Coastal Fisheries Creel Report Card
13th March 2020
VAITUPU

Introduction

This Coastal Fisheries Creel Report Card summarises the results of monitoring key indicators during creel surveys being carried out by Tuvalu Fisheries Department and which are on-going throughout Tuvalu (all islands except Niulakita).

The key indicators we are using to show the health of the resources are:

Indicator 1: Percentage of fishes that are landed which are smaller than the size at which at least 50% of the fish can breed (called length at maturity, Lm). This value should decline and approach zero as management actions improve, followed by improvements in the resources (Indicator 2).

Indicator 2: Catch of fishes per unit of effort (CPUE). For now we are using the number and weight (kg) of fishes being landed: (a) per fisher per hour spent fishing and (b) per fishing trip. The values for Indicator 2 should increase as things improve. That is, fishers should be able to catch more fish in less time. At a later date we will also present this as catch per dollar cost of fishing.

Results

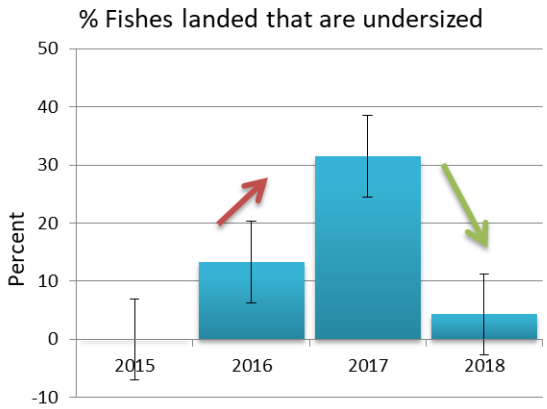
Overall status of the coastal resources is difficult to assess for Vaitupu because data collections have been incomplete.

Only 2 samples were collected in 2015, 53 in 2016 and zero in 2019 as part of the creel survey. The results that follow are based on these limited data.

The state of Vaitupu's coastal fisheries appears to be poor, with an average of 32% of the fishes caught being undersized. The ideal % of fishes being landed that are undersized is 0, so any actions that will reduce this to lower levels is a step in the right direction and is expected to lead to improvements in the resources. This includes better reproduction, better productivity and more fish.

IDEAL: % UNDERSIZED should DECLINE over time and approach 0%

Figure 1: Overall percentage of fishes being landed undersized by year +/-SE.



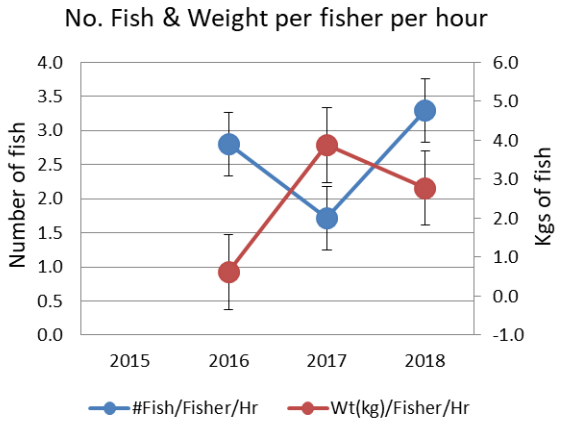
Overall in Vaitupu there was an increase in the percentage of undersized fish

between 2016 and 2017, and an improvement between 2017 and 2018. The shortage of data for this island makes it difficult to identify any real trends in Indicator 1 (see Figure 1 and Table 1).

Every fish should have the chance to breed at least once to ensure the resources can be replenished.

For Indicator 2a the number of fish being landed per fisher per hour spent fishing (regardless of size of each fish) appears to have slightly increased between 2016 and 2018. The total weight of fishes decreased in 2017, but was back up to 2016 levels in 2018 (Figure 2).

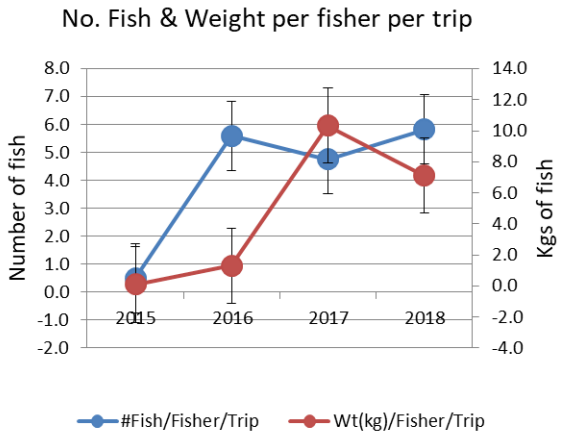
Figure 2: Indicator 2a. Number and Weight (in kg) +/-SE of fishes landed per fishermen per hour spent fishing across Tuvalu 2015-2019.



The number and weight of fishes landed per fisher per entire fishing trip as Indicator 2b (i.e. not per hour) showed an increase over the survey years (Figure 3). This shows that the returns per fishing trip may have improved over that period.

However it may be that fishing trips have become longer, which would give the same result. This needs to be investigated further.

Figure 3: Indicator 2b. Number and Weight (in kg) +/-SE of fishes landed per fishermen per fishing trip across Tuvalu 2015-2019.



Catch per unit of effort (CPUE) should increase over time in a well-managed fishery.

Conclusions

Overall there has been little improvement in the health of the coastal fisheries over the past 5 years since surveys were begun. Some improvements in sizes of fishes being landed took place in 2018 but data from Vaitupu are limited.

Management plans need to be improved and/or implemented more strongly to improve the health of Vaitupu's coastal fisheries.

This table (part of Indicator 1) shows the breakdown of species that have 50% or more fishes landed that are undersized, those that are OK because more than 50% are larger than the known size at maturity and blank cells show those with no catches recorded for that species in that year. This table shows that many of the species being monitored are being caught undersized, and that this varied by year in some cases.

Table 1: List of species for which size at maturity (Lm) is known, showing percentages landed which are undersized.

Row Labels	2015	2016	2017	2018
Afulu Parupeneus multifasciatuss			0	
Aseu Caranx melampygus			40	
Filoa Lethrinus elongatus			0	
Gatala (one dot) Epinephelus polyphekadion			0	
Gatala Epinephelus fasciatus			0	
Gatala lautalo, Gatala lautala Anyperodon leuc			100	
Gatalaliki Epinephelus merra			18	
Kaivete piniki Parupeneus cyclostomus			78	
Kalo Mulloidichthys vanicolensis			0	
Kami, Kamai Elagatis bipinnulata			67	
Kanase Crenimugil crenilabis	0		36	0
Loi Cephalopholis argus			0	
Malau Myripristis berndti			50	
Malau puku Myripristis pralinia?			0	
Malili, Kaivete Parupeneus barberinus			0	
Manini, Koinava Acanthurus triostegus		0	0	0
Mataele Cephalopholis urodeta			60	
Muu, Mufala Monotaxis grandoculis			100	
Nanue (Ff, Nm) Kyphosus vaigiensis			96	
Noto Lethrinus miniatus			100	
Pokapoka lanulanu Naso vlamingii			100	
Ponelolo, Alogo, Pone hamoa Acanthurus lineatu		0	24	70
Tagau Lutjanus argentimaculatus		100	100	
Tagau,Takape Lutjanus fulvus			99	
Taiva Lutjanus monostigma		100	96	
Teu Caranx sexfasciatus		100	85	
Tino ulua (lge), Lupo (small), Aseu (med); Mea tal			67	
Tonu Plectropomus leopardus			0	
Tonu gatala Plectropomus areolatus			89	
Valu Gymnosarda unicolor			100	