families take them down to the evacuation sites.** **Prepare food, water, and drinks** **Help neighbors evacuated**

	What type of preparations would community leaders be responsible for? **Making sure that the evacuation shelter is open** **Help in informing community** **Request for help from traditional leader and local government**
Does your community early warning system adequately warn all community members?	Please describe whether or not you believe all community members receive early warnings? **Less fortune those without wifi, phone, and radios might not know of the EWS** **Physically challenge** **Elderly** **Children**
	Are there any groups in your community that may not receive early warnings? **Elderly, disable, mothers, children**
	Are there special considerations for vulnerable groups, like people with disabilities or the elderly? **I don't know but we should also consider them in our EWS**
How could your community's early warning system improve?	Would equipment like sirens or alarms help? If so which specifically and why? **Yes**
	Would better early warning coordination and planning help? If so, how do you think this could be achieved?

Appendix 1.2 Ebadon Community Early Warning System Mapping Table

Community Early Warning System Mapping	
Type of hazard	**King Tide and Drought**
How does early warning (EW) information reach the community?	Where does the EW message come from? **Radio Station V7AB/ calling out on the radio**
	Who in the community receives the EW message? **People listening to the radio station/Kebot and Morelik**
	How is the EW message sent? **Word of the mouth system/confirm message by radioing Ebeye NTA.**
How does the EW message get passed to the rest of the community?	Does the community have an alarm system? **NO**
	If so, what type of alarm is it? (List any that apply).
	If so, how many community members can hear the alarm system? Circle all that apply. **Few** **Some** **Most** **All** **Other:**
	Does the community have a word-mouth-system?

	YES
	If so, is there a plan for contacting every community member? **NO**
After receiving the EW message, how does your community prepare?	How many hours/days before this hazard would the community receive the EW message? **Couple of hours before it hits the island or if they are lucky**
	What type of preparations do families do for this specific hazard? **Rally all families take them down to the evacuation sites** **Emergency kit** **Working together for the safety of the community.**
	What type of preparations would community leaders be responsible for? **Help arrange Emergency Plans** **Making sure that the evacuation shelter is open** **Help in informing community** **Request for help from traditional leader and local government**
Does your community early warning system adequately warn all community members?	Please describe whether or not you believe all community members receive early warnings? **Yes, with the word of the mouth system people get the early warning fast since it's a small community**
	Are there any groups in your community that may not receive early warnings? **NO**
	Are there special considerations for vulnerable groups, like people with disabilities or the elderly? **None**
How could your community's early warning system improve?	Would equipment like sirens or alarms help? If so which specifically and why? **Yes Siren so that the whole community can hear.**

Appendix 1.3 Gugeegue Community Early Warning System Mapping Table

Community Early Warning System Mapping	
Type of hazard	**Drought/Fire**
	Where does the EW message come from? • **Weather/KTV**

How does early warning (EW) information reach the community?	Who in the community receives the EW message? • **KalGov/Mayor** • **Wesley Lemari** • **Floyd Kaious & Paul Jomi (Police in Gugeegue)**
	How is the EW message sent? • **Select 7+ young men to help send out alert** • **Use Siren** • **Ring Bells**
How does the EW message get passed to the rest of the community?	Does the community have an alarm system? • **YES, same plan they conducted 4 years ago.**
	If so, what type of alarm is it? (List any that apply). • **Ring Bell/ Door-Door/Sirens**
	If so, how many community members can hear the alarm system? Circle all that apply. **Few** **Some** **Most** **All** **Other:**
	Does the community have a word-mouth-system? • **YES**
	If so, is there a plan for contacting every community member?
After receiving the EW message, how does your community prepare?	How many hours/days before this hazard would the community receive the EW message? • ***3 DAYS BEFORE EXPECTED DATE***
	What type of preparations do families do for this specific hazard? • **Flashlight, Radio, Batteries, Water, Food, Knife**
	What type of preparations would community leaders be responsible for? • **As Community discussed, they said the community leaders should at least be prepared & have a first aid kit for the town. Also take care of shelter & calling for help when the time comes**.
Does your community early warning system adequately warn all community members?	Please describe whether or not you believe all community members receive early warnings? • **Less fortunate for those whom are disabled, for the elderly whom have hard time hearing and walking. & babies/ toddlers. This is why they brought up face2face/door2door because that case whoever is able to communicate and/or help them move or be notified can help in this matter.**
	Are there any groups in your community that may not receive early warnings? • **NO**
	Are there special considerations for vulnerable groups, like people with disabilities or the elderly? • **NO**
How could your community's early warning system improve?	Would equipment like sirens or alarms help? If so which specifically and why? **YES. Very much. Because the town is long, it will help make the word spread faster with alarms/sirens to make the door-door technique faster.**

	Would better early warning coordination and planning help? If so, how do you think this could be achieved? • **The community asked for donations like *SIRENS, VHF RADIOS* to be donated for the community and to be prepared beforehand & already have these things would be very much of a help.**

Appendix 1.4 Loij Community Early Warning System Mapping Table

Community Early Warning System Mapping	
Type of hazard	**Wave Inundation and Typhoon**
How does early warning (EW) information reach the community?	Where does the EW message come from? • **Weather/KTV**
	Who in the community receives the EW message? • **KalGov/Mayor**
	How is the EW message sent? • **Police will go around and inform everyone one** • **Text message**
How does the EW message get passed to the rest of the community?	Does the community have an alarm system? • **None**
	If so, what type of alarm is it? (List any that apply). •
	If so, how many community members can hear the alarm system? Circle all that apply. **Few** **Some** **Most** **All** **Other:**
	Does the community have a word-mouth-system? • **None**
	If so, is there a plan for contacting every community member?
After receiving the EW message, how does your community prepare?	How many hours/days before this hazard would the community receive the EW message? • **3 DAYS BEFORE EXPECTED DATE**
	What type of preparations do families do for this specific hazard? • **Flashlight, Radio, Batteries, Water, Food, Knife**
	What type of preparations would community leaders be responsible for? • **Community Leaders can help look for grants to maintain evacuation shelters, ensure that shelters are always open in times of disasters, and seek local government help to provide food and water**
Does your community early warning system adequately warn all community members?	Please describe whether or not you believe all community members receive early warnings? • **Elderly and disable might not receive early warnings as well as family members who are busy in jobs and at home who may not have chance to receive the early warning messages.**

	Are there any groups in your community that may not receive early warnings? • **Yes**
	Are there special considerations for vulnerable groups, like people with disabilities or the elderly? • **Elderly, disable, children, mothers**
How could your community's early warning system improve?	Would equipment like sirens or alarms help? If so which specifically and why? **YES. A siren that is very easy to use and understand can really have make things easier in time of disaster**
	Would better early warning coordination and planning help? If so, how do you think this could be achieved? **Yes if we there is a plan for EWS and if the ones running it will to their parts I believe is going to be perfect.**

Appendix 1.5 Monkobuk Community Early Warning System Mapping Table

Community Early Warning System Mapping	
Type of hazard	**King-tide**
How does early warning (EW) information reach the community?	Where does the EW message come from? **Guam, Office of the Chief Secretary, Mayor, USAKA**
	Who in the community receives the EW message? **Mayor**
	How is the EW message sent? **TV** **POLICE MAN** **PHONE** **NEIGHBOR/COMMUNITY MEMBERS**
How does the EW message get passed to the rest of the community?	Does the community have an alarm system? **No**
	If so, what type of alarm is it? (List any that apply).
	If so, how many community members can hear the alarm system? Circle all that apply. **Few** **Some** **Most** **All** **Other:**
	Does the community have a word-mouth-system? **Yes**
	If so, is there a plan for contacting every community member? **Police and disaster committee will go around and inform everyone**
After receiving the EW message, how does your community prepare?	How many hours/days before this hazard would the community receive the EW message? **24 hours**

	What type of preparations do families do for this specific hazard? **Rally all our families take them down to the evacuation sites** **Prepare food, water, and drinks** **Help neighbors**
	What type of preparations would community leaders be responsible for? **Help arrange Emergency Plans** **Making sure that the evacuation shelter is open** **Help in informing community** **Request for help from traditional leader and local government**
Does your community early warning system adequately warn all community members?	Please describe whether or not you believe all community members receive early warnings? **Not everyone will get the early warning message because the police might not reach everyone in time which is usually the case around here.**
	Are there any groups in your community that may not receive early warnings? **Elderly, disable, mothers, children**
	Are there special considerations for vulnerable groups, like people with disabilities or the elderly? **None but we want to include them**
How could your community's early warning system improve?	Would equipment like sirens or alarms help? If so which specifically and why? **Yes Siren and Word of the Mouth**
	Would better early warning coordination and planning help? If so, how do you think this could be achieved? **Yes , through the development of a national early warning system and training everyone to understand how to use it.**

Appendix 1.6 Monnin Community Early Warning System Mapping Table

Community Early Warning System Mapping	
Type of hazard	**Typhoon and Drought**
How does early warning (EW) information reach the community?	Where does the EW message come from? **Guam, Office of the Chief Secretary, Mayor, USAKA**
	Who in the community receives the EW message? **Mayor**
	How is the EW message sent? **TV** **POLICE MAN** **PHONE** **NEIGHBOR/COMMUNITY MEMBERS**
	Does the community have an alarm system? **Yes**
	If so, what type of alarm is it? (List any that apply).

How does the EW message get passed to the rest of the community?	**SIREN**
	If so, how many community members can hear the alarm system? Circle all that apply. **Few** **Some** **Most** **All** **Other:**
	Does the community have a word-mouth-system? **NO**
	If so, is there a plan for contacting every community member? **NO**
After receiving the EW message, how does your community prepare?	How many hours/days before this hazard would the community receive the EW message? **24 hours**
	What type of preparations do families do for this specific hazard? **Rally all our families take them down to the evacuation sites** **Prepare food, water, and drinks** **Help neighbors**
	What type of preparations would community leaders be responsible for? **Help arrange Emergency Plans** **Making sure that the evacuation shelter is open** **Help in informing community** **Request for help from traditional leader and local government**
Does your community early warning system adequately warn all community members?	Please describe whether or not you believe all community members receive early warnings? **Disability**
	Are there any groups in your community that may not receive early warnings? **Elderly, disable, mothers, children**
	Are there special considerations for vulnerable groups, like people with disabilities or the elderly? **None but we want to include them**
How could your community's early warning system improve?	Would equipment like sirens or alarms help? If so which specifically and why? **Yes Siren and Word of the Mouth**
	Would better early warning coordination and planning help? If so, how do you think this could be achieved? **Yes , Word of the Mouth by the police is only done on the main roads we needs to also be delegate to some people in the community so they can go around house to house .** **Developed a EWS that can work regardless of power and wifi.** **EWS of national government we are not aware of and should be share on radio programs and more awareness raising.**

Appendix 1.7 Santo Community Early Warning System Mapping Table

Community Early Warning System Mapping

Type of hazard	Drought and King-tide
How does early warning (EW) information reach the community?	Where does the EW message come from? **Kwajalein Local Gov't, Office of the Chief Secretary, Mayor, USAKA (United States Army Kwajalein Atoll)**
	Who in the community receives the EW message? **Santo's Lieutenant Joseph Joseph**
	How is the EW message sent? **TV** **ROI NAMUR** **POLICE MAN** **PHONE** **NEIGHBOR/COMMUNITY MEMBERS**
How does the EW message get passed to the rest of the community?	Does the community have an alarm system? **No**
	If so, what type of alarm is it? (List any that apply).
	If so, how many community members can hear the alarm system? Circle all that apply. **Few** **Some** **Most** **All** **Other:**
	Does the community have a word-mouth-system? **No**
	If so, is there a plan for contacting every community member? **No**
After receiving the EW message, how does your community prepare?	How many hours/days before this hazard would the community receive the EW message? **Depends, various sometimes we hear on the Radio and most of the time Santo EW gets from Roi Namur.**
	What type of preparations do families do for this specific hazard? **Rally all our families take them down to the evacuation sites** **Help neighbors** **First Aid Kit** **Emergency Kit**
	What type of preparations would community leaders be responsible for? **Making sure the words get out to the community. Having the shelters ready also making sure they have enough supplies of food and water. Also making sure there are enough emergency kits.**
Does your community early warning system adequately warn all community members?	Please describe whether or not you believe all community members receive early warnings? **Not all members in the community can receive early warning.**
	Are there any groups in your community that may not receive early warnings? **No**
	Are there special considerations for vulnerable groups, like people with disabilities or the elderly? **No**

How could your community's early warning system improve?	Would equipment like sirens or alarms help? If so which specifically and why? **Yes, Siren so that all the members in the community can hear and be well prepared.**
	Would better early warning coordination and planning help? If so, how do you think this could be achieved? **Yes, through the help of outside training/ Awareness. Like IOM, MIRCS and other Ministries that does awareness on disaster. Early warning and coordination can also be from Roi Namur. Roi Namur is the neighboring island that is also under USAKA(United States Army Kwajalein Atoll). Word of the mouth is also being used.**

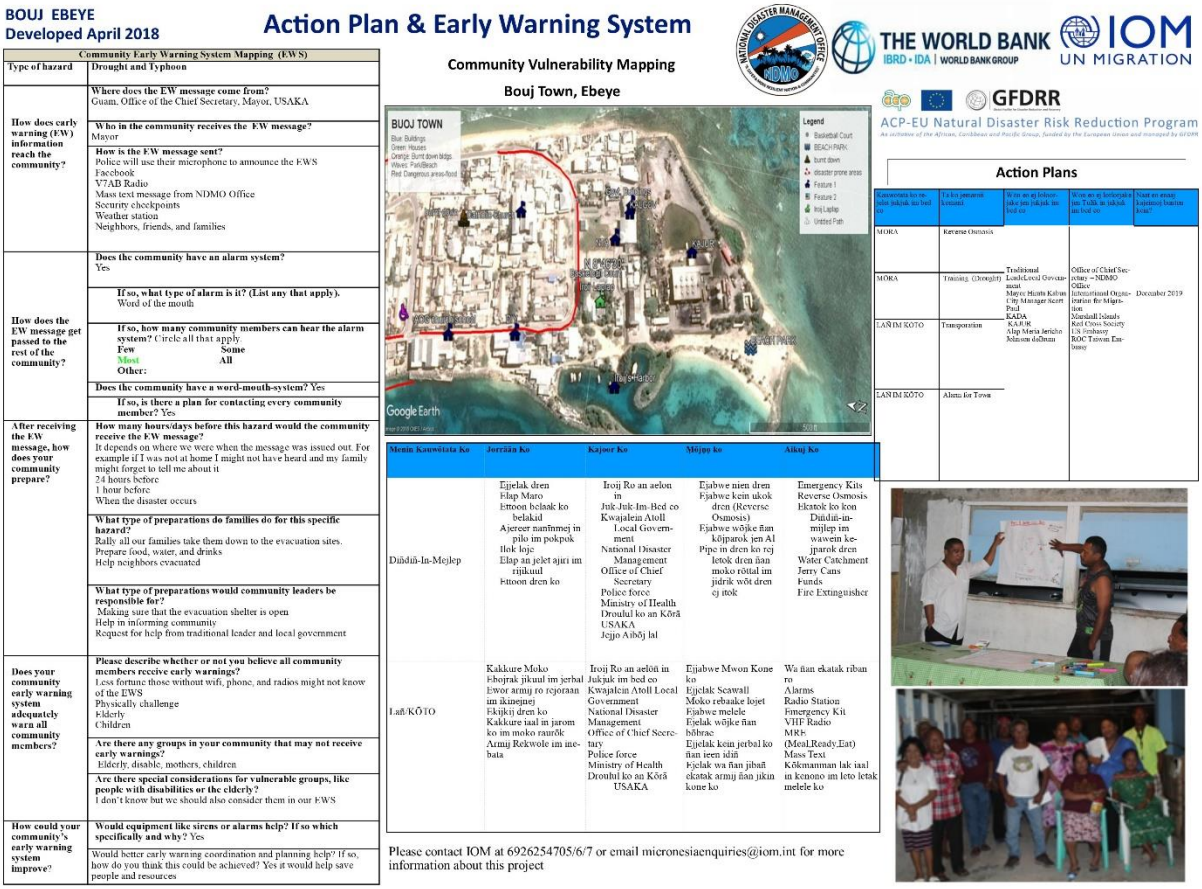
Appendix 1.8 Tobikle Community Early Warning System Mapping Table

Community Early Warning System Mapping	
Type of hazard	**EL Nino and Kingtide**
How does early warning (EW) information reach the community?	Where does the EW message come from? **Guam, Office of the Chief Secretary, Mayor, Kwajalein Weather Station, Local and National Police**
	Who in the community receives the EW message? **Mayor**
	How is the EW message sent? **Text message** **Through the Mayor** **Police going around to inform everyone**
How does the EW message get passed to the rest of the community?	Does the community have an alarm system? **No**
	If so, what type of alarm is it? (List any that apply).
	If so, how many community members can hear the alarm system? Circle all that apply. **Few** **Some** **Most** **All** **Other:**
	Does the community have a word-mouth-system? **Yes**
	If so, is there a plan for contacting every community member? **Police and disaster committee will go around and inform everyone**
After receiving the EW message, how does your community prepare?	How many hours/days before this hazard would the community receive the EW message? **1 day before**
	What type of preparations do families do for this specific hazard? **Rally our families together** **Get some supplies ready (food, water)** **Seek shelters**

	What type of preparations would community leaders be responsible for? **Bring food, water, and clothes** **Find safe places for us to be for the time being** **Seek help from national government and local government**
Does your community early warning system adequately warn all community members?	Please describe whether or not you believe all community members receive early warnings? **Not really early warning system needs to be fix to reach everyone from the youngest to the oldest from the blind to those that can see and hear.**
	Are there any groups in your community that may not receive early warnings? **Disability, Elderly, mother, children**
	Are there special considerations for vulnerable groups, like people with disabilities or the elderly? **None at the moment they should be included too**
How could your community's early warning system improve?	Would equipment like sirens or alarms help? If so which specifically and why? **Anything that is simple to understand**
	Would better early warning coordination and planning help? If so, how do you think this could be achieved? **Awareness** **Door to Door EWS**

2. Community Posters

Appendix 2.1 Bouj Community



BOUJ EBEYE
Developed April 2018

Action Plan & Early Warning System

Community Early Warning System Mapping (EWS)

Type of hazard	**Drought and Typhoon**
How does early warning (EW) information reach the community?	**Where does the EW message come from?** Guam, Office of the Chief Secretary, Mayor, USAKA **Who in the community receives the EW message?** Mayor **How is the EW message sent?** Police will use their microphone to announce the EWS Facebook V7AB Radio Mass text message from NDMO Office Security checkpoints Weather station Neighbors, friends, and families
How does the EW message get passed to the rest of the community?	**Does the community have an alarm system?** Yes **If so, what type of alarm is it? (List any that apply).** Word of the mouth **If so, how many community members can hear the alarm system?** Circle all that apply. **Few** **Some** **Most** **All** **Other:** **Does the community have a word-mouth-system?** Yes **If so, is there a plan for contacting every community member?** Yes
After receiving the EW message, how does your community prepare?	**How many hours/days before this hazard would the community receive the EW message?** It depends on where we were when the message was issued out. For example if I was not at home I might not have heard and my family might forget to tell me about it 24 hours before 1 hour before When the disaster occurs **What type of preparations do families do for this specific hazard?** Rally all our families take them down to the evacuation sites. Prepare food, water, and drinks Help neighbors evacuated **What type of preparations would community leaders be responsible for?** Making sure that the evacuation shelter is open Help in informing community Request for help from traditional leader and local government
Does your community early warning system adequately warn all community members?	**Please describe whether or not you believe all community members receive early warnings?** Less fortune those without wifi, phone, and radios might not know of the EWS Physically challenge Elderly Children **Are there any groups in your community that may not receive early warnings?** Elderly, disable, mothers, children **Are there special considerations for vulnerable groups, like people with disabilities or the elderly?** I don't know but we should also consider them in our EWS
How could your community's early warning system improve?	**Would equipment like sirens or alarms help? If so which specifically and why?** Yes Would better early warning coordination and planning help? If so, how do you think this could be achieved? Yes it would help save people and resources

Community Vulnerability Mapping

Bouj Town, Ebeye

Action Plans

Menin Kauwōtata Ke	Jorrāān Ko	Kajoor Ko	Mōjeo ko	Aikuj Ke
Diñdiñ-In-Mejlep	Ejjelak dren Elap Maro Ettoon belaak ko belakid Ajereer nanīmmej in pilo im pokpok Ilok loje Elap an jeļet ajiri im rijikuul Ettoon dren ko	Iroij Ro an aelon in Juk Juk Im Bed co Kwajalein Atoll Local Government National Disaster Management Office of Chief Secretary Police force Ministry of Health Droulul ko an Kōrā USAKA Jejjo Aibōj lal	Ejabwe nien dren Ejabwe kein ukok dren (Reverse Osmosis) Ejabwe wōjke ñan kōjparok jen Al Pipe in dren ko rej letok dren ñan moko rōttal im jidrik wōt dren ej itok	Emergency Kits Reverse Osmosis Ekatok ko ion Diñdiñ-in-mijlep im wawein ke-jjparok dren Water Catchment Jerry Cans Funds Fire Extinguisher
Lañ/KŌTO	Kakkure Moko Ebojrak jikuul im jerbal Ewor armij ro rejoraan im ikinejnej Ekjikij dren ko Kakkure iaal in jarom ko im moko raurōk Armij Rekwole im inebata	Iroij Ro an aelōñ in Jukjuk im bed co Kwajalein Atoll Local Government National Disaster Management Office of Chief Secretary Police force Ministry of Health Droulul ko an Kōrā USAKA	Ejjabwe Mwon Kone ko Ejjelak Seawall Moko rebaake lojet Ejabwe melele Ejelak wōjke ñan bibbrac Ejjelak kein jerbal ko ñan ieen idiñ Ejjelak wa ñan jibañ ekatak armij ñan jikin kone ko	Wa ñan ekatak riban ro Alarms Radio Station Emergency Kit VHF Radio MRE-(Meal,Ready,Eat) Mass Text Kōkemamman lak iaal in konono im leto letak melele ko

Please contact IOM at 6926254705/6/7 or email micronesiaenquiries@iom.int for more information about this project

Appendix 2.2. Ebadon Community

Ebadon: Developed January 2019

Community Early Warning System Mapping	
Type of hazard	Drought and King Tide
How does early warning (EW) information reach the community?	Where does the EW message come from? **Radio Station V7AD Majuro and calling out on the**
	Who in the community receives the EW message? **People listening to the radio station/ Kebot nr Morelik**
	How is the EW message sent? **Word of the mouth system/confirm message by radioing NTA**
How does the EW message get passed to the rest of the community?	Does the community have an alarm system? **No**
	If so, what type of alarm is it? (List may that apply).
	If so, how many community members can hear the alarm system? Circle all that apply: **Few** **Some** **Most** **All** **Other:**
	Does the community have a word-mouth system? **Yes**
	If so, is there a plan for contacting every community member? **Yes, disaster committee will go around and inform everyone**
After receiving the EW message, how does your community prepare?	How many hours/days before this hazard would the community receive the EW message? **Couple of hours before it hits or if they catch the news on the radio than on that day they hear the news**
	What type of preparations do families do for this specific hazard? **Rally our families together** **Get some supplies ready (food, water)** **Seek shelters** **Emergency kits** **Working together for the safety of the community**
	What type of preparations would community leaders be responsible for? **Help arrange Emergency Plans** **Making sure that the evacuation shelter is open** **Help in informing community** **Request for help from traditional leader and local government**
Does your community early warning system adequately warn all community members?	Please describe whether or not you believe all community members receive early warnings? **Yes, with the word of the mouth system people get the early warning fast since it's a small community**
	Are there any groups in your community that may not receive early warnings? **No**
	Are there special considerations for vulnerable groups, like people with disabilities or the elderly? **None at the moment**
How could your community's early warning system improve?	Would equipment like sirens or alarms help? If so which specifically and why? **Yes Siren so that the whole community can hear**
	Would better early warning coordination and planning help? If so, how do you think this could be achieved? **Awareness** **Door to Door EWS**

Action Plan & Early Warning

Community Vulnerability Mapping

Ebadon

Action Plans

Hazards	What can be done?	Community Focal Point	Focal Point from outside Ebeye	When can it be done?
King-tide	Water and Food (emergency kit) Boat	-Morelik George -Kebot Johnny -KALGOV -Traditional -Leaders -Senators Mayor City Manager	-MIRCS -IOM -NDMO -NRC	January 2020
Drought	Water catchment RO Unit	Morelik George Kebot Johnny KALGOV Traditional Leaders Senators Mayor City Manager	MIRCS IOM NDMO NRC	January 2020

Menin Kauwōtata Ko	Jerrūān Ko	Kajoor Ko	Mōjoo ko	Alkuj Ko
Drought	-will effect marine animals/ one of their main source to get food. -damage vegetation -starvation and thirst -outbreak of disease/ sicknesses -will need water for daily use	-funding from IOM Local Gov't and other agencies that are willing to help -Emergency Kit -Hygiene Kit -Underground wells	-not enough water catchments -vegetation will be damaged -cobra will be damaged therefore cannot trade for $ -migration of marine animals -No caregiver -No protection	-supplies for cleaning water for safe drinking -seedlings -Training awareness for drought-medications -R.O. Unit -water catchments
King-tide	-Destroy marine lives -Damaged vegetation/land -Flooding in houses -Damage reefs and shorelines	-Community working together for safety of their lives -School and church for safe shelter -prepare emergency kits	-No EWS -No enough radio to call outlying one on island -Fear of being unprepared -No transportation -Will damage vegetation -Most of houses are unsafe.	-Funds -water -food -life jackets -seeds for planting -Vehicles *boat for transportation -Wifi

Please contact IOM at 6926254705/6/7 or email micronesiaenquiries@iom.int

Appendix 2.3 Gugeegue Community

Gugeegue Town, Ebeye
Developed November 2018

Action Plan & Early Warning System

THE WORLD BANK
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Community Early Warning System Mapping	
Type of hazard	**Drought/Fire**
How does early warning (EW) information reach the community?	Where does the EW message come from? Weather/KTV
	Who in the community receives the EW message? KalGov/Mayor Wesley Lemari Floyd Kaious & Paul Jemi (Police in Gugeegue)
	How is the EW message sent? Select 7+ young men to help send out alert Use Siren Ring Bells
How does the EW message get passed to the rest of the community?	Does the community have an alarm system? YES, same plan they conducted 4 years ago.
	If so, what type of alarm is it? (List any that apply). Ring Bell/ Door-Door/Sirens
	If so, how many community members can hear the alarm system? Circle all that apply. **Few** **Some** **Most** **All** **Other:**
	Does the community have a word-mouth-system? YES
	If so, is there a plan for contacting every community member?
After receiving the EW message, how does your community prepare?	How many hours/days before this hazard would the community receive the EW message? *3 DAYS BEFORE EXPECTED DATE*
	What type of preparations do families do for this specific hazard? Flashlight, Radio, Batteries, Water, Food, Knife
	What type of preparations would community leaders be responsible for? As Community discussed, they said the community leaders should at least be prepared & have a first aid kit for the town. Also take care of shelter & calling for help when the time comes.
Does your community early warning system adequately warn all community members?	Please describe whether or not you believe all community members receive early warnings? Less fortunate for those whom are disabled, for the elderly whom have hard time hearing and walking, & babies/ toddlers. This is why they brought up face2face/ door2door because that case whoever is able to communicate and/or help them move or be notified can help in this matter.
	Are there any groups in your community that may not receive early warnings? NO
	Are there special considerations for vulnerable groups, like people with disabilities or the elderly? NO
How could your community's early warning system improve?	Would equipment like sirens or alarms help? If so which specifically and why? YES. Very much. Because the town is long, it will help make the word spread faster with alarms/sirens to make the door-door technique faster.
	Would better early warning coordination and planning help? If so, how do you think this could be achieved? The community asked for donations like *SIRENS, VHF RADIOS* to be donated for the community and to be prepared beforehand & already have these things would be very much of a help.

Community Vulnerability Mapping

Gugeegue Town, Ebeye

Menin Kauwōtata Ko	Jorrāān Ko	Kajoor Ko	Mōjņo ko	Aikuj Ko
MŌRA	No water Pink Eye Diarrhea Dusty atmosphere Contaminated water Damaged vegetation Absent from school due to no water	Few water catchments Damaged water to plant vegetation No R.O Units Purchase water from KAJUR No transportation Not enough water to cool down fire	KAJUR Stores to purchase water Sea water Hand sanitizer Few water catchments 10 ground water for community Trash bins	Water catchments Water Pumps Clorox to clean water Cleaning water catchments RO Unit

Gugeegue Community Members Group Photo

Please contact IOM at 6926254705/6/7 or email micronesiaenquiries@iom.int
Please contact Kawa Jatios at 2353222

GFDRR

ACP-EU Natural Disaster Risk Reduction Program

An initiative of the African, Caribbean and Pacific Group, funded by the European Union and managed by GFDRR

Action Plans

Hazard	What can be done?	Who within community can be the focal point to lead the plan?	Who from outside of Ebeye can be focal point to lead the plan?	When can it be done?
Drought	Water catchments Water Pumps (R.O Units)	Wesley Lemari KALGOV	MIRCS IOM National Govt. NDMO	January 2019

Raki Samuel with IOM Staff Maya Sam presentation on Early Warning System.

Lorraine Bolkeim presenting the women's group views on the early warning system and the areas needing capacity building.

Kwajalein Atoll High School student shares the perspective of the youths on Hazard Vulnerability Capacity Mapping and Early Warning System

Appendix 2.4 Loij Community

LOIJ, EBEYE
Developed April 2018

Action Plan & Early Warning System

THE WORLD BANK
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IOM
UN MIGRATION

GFDRR
ACP-EU Natural Disaster Risk Reduction Program
An initiative of the African, Caribbean and Pacific Group, funded by the European Union and managed by GFDRR

Community Early Warning System Mapping	
Type of hazard	**Inundation wave, drought, typhoon**
How does early warning (EW) information reach the community?	Where does the EW message come from? Weather, Kwajalein channel, Media, 102.5FM, NTA
	Who in the community receives the EW message? The Mayor – local police- everyone
	How is the EW message sent? Police will use siren to notify all House to house Kwajalein employee
How does the EW message get passed to the rest of the community?	Does the community have an alarm system? None
	If so, what type of alarm is it? (List any that apply). Police siren and house to house
	If so, how many community members can hear the alarm system? Circle all that apply. **Few** **Some** **Most** **All** **Other:**
	Does the community have a word-mouth-system? YES
	If so, is there a plan for contacting every community member? Yes
After receiving the EW message, how does your community prepare?	How many hours/days before this hazard would the community receive the EW message? *3 DAYS BEFORE EXPECTED DATE*
	What type of preparations do families do for this specific hazard? Prepare food, lights, batteries Seek shelter
	What type of preparations would community leaders be responsible for? Help spread the word and shelter
Does your community early warning system adequately warn all community members?	Please describe whether or not you believe all community members receive early warnings? Only few people can receive early warning. There might be people who are not at home or not connected to radio and interent and will not be able to hear the warning.
	Are there any groups in your community that may not receive early warnings? Yes
	Are there special considerations for vulnerable groups, like people with disabilities or the elderly? Yes
How could your community's early warning system improve?	Would equipment like sirens or alarms help? If so which specifically and why? Yes Siren
	Would better early warning coordination and planning help? If so, how do you think this could be achieved? Loij community request IOM to help improve NTA System. No signal both phone and intemet

Community Vulnerability Mapping

LOIJ Town, Ebeye

Menin Kauwotata	Mojno ko	Kajor ko	Aikuj ko
Inundation (Waves)	Ejelak Seawall Ejabwe Jalitak nan bobrae jen an uwe no Etae Ene eo Etae Moko/Imoko	National and Local Governments Church leaders Women Club Youth Club Men Club Community Org. Strong traditional Leadership/Iroij & Alaps	Ekal Seawall Kautejlak Moko/Imon Joke ko Emergency Kits Transportation
Mora	Ejabwe nien dren Ejelak R/O Unit Ejabwe wojke	National and Local Governments Church leaders Women Club Youth Club Men Club Community Org. Strong traditional Leadership/Iroij & Alaps	Bantoon R/O Unit Kainekan
Koto/LAN	Not enough safe house No VHS radio No hospital No Doctors No transportation for evacuation No seawall No emergency kits	National and Local Governments Church leaders Women Club Youth Club Men Club Community Org. Strong traditional Leadership/Iroij & Alaps	R/O Unit Alarm System Disaster Plan Seawall Typhoon-proof structure Solar innovation Evacuation Transportation

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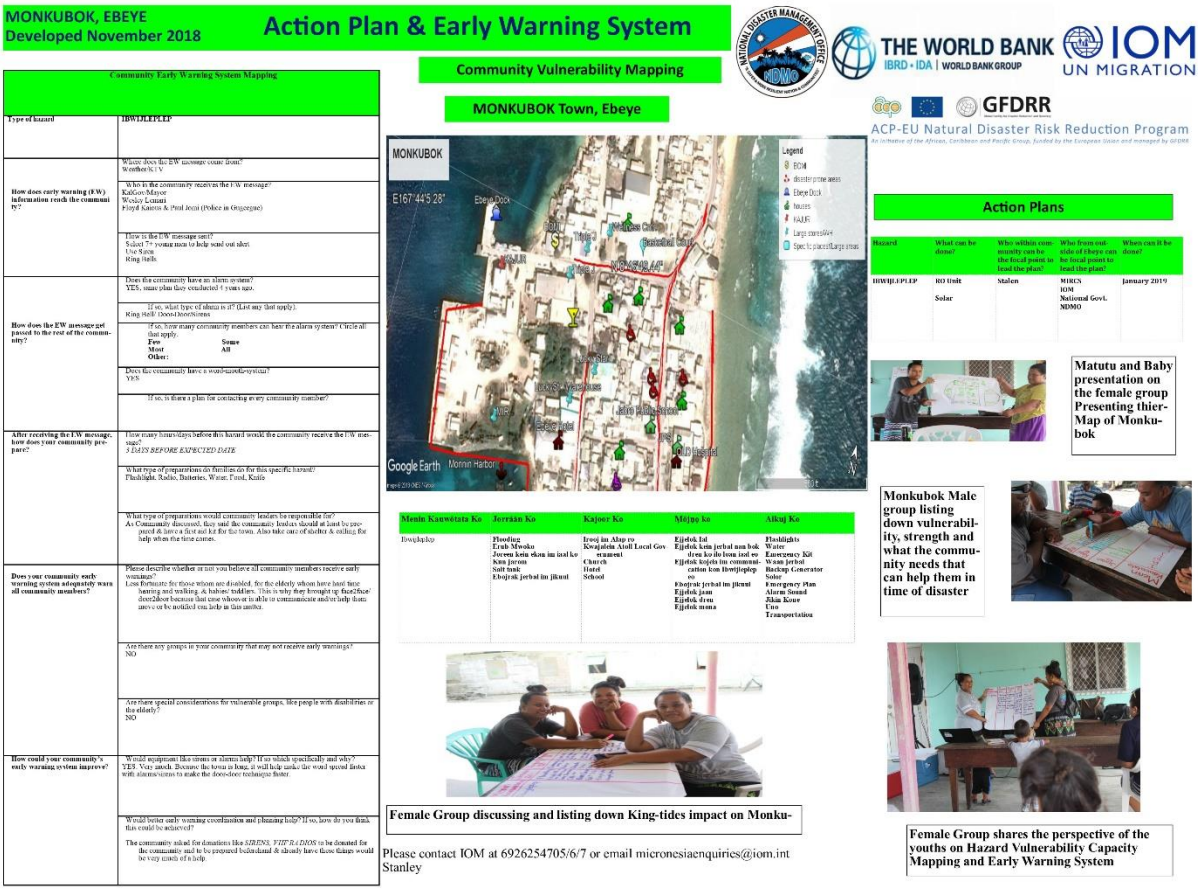
Action Plans

Kauwōtata ko rejelet jukjuk im bed eo	Ta ko jemaroñ kōmani	Wōn eo ej loloorjake jen jukjuk im bed eo	Won eo ej lorlorjake jen Tulik in jukjuk im bed eo	Naat eo enaaj kajeimoj bunton kein?
Inundation (waves)	Generator	Alap Kikai Jatios Kawa Jatios Office of the Chief Secretary Deputy Chief Secretary, Abacca Anjain Madison	International Organization for Migration Office of the Chief Secretary National Disaster Office Other Agencies and Programs that can Help	December 2019
Drought (MORA)	IOM to Donate Water catchment			
KOTO/LAN	Solar Radio			

Appendix 2.5 Monkobuk Community



MONKUBOK, EBEYE
Developed November 2018

Action Plan & Early Warning System

Community Early Warning System Mapping

Type of hazard	IBWJLIEPLEP
How does early warning (EW) information reach the community?	Where does the EW message come from? Weather/ICT V Who in the community receives the EW message? KalGov-Mayor Wesley Lemmi Floyd Aamra & Peal Jessi (Police in Gujeegne) How is the EW message sent? Sakot 7+ young men to help send out alert. Use Siren Ring bells
How does the EW message get passed to the rest of the community?	Does the community have an alarm system? YES, main plan Gov conducted 5 years ago. If so, what type of alarm is it? (List any that apply). Ring Bell/ Hood/Horn/Sirens If so, how many community members can hear the alarm system? Circle all that apply. Few Some Most All Other: Does the community have a word-of-mouth system? YES If so, is there a plan for contacting every community member?
After receiving the EW message, how does your community prepare?	How many hours/days before this hazard would the community receive the EW message? *3 DAYS BEFORE EXPECTED DATE* What type of preparations do families do for this specific hazard? Flashlight, Radio, Batteries, Water, Food, Knife What type of preparations would community leaders be responsible for? As Community discussed, they said the community leaders should at least be prepared & have a first aid kit for the town. Also take care of shelter & calling for help when the time comes.
Does your community early warning system adequately warn all community members?	Please describe whether or not you believe all community members receive early warnings? Less Fortunate for those whom are disabled, for the elderly whom have hard time hearing and walking. & babies/ toddlers. This is why they brought up face2face/ door2door because that case whom or is able to communicate and/or fully them move or be notified can help in this matter. Are there any groups in your community that may not receive early warnings? NO Are there special considerations for vulnerable groups, like people with disabilities or the elderly? NO
How could your community's early warning system improve?	Would equipment like sirens or alarms help? If so which specifically and why? YES. Very much. Because the town is long, it will help ranks the word spread faster with alarms/sirens to make the door-door technique faster. Would better early warning coordination and planning help? If so, how do you think this could be achieved? The community asked for donations like *SIRENS, VHF RADIOS* to be donated for the community and to be prepared beforehand & already have those things would be very much of a help.

Community Vulnerability Mapping

MONKUBOK Town, Ebeye

Menin Kauwētata Ke	Jorrāān Ko	Kajoor Ko	Mējpq Ko	Alkuj Ko
Bwqlqlqlqp	Flooding Erab Mwoko Jorem kein ekon im ioal ke kun jaron Satt tunk Ebojrak jerbal im jikuul	Iroeq im Alap ro Kwajalein Atoll Local Government Church Hotel School	Ejjelok Ial Ejjelok kein jerbal nan bok dren ko ilo loon ioel ro Ejjelok kojelo im communication kon Bwqlqlqlqp ro Ebojrak jerbal im jikuul Ejjelok jaan Ejjelok ilrau Ejjelok mona	Flashlights Water Emergency Kit Waan jerbal Backup Generator Solar Emergency Plan Alarm Sound Ekkn Kaur Uno Transportation

Female Group discussing and listing down King-tides impact on Monku-

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Stanley

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Action Plans

Hazard	What can be done?	Who within community can be the focal point to lead the plan?	Who from outside of theyre can be focal point to lead the plan?	When can it be done?
IBWJLIEPLEP	RO Unit Solar	Malen	MHCN IOM National Govt. NDMO	January 2019

Matutu and Baby presentation on the female group Presenting thier-Map of Monku-bok

Monkubok Male group listing down vulnerability, strength and what the community needs that can help them in time of disaster

Female Group shares the perspective of the youths on Hazard Vulnerability Capacity Mapping and Early Warning System

Appendix 2.6: Monnin Community

MONNIN EBEYE
Developed April 2018

Action Plan & Early Warning System

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Community Early Warning System Mapping	
Type of hazard	**Typhoon and Drought**
How does early warning (EW) information reach the community?	**Where does the EW message come from?** Guam, Office of the Chief Secretary, Mayor, USAKA
	Who in the community receives the EW message? Mayor
	How is the EW message sent? TV POLICE MAN PHONE NEIGHBOR/COMMUNITY MEMBERS
How does the EW message get passed to the rest of the community?	**Does the community have an alarm system?** Yes
	If so, what type of alarm is it? (List any that apply). SIREN
	If so, how many community members can hear the alarm system? Circle all that apply. Few Some Most All Other:
	Does the community have a word-mouth-system? NO
	If so, is there a plan for contacting every community member? NO
After receiving the EW message, how does your community prepare?	**How many hours/days before this hazard would the community receive the EW message?** 24 hours
	What type of preparations do families do for this specific hazard? Rally all our families take them down to the evacuation sites Prepare food, water, and drinks Help neighbors
	What type of preparations would community leaders be responsible for? Help arrange Emergency Plans Making sure that the evacuation shelter is open Help in informing community Request for help from traditional leader and local government
Does your community early warning system adequately warn all community members?	**Please describe whether or not you believe all community members receive early warnings?** Disability do not have equal access
	Are there any groups in your community that may not receive early warnings? Elderly, disable, mothers, children
	Are there special considerations for vulnerable groups, like people with disabilities or the elderly? None but we want to include them
How could your community's early warning system improve?	**Would equipment like sirens or alarms help? If so which specifically and why?** Yes Siren and Word of the Mouth
	Would better early warning coordination and planning help? If so, how do you think this could be achieved? Yes , Word of the Mouth by the police is only done on the main roads we needs to also be delegate to some people in the community so they can go around house to house . Developed a EWS that can work regardless of power and wifi. EWS of national government we are not aware of and should be share on radio programs and more awareness raising.

Community Vulnerability Mapping
MONNIN Town, Ebeye

Menin Kauwōtata Ko	Jorrāān Ko	Kajoor Ko	Mōjņo ko	Aikuj Ko
KŌTO/LAÑ	Ekelok tin ko jen ioon moko Joraan line in jarom Bwijleplep lowan ial ko im moko Kakure kein ekkan ko Kakure mwon jokwe im mwon jer bal ko Kakure Seawall ko Elap Kwole Elap Maro, ettoon dren ko Naninmej ko rajareer	Jikin Kone ko (mwon jar im jikuul) Marshall Island Resort Armij ro ilo jukjuk im bed eo Jouij im Jibañ ko rej itok jen Iroij im Alap ro an Kwajalein Atoll Local Government	Kole itok jen an drik an itok jiban Ejelak drenn Ejabwe melele kon joreen eo ej walok Ejelak nan kakol ej itok Ejelak tool ko nan communication Ejelak naan jiban komakit riban ro Ejelak tainki im tool ko jeet naan jiban ilo ieen an ejelak jarom	Kakajor lak imon kone ko Ekal seawall reben Kakajor lak im keban lak moko Emergency Kits Kain jerbal ko nan jiban ilo ieen mora Ekatok ko kijen mora im bunton na ko nan jiban manjapopo
MORA	Ejoraan kein ekkan ko Ejelak dren Bwijjin kain naninmej	Kwajalein Atoll Local Government Ritel ro an aelōñ eo Irooj im Alap ro mwon Jar ko Ewor Aiboj lal Nien Dren ko	Ewor jejjo nien dren Ejelak wa nan jiban leto letak dren Ejelak kōjela kōn mōra Jabwe communication Jabwe melele ikkijen mōra	Kein jerbal ko ñan jibañ ilo ien mōra Kalōñlak nien dren ko Uno Iaal ñan jibañ leto letak dren Kōmōkaj buñtōn ñan komeleleik dron kōn joraan ak makitkit ko rej walok Ritel ro ren wonmanlok wot im bok konaer ilo makitkit ko an jukjuk im bed ko

Action Plans

Kauwōtata ko rejelet jukjuk im bed eo	Ta ko jemaroñ kōmani	Wōn eo ej loloorjake jen jukjuk im bed eo	Won eo ej lorlorjake jen Tuluk in jukjuk im bed eo	Naat eo enaaj kajeimoj bunton kein?
KŌTO/LAÑ	1. Emergency Kits	Office of the Chief Secretary Deputy Chief Secretary, Abacca Anjain Madison	International Organization for Migration	
KŌTO/LAÑ	2. Maintain/ Strengthen Evacuation Shelters	Kearin Dribo	Office of the Chief Secretary National Disaster Office	
MŌRA	3.Watercatchment	Joseph Loeak	Other Agencies and Programs that can Help	December 2019
MŌRA	4. Medication			

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Appendix 2.7: Santo Community

Santo: Developed January 2019

Community Early Warning System Mapping	
Type of hazard	**Drought and King Tide**
How does early warning (EW) information reach the community?	Where does the EW message come from? **TV** **ROI NAMUR** **POLICE MAN** **PHONE** **NEIGHBOR/COMMUNITY MEMBERS**
	Who in the community receives the EW message? **Santo's Lieutenant Joseph Joseph**
	How is the EW message sent? **Word of the mouth system/confirm message by radioing NTA**
How does the EW message get passed to the rest of the community?	Does the community have an alarm system? **No**
	If so, what type of alarm is it? (List any that apply).
	If so, how many community members can hear the alarm system? Circle all that apply. **Few** **Some** **Most** **All** **Other:**
	Does the community have a word-mouth-system? **Yes**
	If so, is there a plan for contacting every community member? **Yes, disaster committee will go around and inform everyone**
After receiving the EW message, how does your community prepare?	How many hours/days before this hazard would the community receive the EW message? **Depends, various sometimes we hear on the Radio and most of the time Santo EW gets from Roi Namur.**
	What type of preparations do families do for this specific hazard? **Rally all our families take them down to the evacuation sites** **Help neighbors** **First Aid Kit** **Emergency Kit**
	What type of preparations would community leaders be responsible for? **Making sure everyone in the community receives the EW** **Making sure that shelters are safe** **Keep in contact with Kwajalein Local Gov't.** **Safety of the community**
Does your community early warning system adequately warn all community members?	Please describe whether or not you believe all community members receive early warnings? **Not all members in the community can receive Early Warning**
	Are there any groups in your community that may not receive early warnings? **Yes**
	Are there special considerations for vulnerable groups, like people with disabilities or the elderly? **None at the moment**
How could your community's early warning system improve?	Would equipment like sirens or alarms help? If so which specifically and why? **Yes Siren so that the whole community can hear and be well prepared**
	Would better early warning coordination and planning help? If so, how do you think this could be achieved? **Yes, through the help of outside training/ Awareness. Like IOM, MIRCS**

Action Plan & Early Warning

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Community Vulnerability Mapping

Santo

Menin Kauwōtata Ko	Jorrāān Ko	Kajoor Ko	Mōjņo ko	Aikuj Ko
Drought	- Damaged vegetation - Extinct of animals. - small amount of drinking water. - many different diseases and sickness -Limitation of water use for cleaning, prepping food, and for hygiene	- Kwajlein Atoll Local Government –Traditional Leaders –Help from neighboring island, Roi Namur –Santo Elementary School -Church	-Few water catchments -not enough transportation - no announcements or notice -lack of communication - lack understanding of drought -Lack Water pump -No generator	- Sending of more water catchments -Medicine for the sick from drought diseases -announcements –Power Plant for island to have their own electric power – Disaster Office – Transportation – Generator – Solar System – RO Unit Community Hall
King-tide	-Island will be eating away from the ocean -Will damage vegetation -The ocean will be full of trash/dirty -Houses will be destroyed -Flooded houses	-Santo Elementary School for shelter - Santo Protestant Church for Shelter	-No seawall -Not enough boats	-Flashlight -Life Jackets -Radio -Food Supplies -Water Supplies -Seawall -Boat -Working Vehicles to remove trash -Funds to help community prepare for any disaster -Community Hall -Gymnasium

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Action Plans

Hazards	What can be done?	Community Focal Point	Focal Point from outside Ebeye	When can it be done?
King-tide	-Water and Food -Emergency kit -Boat -Seawall	-Joseph Joseph -KALGOV -Traditional -Leaders -Senators -Mayor -City Manager	-MIRCS -IOM -NDMO -NRC	January 2020
Drought	-Water catchment -RO Unit -Training for RO Unit	-Joseph Joseph -KALGOV -Traditional -Leaders -Senators -Mayor -City Manager	MIRCS IOM NDMO NRC	January 2020

Appendix 2.8: Tobikle Community

EBEYE: Tobikle, Loie, Ekojaja and Lojkomlak

Action Plan & Early Warning

Community Vulnerability Mapping

Includes Tobikle, Loie, Ekojaja, Lojkomlak

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Community Early Warning System Mapping

Type of hazard	**EL Nino and Kingtide**
How does early warning (EW) information reach the community?	Where does the EW message come from? **Guam, Office of the Chief Secretary, Mayor, Kwajalein Weather Station, Local and National Police**
	Who in the community receives the EW message? **Mayor**
	How is the EW message sent? **Text message** **Through the Mayor** **Police going around to inform everyone**
How does the EW message get passed to the rest of the community?	Does the community have an alarm system? **No**
	If so, what type of alarm is it? (List any that apply).
	If so, how many community members can hear the alarm system? Circle all that apply. **Few Some** **Most All** **Other:**
	Does the community have a word-mouth-system? **Yes**
	If so, is there a plan for contacting every community member? **Police and disaster committee will go around and inform everyone**
After receiving the EW message, how does your community prepare?	How many hours/days before this hazard would the community receive the EW message? **1 day before**
	What type of preparations do families do for this specific hazard? **Rally our families together** **Get some supplies ready (food, water)** **Seek shelters**
	What type of preparations would community leaders be responsible for? **Bring food, water, and clothes** **Find safe places for us to be for the time being** **Seek help from national government and local government**
Does your community early warning system adequately warn all community members?	Please describe whether or not you believe all community members receive early warnings? **Not really early warning system needs to be fix to reach everyone from the youngest to the oldest from the blind to those that can see and hear.**
	Are there any groups in your community that may not receive early warnings? **Disability, Elderly, mother, children**
	Are there special considerations for vulnerable groups, like people with disabilities or the elderly? **None at the moment they should be included too**
How could your community's early warning system improve?	Would equipment like sirens or alarms help? If so which specifically and why? **Anything that is simple to understand**
	Would better early warning coordination and planning help? If so, how do you think this could be achieved? **Awareness** **Door to Door EWS**

Action Plans

Kauwōtata ko rejelet jukjuk im bed eo	Ta ko jemaroñ kōmani	Wōn eo ej kōlor-jake jan jukjuk im bed eo	Won eo ej lorlorjake jen Tulik in jukjuk im bed eo	Naat eo enaj kajeimoj bunton kein?
El-Nino	Emergency Plan	Traditional LeadeLocal Government Mayor Hirata Kabua City Manager Scott Paul KADA KAJUR Alusana Abner	Office of Chief Secretary – NDMO Office International Organization for Migration Marshall Islands Red Cross Society US Embassy ROC Taiwan Embassy	January 2020
El–Nino	Supplies for Cleaning Water			
King-tide	Transportation Cleaning Supplies			
King-tide	Typhoon Proof House			

Menin Kauwōtata Ko	Jorrāān Ko	Kajoor Ko	Mōjņo ko	Aikuj Ko
El– Nino	Destroy crops Dirty environment All kinds of sicknesses occurs leads to disease outbreak Not enough water catchment Contaminated water	Ground water/wells Traditional leaders Kwajalein Atoll Local Gov't Rain Cement Water catchment	Not enough water catchment Not enough medication Sicknesses occurs No help Stop school and work	Water catchment Tools and supplies to make a ground wells Cleaning supplies for water —cleaning supplies to clean house roof, the gutter, inside water-catchment Awareness Raising Training
King-tide	Damage houses, crops, road, vehicles Water from the ocean enter houses Break houses Impact school and work and daily life routine	Iroij Ro an aeloñ in Jukjuk im bed eo Kwajalein Atoll Local Government National Disaster Management Office of Chief Secretary Police force Ministry of Health Drouhil ko an Kōrā USAKA	Flooded road Lack of education Drain out not working No tools and equipment to work with No one is listening to our complains and needs No emergency supplies No first aid kit	Emergency Plan Training Awareness raising Transportation Drain out repairmen Need evacuation shelter Typhoon proff housing

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3. Guidance notes on the CBDRM Strategy

Appendix 3.1 Community Engagement Guidance Note for CBDRM

Appendix 3.2 Community Disaster Planning Guidance Note

Appendix 3.3 ToR Community Disaster Preparedness and Response Committee