



## 1. SEA CUCUMBER ACTIVITIES

### 1.1 MONITORING & FARM ACTIVITY

Collaborating with Vast Ocean on monitoring farms and trials is ongoing. Team continuously monitors Talafo'ou sea cucumber farm by measuring weight & length for growth rate. Aquaculture team in Vava'u continues to monitor and record growth rate sea cucumber farm at Makave SMA.

The aquaculture team also prepared raceway tanks at the Sopa mariculture for transferring of sea cucumber juvenile from VO facility. Details below show the numbers of juveniles in each raceway tanks that was transferred. Continuous monitoring of the juveniles is carried out by the team. Monitoring involves measuring length & weight for growth rate fortnightly and feeding twice a week. The juveniles are intended to be distributed to the SMA communities for their farms

Date	Tank No.	Number of Juveniles	Av. Weight	Av. Length	Total transfer
16.02.2023	C12	1168	3.17	3.545	7579
	C16	1054	1.505	2.735	
	C14	996	1.22	2.17	
	C3	1058	1.19	2.015	
	C10	1082	1.2	2.275	
	C8	1005	2.465	2.755	
	C20	1216	1.4	2.835	
24.02.2023	B6	1103	0.47	1.58	21545
	B4	1131	1.678	0.159	
	A7	1117	0.885	1.685	
	B8	1430	0.41	1.285	
	C9	1135	1.16	1.41	
	C5	1234	0.925	1.92	
	C1	1112	0.655	1.565	
	C7	1153	1.795	0.89	
	A6	1019	0.635	1.61	
TOTAL JUVENILE		18013	1.30	1.90	29124

### 1.2 SPAWNING & MONITORING

The aquaculture team also assisted VO with spawning activities for sea cucumber at the VO facilities. Successful spawning of sea cucumbers with approx. 100 million fertilized eggs were transferred to larval tank with a close monitor. Sea

cucumber larvae were also transferred from VO to Sopa mariculture for closely monitoring. Approx. 15 million larvae were transferred and reared in 4 raceway tanks. Close monitoring involves feeding twice a day, water exchange on tanks every day and checking for aeration and water flow in order for the larvae to stay alive. After few weeks from transfer, settlement plates were then placed inside the tanks with larvae for them to settle onto them.

## 2. PEARL FARM ACTIVITIES

### 2.1 SPAWNING & NEW LINES

The aquaculture team continues to prepare the hatchery and broodstocks for another spawn run. A sign of spawning showed only on one 1 oyster (male) during day 1 of spawning but failed to show on any female oyster. After many attempts, no more signs of spawning were noticed. Due to various reasons such as; gonads were not developed and the weather conditions changing often (rainfall occurring frequently) the team is to continue to attempt until May and also spawning season: Oct – March

Vava'u managed to deploy e new pearl line for the Vava'u High Ex-students class of 1988 registered under the name Niponi 1988.

### 2.2 MONITORING & MAINTENANCE

Continuous monitoring of the Ministry Pearl lines is carried out by the team for both Vava'u & Tongatapu as well as stock taking to monitor the availability of spats. With the increasing numbers of Licensed farmers, number of spats available is vital to make sure it is enough to continuously supply for the farmers. Details below for stock take activities:

Oyster Stock (TBU)	
Available broodstock	50 + 30 broodstock transfer from Vava'u
Spat	1,629





## 2.2 SPAT COLLECTOR

Collecting of pearl oysters from the wild is another way for farmers to obtain spats. Due to the increasing number of farmers, deployment of spat collector by the Ministry in Vava'u & Ha'apai to assist supplying of spats. Spat collector seem to thrive in Vava'u with great results. Management & monitoring of the spat collector is carried out by the Vava'u aquaculture team accordingly. According to first monitoring @ the 'Utulei spat collector line, the team managed to identify spats on the line that was deployed last September with a size range of 3 – 4cm. However, a total of 319 oyster spats were harvested in Vava'u, with medium size transferred to panel net. The general intention of harvesting spat collectors is to distribute them to the Pearl farmers which will be carefully planned by the team depending on the number of spats against the number of farmers.

## 3. GIANT CLAM ACTIVITIES

### 3.1 GIANT CLAM SPAWNING

The team managed to collect broodstock from Fangatapu SMA to prepare for spawning. On the 17<sup>th</sup> March, spawn inducing using thermal shock method started. *T. maxima* successfully spawned after hours of repeating the method. Cleaning of eggs was immediately done before transferring them to bucket & bin for fertilization. Fertilization process was left for 2 hours max to occur with close monitoring for the development of eggs. Results showed high rate of fertilization with approx. 18 million fertilized eggs.

When fertilized eggs reach trochophore stage, they are then transferred from buckets to larval tanks inside the hatchery. The trochophore larvae are kept inside the tanks until they develop and reach D-veliger stage then they are ready to transferred outside to the raceway tanks. They are immediately fed with zooxanthellae first before usual feed during monitor using yeast and 12AB antibiotic. Monitoring & recording is done continuously.

## 3.2 MONITORING GIANT CLAM

Monitoring of hatchery larvae is on-going at the larval tanks grow-out. Monitoring of giant clam broodstock at the Fangatapu SMA is also ongoing carried out by the team. Close monitoring of the larvae at raceway tanks involves: feeding twice a day and water exchange on tanks. Approx. 10 – 15 million were transferred to raceway tanks. Monitoring of giant clam broodstock at Fangatapu SMA and in Vava'u is also ongoing by the team.

Monitoring of Vava'u giant clam farms is ongoing by the Aquaculture team with records of juveniles that are still thriving at the farms. Information below on giant clam farms in Vava'u;

SMA Community	Clam species	Total
Ovaka	Squamosa/Derasa	15
Otea	Squamosa/Derasa	10
Matamaka	Squamosa/Derasa	10
Falevai	Squamosa/Derasa	21
Taunga	Squamosa/Derasa	20
Eueiki	Squamosa/Derasa	15
Utulei	Maxima/Derasa	196

## 4. POND & CAGE CULTURE ACTIVITIES

### 4.1 FIN-FISH (MULLET & TILAPIA)

Daily monitoring and feeding of the fish farm as well as measuring water quality at the pond is ongoing carried out by the team. The team also managed to continue collecting mullet fingerlings and stock into cages (pen cage #1)

Number of fingerlings: 119

Avg weight: 48g

Avg length: 14cm

The team also

The team also had a capacity building practical training on how to proper sew fishing net to be used for collecting fish fingerlings. The team was taught by Sione Mailau from the Coastal Section under the Ministry.

Clearance of the shrimp pond was carried out to use the area for another pen cage to stock fingerlings after collection.







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## Sea cucumber Activities



Monitoring @ Talafo'ou



Monitoring @ Makave



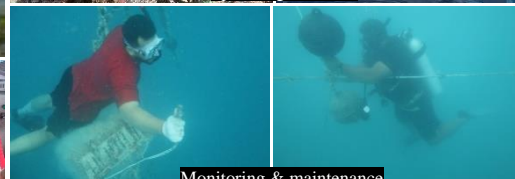
Spawning @ VO



## Pearl Activities



Spawning activities



Monitoring & maintenance



Pearl line deployment @ Vava'u



Spat collectors harvest and management in Vava'u @ collector line

## Giant clam Activities



Spawning activities



Monitoring activities



## Pond & Cage culture activities



Sowing fishing net activities



Clearance of pond and collecting of mullet fingerlings

