

AGRICULTURAL ASSESSMENT AILUK ATOLL,
APRIL 2018

A. HISTORY

1. HISTORIC TREND

YEAR/MONTH OF OCCURENCE	EVENT	EFFECT/IMPACT	RESPONSE MEASURE OF COMMUNITY
1982	SEVERE DROUGHT	- Plants and food died out - No water - Algae growth on the corals - Disease among people (pink eye, diarrhoea, headaches)	
1992	TYPHOON	- Homes were destroyed - Crops were destroyed	
2002	TYPHOON	- Homes and food were destroyed - Disease among the people	
2003	CORAL BLEACHING	- Little to no fish - No understanding why it was happening or what it was (at the time)	
2013	DROUGHT	- No water (drinking, making coconut fronds for handicrafts, no money generated) - Food crops destroyed	- Rationing of Water - Boiling of ground water before use - Preserving of breadfruit
2016	DROUGHT	- No water (drinking, making coconut fronds for handicrafts, no money generated) - Food crops destroyed (MORE SEVERE THAN 2013)	- Rationing of Water - Boiling of ground water before use - Preserving of breadfruit
Outside Assistance:	Yes – National & International Government/Communities & NGO's on food ration/baskets, water and RO Unit		

**2. EXPERIENCES OF EXPOSURE TO DROUGHT:
(SENSITIVITY (IMPACT) TO THIS EXPOSURE)**

From the group discussions between men and women mentioned below are a few points they brought up in their separate groups as the hardship they face when they are hit by a drought.

a. WOMEN

- No water or food for children (affected their education)
- No supplies for handicrafts
- Animals were affected (sick and dying)
- Fish were affected as well (dying and washing ashore)
- Well-water become salty
- Food crops were wrinkly, shrinking and dying
- Could not make products to generate money
- Illnesses and diseases (*affected the skin a lot, diarrhoea, mumps, scabies, pink eye*)

b. MEN

- Not enough water so sometimes we don't wash face
- Not enough food
- A lot more work looking for food, however, less work collecting food because not enough good food
- Not enough coconuts to make copra, less money generated
- Go out further to fish because the fish move out farther to open sea
- We don't eat as much and some people get sick
- Coconut sap wasn't producing enough

3. ADAPTIVE CAPACITY – WHAT THEY HAVE TO HELP ADAPT. a.**WOMEN**

- ROC, IOM supported with food, soap, water, hand sanitizer, RO Unit
- Water rations from catchments on ships to people's catchments, however, water tasted like rust
- Drank a lot of coconut
- Ate coconut meat, pandanus, preserved breadfruit, clam meat, dried fish
- Everyone didn't bathe as much as before drought – to save water
- Had to stop making handicrafts
- Disease kept coming and we couldn't do much about it

b. MEN

- Boiled well-water
- Used the RO Unit
- Feed the animals with shark???
- Get out to the small islands to get food
- Food rations from Government and IOM (however, very limited)

B. FOOD SECURITY STATUS**1. AVAILABILITY/ACCESSIBILITY/APPLICABILITY/STABILITY**

1. LOCAL FOOD PRODUCED	AREA/NO		SEASONALITY	FREQUENCY of USE
	Women	Men		
Fish			As in seasonality calendar	Everyday
Coconut Coconut sprouts				Every day
Breadfruit Preserved breadfruit	50	64		Every day in season In off season
Banana	100	184		Every day when available
Pandanus	250	400 ⁺		everyday
Root crops (Gst)	50	50 - 60		When available
Vegetables	2	6		Only when available
Local chicken	250	167		Only on occasions
Local pig	80	143		Only on occasions

2. IMPORTED FOOD	AFFORDABILITY (y/N)	FREQUENCY of USE
Rice	y	2-3 times per day
Flour	y	2 times per day
Ramen	y	1 times per day
Biscuits	y	2 times per day
Q-leg chicken	y	1 times per day
Canned meat	y	3 times per day

1.1 LOCAL & IMPORTED FOOD USED IN DROUGHT

From both men and women, they used or eat fish/dried/salted almost every day during hardship times with coconut, clam meat, kweet, bweero (fermented/preserved breadfruit), coconut sprout and green coconut water and meat. They also use some local chicken and pigs for meat at these times as well.

Imported food usually consists of rice, flour, ramen, biscuit, q-leg chicken and canned meat. These foods are also always the contents of food baskets donated throughout droughts with bottled water. To supplement daily needs they have a local store which they can purchase their daily food needs from.

2. NO. OF HOUSEHOLDS PLANTING:

Almost all households have food crops around their homes and land. Soil with of course water is the most limiting factor for plant growth especially for cultivated crops in the atolls. Only tree crops like breadfruits, coconuts and pandanus with a few bananas are visible around homes and settlements. Every household have access to these tree crops for daily substance.

3. LAND ACCESSIBILITY:

From discussion with Ailuk Atoll Island Councillors and Chiefs they mentioned that there are three levels of land ownership systems they have. First is the chiefly level, and then the "alap" level (clan heads), and the "rijerelk" level (worker or tenders of the land), and all these three levels have some degrees of access to land. This is just to say that all have access to the land with clear defined roles and degrees of ownership.

4. PROXIMITY TO MARKETS/SUPERMARKETS:

Ailuk Atoll has a local store where most imported food items and necessities are available for purchase and is situated to the North of Majuro where the markets and most supermarkets are located. The atoll is an hour's flight from the capital Majuro and have a boat servicing the islands arriving supposedly at every month. This is usually not the case where it has been arriving now at least every 2-3 months.

The Air Marshall flight is once a week every Mondays and is not cheap to pay for air freight of cargoes to and from the island.

5. CLIMATE/SEASONALITY/WATER AVAILABILITY:

5.1 SEASONAL CALENDAR OF CLIMATE EVENT (DROUGHT & RAINFALL)

(From previous events and present conditions)

VARIABLE	J	F	M	A	M	J	J	A	S	O	N	D
Rainfall		Women										
								Men				
Drought							Women					
		Men									Men	
Rain & Dry Season for North Pacific			Wet								Season	
						Dry	Season					

Rainfall

H = > 2 mm

A = 1 mm

L = < 0.2mm

Drought Severity

H – Plants die/no water

A = Plants wilting/water

L = Everything is normal

Women and men assessment of rain and as well as drought occurrences differs considerably and can only tell us that they interpret drought and rainfall periods differently. The northern rainy season is from April to October (summer) and dry season from November to March (winter). Further looking into the differences between men and women interpretation of drought and rainfall times it seems that men has identified the shift in seasonality of occurrences of drought and rainfall during the past incidences in the atoll.

From this seasonality scenario we can also earmark or establish times of planting of crops to coincide with the seasons.

5.2 SEASONAL CHARACTER OF CROPS/LIVESTOCK

(Cropping systems adopted/mostly used)

VARIABLE	J	F	M	A	M	J	J	A	S	O	N	D
Crops Grown								Coconuts				
								Breadfruit				
						Pandanus						
						Banana						
									Taro			
						Vegetables??						
Livestock kept					Free	range	Pigs	(tethered)				
							Free	range	Chicken			

Crops grown:

Breadfruit

Bananas

Pandanus

Giant swamp taro

Vegetables (community nursery – 1 tomato, a few overgrown radishes, 1 eggplant)

From the existing crops' seasonality calendar above and correlating it with seasonality of climatic events as mentioned above planting time of crops can be established to coincide with the right season.

Livestock Type: Pigs & Chicken

Breed: Pigs – Large white + crosses; Chicken – local breed.

5.3 PEST OCCURENCES

VARIABLE	J	F	M	A	M	J	J	A	S	O	N	D
Pest & Diseases			Women									
						Men						

Pest observed: Mealy bugs & Sooty Mould especially on breadfruits.....no idea when it was established on the island..... they said it was long ago.....

Observed that most have died (signs of predation) might have come in with own predator (seen some) **and this has to be confirmed.**

A healthy and environment friendly crop protection regime for the atoll should be looked into to control existing pest and diseases as well as to curb introduction of new pests and diseases.

The idea of organic production systems was also discussed with the community as we would not recommend any use of any chemical for plant growth and pest and disease control. This is solely because of the pollution of and contamination of ground water lenses which the islanders depend on that would be caused by the use of chemicals.

C. RESOURCES STATUS

HUMAN RESOURCE					
Tot Population	Men	Women	Youth	Children	No. of Household
337					67 Household

NATURAL RESOURCES	Land	Forest	Water
Area			Ground & Rain water/RO
Quality	Fair/coralline soil	Fair (coconuts, pandanus, noni and breadfruit)	Fair/brackish in dry spell
Accessibility	Yes - all	Yes - all	Yes - all

PHYSICAL RESOURCES	Accessibility
1. School building	All
2. Church building/hall	All
3. Local government hall/building	All
4. Jetty	All
5. Local government truck	All
6. Dispensary	All
7. Boat & Outboard engine	All – user pay service
8. Airport - runaway	All
9. RO Unit	Local government - All
10. Solar power	All
11. Water Tanks/wells	All

FINANCIAL RESOURCES	Accessibility
1. Sale of Copra	All
2. Handicrafts	All - women
3. Sale of fish	All
4. Local government	Employment
5. Marshall Air	Employment
6. Local island shop/canteen	All

The main source of income is copra and handicrafts. All the islands are almost all covered with coconuts and was really good to see that they are re-planting new coconuts under the older coconut trees. Shipping is irregular which is the only mode of getting their copra sold off to buyers. They have a vast ocean or sea resources and because of irregular shipping services this could not be tapped into for income. Added to this is that they do not have proper fish storage facilities to store fish for longer periods of times unlike copra which has a longer self-life after being dried. If a regular mode of shipping schedule is available and with storage facilities fish or sea resources would provide greater economic benefit to the people which would be a great stability factor as a source of income in providing for food security during hardship times.

In place they have put up six marine protected areas, for marine resource sustainability and stability. Some of these protected areas are opened up during droughts and hardships when there is less fish found on the stretches off the lagoons due to coral bleaching and high sea temperatures. This is to supplement diets and for food security only during these periods.

D. WHAT THEY WANT TO SEE DONE/IMPROVED/EXPECTATIONS

From the consultation and discussions held in Ailuk the following ideas was brought up in the discussions between the Mayor and the Councillors and between the men and women.

- Building of a community nursery (on communal land),
- Techniques for improvement of coralline soils for backyard gardens and existing crops,
- The introduction other drought tolerant crops proven in other atolls,
- Training on home-gardening techniques, composting making and cooking classes,
- Provision for agricultural tools and training on their use and maintenance,
- Community reservoir for drought readiness,
- Improving livestock breed and production (chicken and pigs) for stock build up and resilience as a good source of protein during hardship,
- Food preservation, long term storage facilities and training.

The councillors requested and put up their wishes for two RO systems, one for Ailuk proper and one for Enejelar as it takes an hour by boat to get to Ailuk from Enejelar and 3 hours by their traditional canoe)

From group discussions with and between men and women these were some general issues and things they came up with and need to be in readiness for future hardship/drought:

1. TOOLS/EQUIPMENT

- Bulldozer to dig
- Two RO Unit (one for Enejelar)
- Solar freezers for each household to freeze food for longer use

- Tiller
- Shredder (for composting)
- Gardening tools (shovel, wheelbarrow, gloves, watering cans, gardening hose, hose head, buckets, sand separator,)

2. CROPS/LIVESTOCK

- Seedlings (breadfruit, coconuts, pandanus, banana, taro, pumpkin, sweet potato, etc.)
- Feed and medicine for animals

3. BUILDINGS

- Nursery
- Chicken coop
- Pig pens

4. AND TRAINING

- Training on how to use bulldozer, saw mill, RO Unit, solar freezer, tiller, gardening tools, shredder, composting techniques
- Cooking classes for new crops planted

E. CONCLUSION

From the RENI project consultation in Ailuk we can say that we have established with them their own exposure to climate change, their sensitivity or the impact of this exposure to their lives and livelihood, and their adaptive capacity to go through this hardship or what measures they took to help them adapt to the situation.

However, they still need assistance in these times especially with clean water and food as they become scarce. From the consultation with them we can also say that we have identified some areas where we can improve on to build up their adaptive capacity in future climatic hardship scenarios.