

2023

NATIONAL ADAPTATION PLAN  
COMMUNITY ENGAGEMENT  
SUMMARY REPORT

Arno Atoll



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## OVERVIEW

The International Organization for Migration (IOM) was engaged by the Government of the Republic of the Marshall Islands (RMI) to lead community engagements on the National Adaptation Plan (NAP) in eight Atolls. The engagement team was comprised of IOM staff and three Non-Governmental Organization partners; Jo-Jikum focusing on youth, Women United Together Marshall Islands (WUTMI) focusing on women and inclusion, Marshall Islands Conservation Society (MICS) focusing on livelihoods. This Summary Report reflects the results of all agencies engagements that elevate and articulate the community members voices.

## COMMUNITY BACKGROUND

Arno Atoll is part of the Ratak Chain; it lies 12 miles away from the capital of the Republic of the Marshall Islands (RMI), Majuro. It has a population of 1,146 (619 men and 522 women, down from 1,794 in the intercensal period 2011-2023), distributed in 218 households (55% of which have flush toilets), with an average of 5.3 persons per household. The median age is 22 and almost half of the population (46%) lists “household duties” as their working status, while another significant percentage of the population (42%) is employed, with the bulk of jobs being in government ones (e.g. teachers, police force, councilmen). In terms of education, 58% of the Arno inhabitants have completed high school but only 5% list “some college” as tertiary education. A total of 28 people (2.4% of the population) live with a disability. Arno is considered a rural atoll.

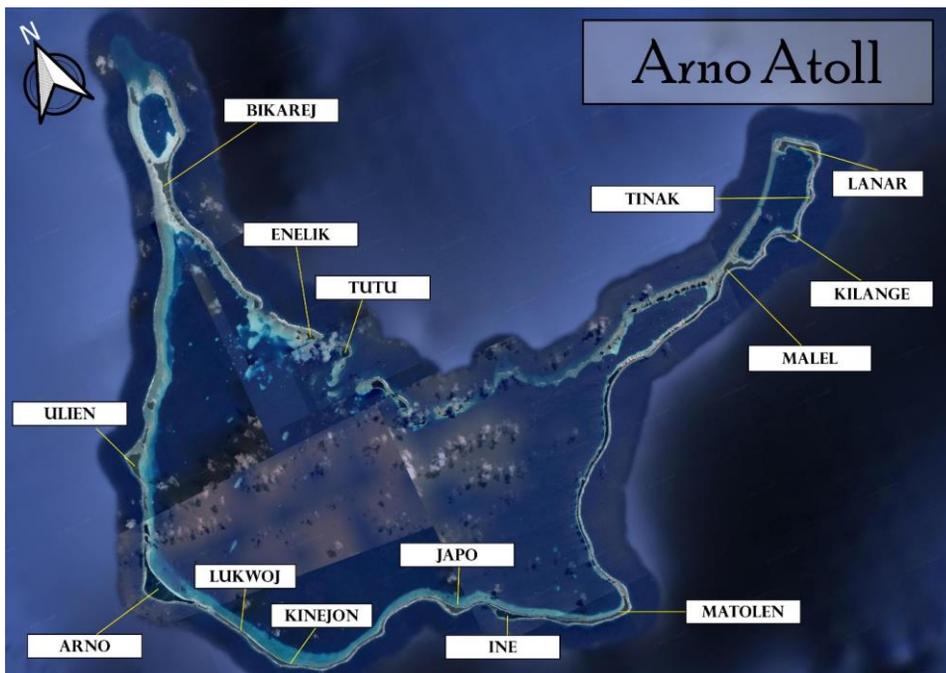


Figure 1: Map of Arno Atoll (from IOM Community Profile)

Arno, Arno, is considered the capital island that measures about 2 miles and is home to many of the Arno Atoll inhabitants. Arno village (as it is also known) has a dock that is the main point of transportation to and from the Atoll, including to its 133 islets. Most transport is done using the Kirtake, a Majuro-based boat that runs a regular 3-day a week schedule (weather permitting). There is one elementary school and four churches. Arno community has good phone and internet service, whereas the rest of the inhabited islets lack these services. Arno's proximity to the urban center of Majuro Atoll and regular shipping means there are many more exports of food, fish, copra and handicrafts than is the case in other islands in the RMI. It must be noted however that these benefits of proximity to the capital apply mostly to Arno village, where as the further locations in Rearlaplap (Kilange, Tinak, Longar and Malel) are much more challenging to reach by boat and are considered quite remote and lacking in services. This also applies to Bikarej which has no safe boat entry point, and Tutu which is isolated from other communities and islands. The median income is \$6,000, and 152 households (70%) get income from the sale of products (including handicrafts), while almost 40% get remittances from overseas. Community profiles for Arno, Malel, Inne, Lukwej, Japo, Kilange, Tinak and Langar can be found in Annexes 1-8 respectively. Additionally, information that was gathered about Arno Atoll and referenced in this report can be found in Annexes 9-12.



Figure 2: The main community Arno Arno HVCM map

There are other smaller communities on Arno Atoll, such as Ulien (around 200 inhabitants) and Lukwej (100 inhabitants). These communities face added difficulties given they have reduced transport options and access to services (e.g. homes in Lukwej lack sanitation facilities, and healthcare and education are often disrupted by lack of medicines and personnel). This lack of services is compensated by a strong sense of community and a good degree of community organization, and there are community-run projects such as for coastal reforestation and crop replanting managed by WUTMI and Jined Kibed. Additionally, a community action plan was drafted in 2017 to help deal with emergencies (Figure 3).

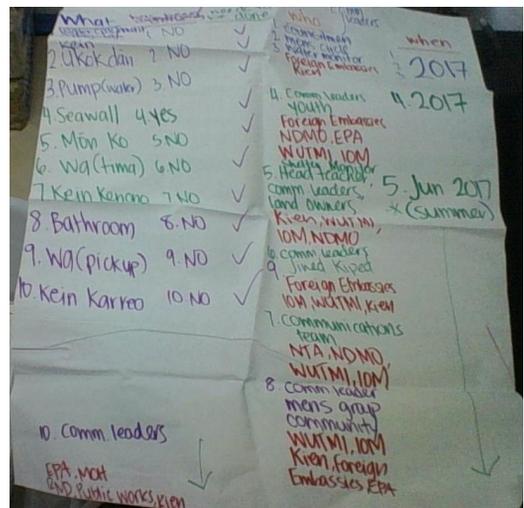


Figure 3: Community action plan, showing plans for drought in brown, plans for high tides in purple and plans for typhoon in blue

## THE CONSULTATION PROCESS

The engagement team visited Arno Atoll in the end of March 2023. The first thing to take place during the community consultations is the introduction meeting where information is provided to the community on the purpose of visit and what the NAP is and how it is going to support the community in the future. This is a vital step in setting the scene for the methodologies to follow. The consultation for the NAP involved six different data collection methods: a baseline survey to capture views on current and future adaptation; a Day in the Life (DIL) activity where participants were asked in groups about their observations of environmental change, social impacts and how they anticipate daily activities to be affected in the future; focus group discussions with community members from 8 different communities; semi-structured interviews with community members from targeted groups; community profiles; and Youth and Arts Engagement. Some individuals participated in more than one methodology.

A total of three (3) Hazard, Vulnerability, and Capacity Mapping (HVCM) exercises were completed in Arno, Ulien, and Lukweij during community engagements in 2017. Those reports were collected prior to the NAP community engagements and are referenced in this report.

Method	Female	Male	Undisclosed	Youth	Middle aged	Elderly	Undisclosed
Baseline survey	8	15		5	18	0	0
Day in Life	8	34	1	5	35	3	0
Focus Group Discussion	17	20		n/a	n/a	n/a	37
Interviews	0	0	16	n/a	n/a	n/a	16
Youth and Arts Engagement	17	9		26	3	0	0
<b>TOTAL</b>	<b>50</b>	<b>78</b>	<b>17</b>	<b>36</b>	<b>53</b>	<b>3</b>	<b>53</b>

Figure 4: Table showing respondents by method

The Arno community has been exposed to droughts in the past, especially during El Niño years in 1996, 2013 and 2016. Droughts result in the loss of crops and health issues associated with limited water; in response to those, food and water are rationed, and IOM has provided a temporary reverse osmosis (RO) unit at Arno village, with other communities in the atoll such as Ulien and Lukwoj having to travel there to get water, a task that is made harder by the lack of vehicles in the Atoll. The people of Arno report a lack of medicines that becomes more acute in times of drought when diseases, especially diarrhea, tend to spread faster.

Typhoons are also periodic hazards. The last typhoon to strike Arno did so in 1986, destroying houses and crops and contaminating water wells, as well as compromising key infrastructure such as the dock.

More recently, sea level rise and the February king tides have become a problem, causing flooding, salt intrusion in aquifers and soils, and erosion.

King Tide Impacts	Capacities
Dock ruined	Rocks and sand
Shore eaten away	Coastal plantation, coconut tree stumps as temporary “wall”
Graves destroyed	Rocks to form barrier
Homes damaged	Can temporarily relocate to school/churches

Typhoon Impacts	Capacities
Homes destroyed	Can shelter in school/churches
Crops/plants damaged	Can preserve food ahead of time [Bwiro (breadfruit), makon (pandanus), taro, etc.], fish
Illnesses/diseases	Doctor/dispensary
Houses ruined	Trees for wood, coconut palms, dried pandanus leaves for roof

Drought Impacts	Capacities
No rain	Wells
Illnesses/diseases	Local medicine
Crops/plants damaged	Imported provisions/preserved foods

Figure 5: Results from Hazard, Vulnerability and Capacity Mapping (HVCM) exercise showing capacities

## GUIDING VALUES FOR ADAPTATION

DIL participants cited “natural resources” as the most important value for them, above family, friends and church. The Baseline Survey mostly confirms this, with 7 respondents also highlighting the importance of having access to natural resources, something that allows for an easy life and guarantees freedom (which was the other most cited value, together with the homeland). It is clear that the people of Arno value above all the independence and freedom that comes from their traditional lands and resources.

This attachment to the land is the reason why the majority of those interviewed in the Baseline Survey are planning to stay in Arno Atoll participants express their will to stay as opposed to only one who manifests an intention to leave. The DIL survey largely confirms this, with N=19 participants showing their intentions to cope and adapt locally and only one thinking of migrating. As a proportion of the population, this sense of belonging and place attachment is the highest in the country, and it provides a clear mandate for assistance to help the people of Arno adapt in place. During the Jo-Jikum Youth Arts and Music consultation, many of the youth arts expressed how lucky they feel to not only be living their lives on the island of Arno, but also showing their gratitude to their culture, and singing about how amazing Arno is because it’s a place full of crabs and other natural resources, indicating that their islands are a gift from those that came before them.

*“The community needs to work together and support each other to prevent the problems from climate change from ever occurring or to reduce the effects.” (Arno Participant)*

## CLIMATE CHANGE EXPERIENCES AND CONCERNS

Sea-level rise is the most observed environmental change in Arno Atoll, as recognized by half of the respondents in the DIL Survey. This is followed by air and ocean temperature rise and a perceived increase in the frequency and intensity of droughts. Although sea-level rise is a constant, slow onset occurrence, it is compounded by frequent king tide episodes, many of which take place during the February high tides. Flooding damages houses and infrastructure, and it also affects on-island mobility, making moving around particularly difficult.

*“Climate change now is unpredictable and becoming more dangerous. There are times where the wind is blowing in a dangerously high speed and sometimes the air temperature increase dramatically. Droughts are lasting longer than usual and sea level rising is a constant threat.” (Arno participant)*

These environmental impacts are concerning for the people of Arno Atoll, who see a crop decline as a result of droughts that makes them more and more reliant on store bought foods which in turn requires more money to maintain their livelihoods. Droughts and sea-level rise also affect some of the plant and tree species that are instrumental for the atoll’s livelihoods, such as copra and pandanus (used for handicrafts), which results in “life getting harder,” as some participants put it. Environmental changes also take a high toll on the health and well-being of the people of Arno Atoll: water and food insecurity are on the rise during droughts, and diseases such as diarrhea increase as a result of a lack of access to clean water.

The Jo-Jikum Youth Arts Engagement also highlighted these facts with paintings depicting the drastic and negative changes occurring in the islands, both on land and in the ocean, due to climate change. Paintings showed how the health of plants is affected, including for use as materials for handicrafts and incomes. Others expressed the loss of land due to erosion and coral bleaching.



Figure 6: Youth with art from the Jo-Jikum Youth Arts Engagement

*"I was born and raised here in Arno. The changes I've seen from the effects of climate change are very disturbing. The pandanus won't even be ripe yet and half of the fruit will fall out. It wouldn't be harvest season yet the color of the fruit changes. The wells don't have that much water anymore. There's a lot of coastal erosion. We wonder why we have to go out so far in the ocean to fish and we hear that it's because the heat is making the fish go into deeper, cooler waters. Before we could just use spears and fishing rods but now, we have to go deep sea diving for a good amount of fish and use scuba gear and tanks." (Arno participant)*

Communities in Arno Atoll also report having to go further to fish due to changes in sea patterns that include increased water temperature and coral dying episodes, which has made reef fishing impossible. Boats are now needed for fishing, and with rising fuel costs fishing has become more costly. All this when the fuel costs up to \$12 a gallon.

Participants think that these impacts will affect the future and make life in Arno Atoll more difficult by impacting crops, infrastructures and livelihoods, and think that sea-level rise in particular poses an existential threat if it continues to erode the land, which makes some participants suggest that some sort of coastal protection might be needed.

### Current observations of climate change in Arno

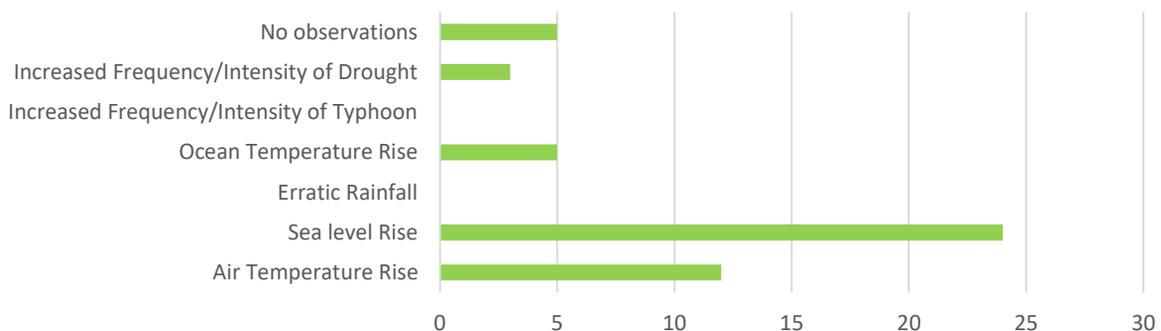


Figure 7: current observations of climate change in Arno Atoll

## OTHER COMMUNITY EXPERIENCES AND CONCERNS

Other community concerns that came up during the focus group discussions and semi-structured interviews included the gender specific issues women face in the community. This include exhaustion form daily chores and family commitments, combined with lack of resources for handicrafts. They face physical and emotional abuse. There are less community gatherings then before, which is leading to social isolation. It was noted that there are not enough spaces for women to get together and collaborate. The effects on daily life due to air temperature rise were noted including weather being too hot during the day for copra harvesting or shell collection for handicraft making, social gathers or exercise through sports must wait until evening from 4pm on for weather to get cooler and lack of lights for events. The daily patterns of life are beginning to change due to climate change.

*"The copra isn't sustaining our livelihoods anymore but that is essential to us to making money. If it's really bad then we would leave it all depends on how worse the situation is." (Arno participant)*

## ADAPTATION PRACTICES AND IDEAS

A majority of the participants of the DIL survey suggest coastal protection as the main adaptation option, although some participants opt for nature-based solutions. Water efficiency and harvesting is also proposed by some of the participants in the survey. Also significant is the number of participants in the targeted semi-structured interviews (almost a third) who suggest elevating homes and the school to avoid the damage caused by flooding. Better sanitation, funding to conduct more replanting and building a safe house for women are also some of the ideas put forward by target participants.

### Adaptation ideas in Arno

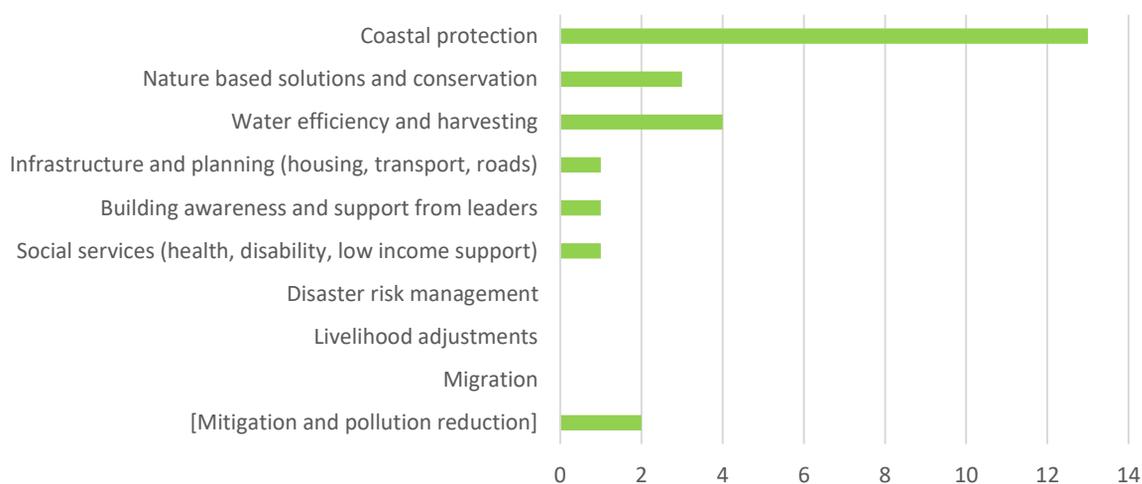


Figure 8: Adaptation ideas in Arno Atoll

*"We want to stay in these communities, we want our lives to be secured and try to be resilient towards climate change. We would have to prepare our community by cleansing our drinking waters and preparing ourselves. I also think that relocating/migrating is a necessary measure." (Arno participant)*

## BARRIERS, OPPORTUNITIES, AND IMPLICATIONS FOR ADAPTATION

There are a number of elements that can impede adaptation, many of which can be addressed. For example, efforts could be made to make sure that medicines are available ahead of droughts and after typhoons and other disasters, and the community can be stocked with tools to help clean up and assist with the rebuilding of houses and other infrastructure affected by king tides. Likewise, lack of transportation within and beyond the atoll is hindering the adaptive capacity of Arno Atoll.

The lack of adequate shelter infrastructure is also a barrier, and if one or several evacuation or shelter facilities were built in Arno Atoll they could also be used to stock up seeds and plants in a safe place to be used for replanting after droughts or typhoons hit the atoll.

King Tide Impacts	Vulnerabilities
Eat away the land	No sea walls/mangroves
Illnesses spread	Not enough medicine
Debris washed up	Not enough materials for cleanup
Houses destroyed	Not enough building materials
Wells become salty	Nothing to clean water/well
Dock destroyed	No other means of transportation to other islands/atolls

Typhoon Impacts	Vulnerabilities
Destroys crops	No seeds for replantation
Houses destroyed	Not enough building materials or funds for rebuilding
Wells become contaminated	Nothing to clean water/well/no clean water containers
Drowning/death	No official evacuation centers
Debris washed up	Materials for clean up
Unclean atmosphere	Medicine

Drought Impacts	Vulnerabilities
Crops/plants	No seeds/fruits for replantation
Water contamination	Nothing to clean water with
Little to no water	Limited transportation to center (Majuro) to buy water/not enough water containers
Crops/plants damaged	No way of replanting with no water/seeds/fruits
Illnesses/diseases spread	Short supply of medicine

Figure 9: Results from HVCM showing vulnerabilities in 2017

There is a strong sense of community in Arno Atoll that brings people together in case of disaster, with people helping each other to overcome challenges, such as providing shelter for those whose homes have been damaged and helping rebuild. For example, communal wells have been built in the past to provide better access to water. Another key barrier to adaptation is community trust in the government. There were reports from council people and community members that there is a disconnect between the local council living in Arno, the Mayor, and the Senator. Some feel that there is an abuse of power within the leadership that could be better focused to help the community thrive and adapt to climate change.

<b>Adaptation activities that could begin immediately (as per community needs and low regrets)</b>
Request for local government to set up an immediate access fund to help repair homes when they are flooded or damaged
Provide RO units for every community, along with training on operations and maintenance.
Provide health workers and medicines in all the health centres of Arno, and especially midwives as boat rides to Majuro can be long and unsafe.
Replace the damaged KIO club water filter buckets, and clean water catchments
Increase the number of water catchments and water tanks across the atoll
Better monitoring for the solar power equipment and more batteries to store more power for long term rain days
Fund community gardens across the atoll and provide ongoing support to maintain them

<b>Adaptation activities that could begin in the next five years (identified by community and requiring further consultation and planning)</b>
Start planning for coastal protection in vulnerable areas (including both sea walls and nature-based solutions)
Build a dock to improve transportation of people and copra in Rearlaplap islet
Provide internet and phone access to other islets beyond Arno community
Fix the airstrip for Rearlaplap communities and Arno, Arno (during emergencies it's so dangerous to come to Majuro by sea, they want safer additional options)

## KEY OBSERVATIONS FROM FIELD ENGAGEMENT TEAM

During a final debrief and workshop session with project team members shared their naturalistic observations that were observed in the field. These are key takeaways from each community and key action points for each community provided by IOM, Jo-Jikum, WUTMI, and MICS.

### Key takeaways

- The community's understanding of how the health conditions of the corals can affect the vulnerability of the land
- The community's expression of gratitude towards their traditional and cultural ways of life
- WUTMI Women's Chapter at Arno have gardens at each Islands asking for contribution from MISC and other NGOs to provide more

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- After many workshops from WUTMI Gender Based Violence (GBV) First Response training. Women on Arno are more knowledgeable when it comes to GBV than other locations.
  - Need for government to promote opportunities for women on Arno Atoll.
  - Arno Atoll women participant mentioning the government to help have funds where they renovate their homes, especially when there's flooding.

### Key Actions

- Request for local government to have funds to help repair homes when they are flooded or damaged.
- Coastal protection, both sea walls and nature-based solutions.
- Rearlaplap communities need dock to improve transportation of people and copra.
- Need internet access in Rearlaplap communities.
- Only one health representative in Rearlaplap, specifically Kilange. This one representative cannot adequately support all the locations.
- Concern about lack of midwives throughout the Atoll. This is particularly important because the boat rides to Majuro can be long and unsafe.
- RO units for every community, along with training on operations and maintenance.
- The KIO club water filter buckets are good but some of them have been damaged, now drinking for water catchment and not sure if clean. So, they are requesting for more buckets.
- More water catchments for everywhere and everyone.
- Better monitoring for the solar power equipment and more batteries to store more power for long term rain days.
- All communities want community gardens, but they don't know where to go to ask for help and they don't trust the local government to organize the support.
- Men's groups looking for funding to implement their goals, there is Kora fund but what fund for men exist.
- Fix the airport and runway for Rearlaplap communities and Arno, Arno. During emergencies it's so dangerous to come to Majuro by sea, they want safer additional options.
- Need HF and VHF radios – in all of Rearlaplap communities and Arno, Arno.

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## Annex

1. Arno, Arno Community Profile
2. Malal, Arno Community Profile
3. Inne, Arno Community Profile
4. Lukwej, Arno Community Profile
5. Japo, Arno Community Profile
6. Kilange, Arno Community Profile
7. Tinak, Arno Community Profile
8. Langar, Arno Community Profile
9. Arno Economic Surbey Results
10. Arno, Anro HVCM
11. Lukwej, Arno HVCM
12. Ulien, Arno HVCM