

FRAME SURVEY in Artisanal tuna fishery data collection

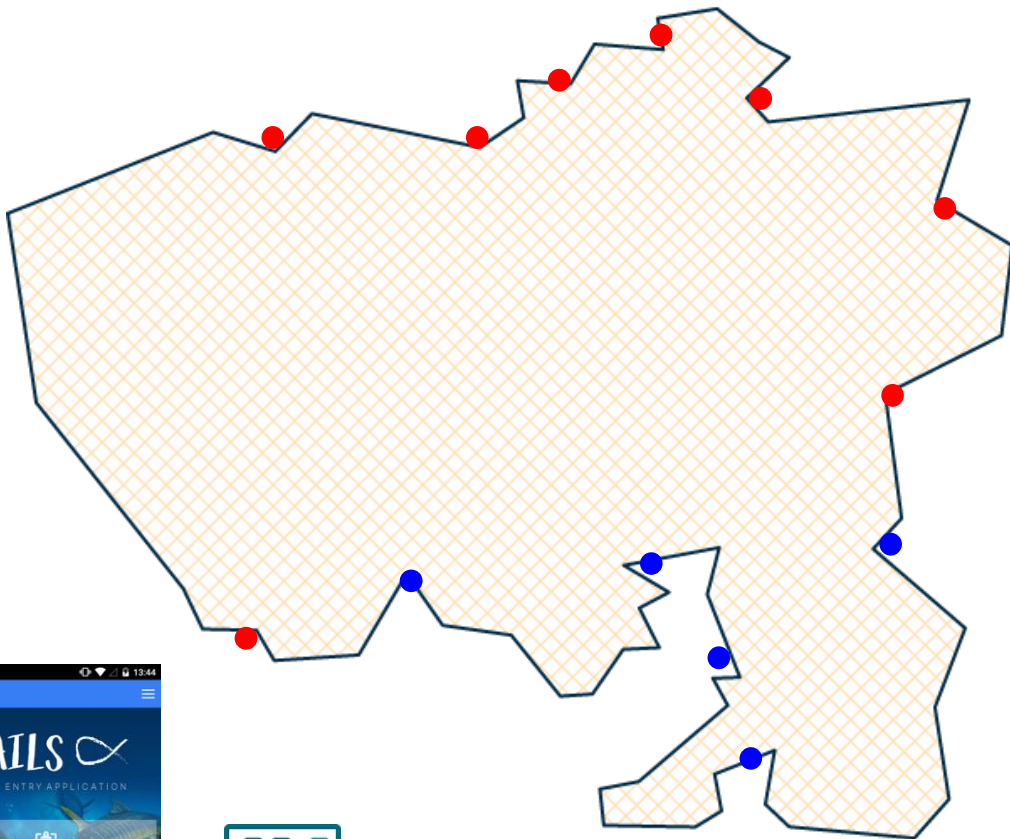
Update on a new type of data collection aimed at improving catch estimates in artisanal tuna fisheries

Presentation outline

- Artisanal tuna fisheries catch estimates – what is the problem ?
- Potential solution - the FRAME SURVEY
- How might the FRAME SURVEY work ?
- How would the FRAME SURVEY improve estimates ?
- Next steps ...



What is the problem ?

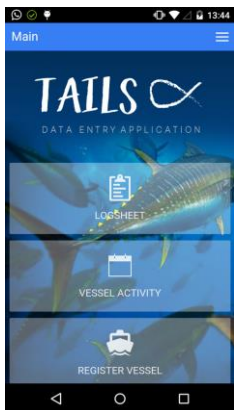


Hypothetical artisanal tuna fishery

- 5 landing sites covered/monitored by Artisanal data collection using TAILS
- 8 landing sites not covered by data collection ...

How can we estimate the catches for the landing sites not monitored ?

(This is not a problem where ALL landing sites are monitored)

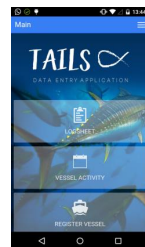
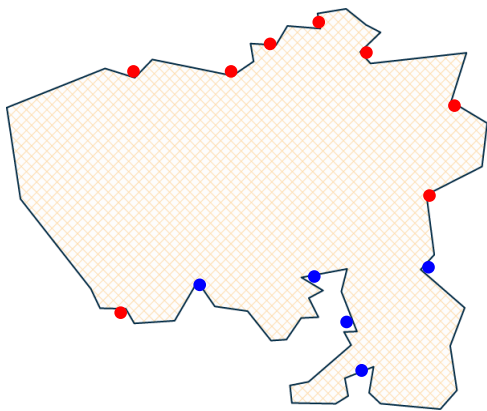


What is the problem ?

Landing site	CATCH (MT) from TAILS data collection			CATCH Estimate (MT) after applying ACTIVITY LOG Data		
	SKJ	YFT	BET	SKJ	YFT	BET
Site #1	12.3	4.1	0.0	20.5	6.8	0.0
Site #2	8.5	5.3	0.0	10.6	6.6	0.0
Site #3	6.2	7.2	0.0	12.4	14.4	0.0
Site #4	1.2	0.8	0.0	2.0	1.3	0.0
Site #5	3.1	0.5	0.0	3.4	0.6	0.0
Site #6	?	?	?	?	?	?
Site #7	?	?	?	?	?	?
Site #8	?	?	?	?	?	?
Site #9	?	?	?	?	?	?
Site #10	?	?	?	?	?	?
Site #11	?	?	?	?	?	?
Site #12	?	?	?	?	?	?
Site #13	?	?	?	?	?	?

Hypothetical artisanal tuna fishery

- Estimates can be determined for 5 landing sites, but not the other 8 landing sites ?
- (how many landings sites are not monitored in your country ?)
- Extrapolating catch estimates from 5 to 13 landing sites, based on ASSUMPTIONS would result in UNCERTAINTY in estimates...



Potential solution - the FRAME SURVEY



A **Frame Survey** is a census-based approach in which data is collected on all fishing vessels and gear (at all homeports/fishing sites), which could be potentially operating within the estimation context or stratum...

Frame Surveys provide the opportunity for recording supplementary information... such as fishing trip patterns and seasonal use of fishing gear...

Frame Surveys need to be undertaken, at a minimum, once per year (...but it will be resource-heavy for the concentrated effort)

Frame Surveys need a 'key informant' for each landing site who will hopefully provide representative, general information on landing site activity

How might the FRAME SURVEY work ?

SPC/ FFA REGIONAL STANDARD ARTISANAL LINE FISHERY		FORM ART-x		
FRAME SURVEY FORM				
<small>INTERIM NOV. 2023</small>				
Landing Site :		For Calendar Year :		
General Area :				
Recorder :				
Key Informant(s) :				
Date of Survey :				
Fishing Method :				
Target Fishery :				
	Total number of VESSELS			
	JAN - MAR	APR - MAY	JUN-AUG	OCT-DEC
Number of distinct vessels by Season				
	Number of VESSELS by frequency of activity			
	JAN - MAR	APR - MAY	JUN-AUG	OCT-DEC
Estimated average Frequency of activity				
No activity this season				
1 trip per MONTH				
1 trip per WEEK				
2-3 trips per WEEK				
> 3 trips per WEEK				

SPC has developed a draft Frame Survey Form and instructions, ready to be trialled... an E-Form or App will be developed later ...

Initial trial will concentrate on artisanal tuna landings only...

PREPARATION : Compile a list of ALL landing sites for artisanal tuna landings basis for conducting the Frame Survey (includes sites not monitored)

FRAME SURVEY aims to cover ALL landing sites, including those currently monitored... *(do you know ALL landing sites in your country ?)*

FRAME SURVEY conducted once per year (minimum)

Subsequent years surveys capture changes, refinement, differences between Frame Survey and landings data, etc.

[FRAME Survey data integrated with TAILS and IKASAVEA data, where relevant...]



Fishing Methods
Drop-stone fishing
Handlining (mid-water)
Longlining
Pole and line
Rod and reel (casting)
Rod and reel (jigging)
Rod with no reel
Trolling

Target Fishery

Tuna

(at this stage)

How catch can be estimated from the FRAME SURVEY



Pacific
Community
Communauté
du Pacifique

Example of Frame Survey Data from one Landing Site which is not monitored by TAILs data collection

Fishing Method :	<i>TROLLING</i>			
Estimated average Frequency of activity	Number of VESSELS by frequency of activity			
	JAN - MAR	APR - MAY	JUN-AUG	OCT-DEC
No activity this season				
1 trip per MONTH	<i>2</i>	<i>0</i>	<i>2</i>	<i>2</i>
1 trip per WEEK	<i>4</i>	<i>6</i>	<i>2</i>	<i>5</i>
2-3 trips per WEEK	<i>2</i>	<i>3</i>	<i>0</i>	<i>3</i>
> 3 trips per WEEK	<i>1</i>	<i>3</i>	<i>0</i>	<i>1</i>

How catch can be estimated from the FRAME SURVEY

Example of Frame Survey Data from one Landing Site which is not monitored by TAILs data collection

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Total estimated vessel days by quarter	<i>132</i>	<i>258</i>	<i>20</i>	<i>163</i>						

How catch can be estimated from the FRAME SURVEY

Example of Frame Survey Data from one Landing Site which is not monitored by TAILs data collection

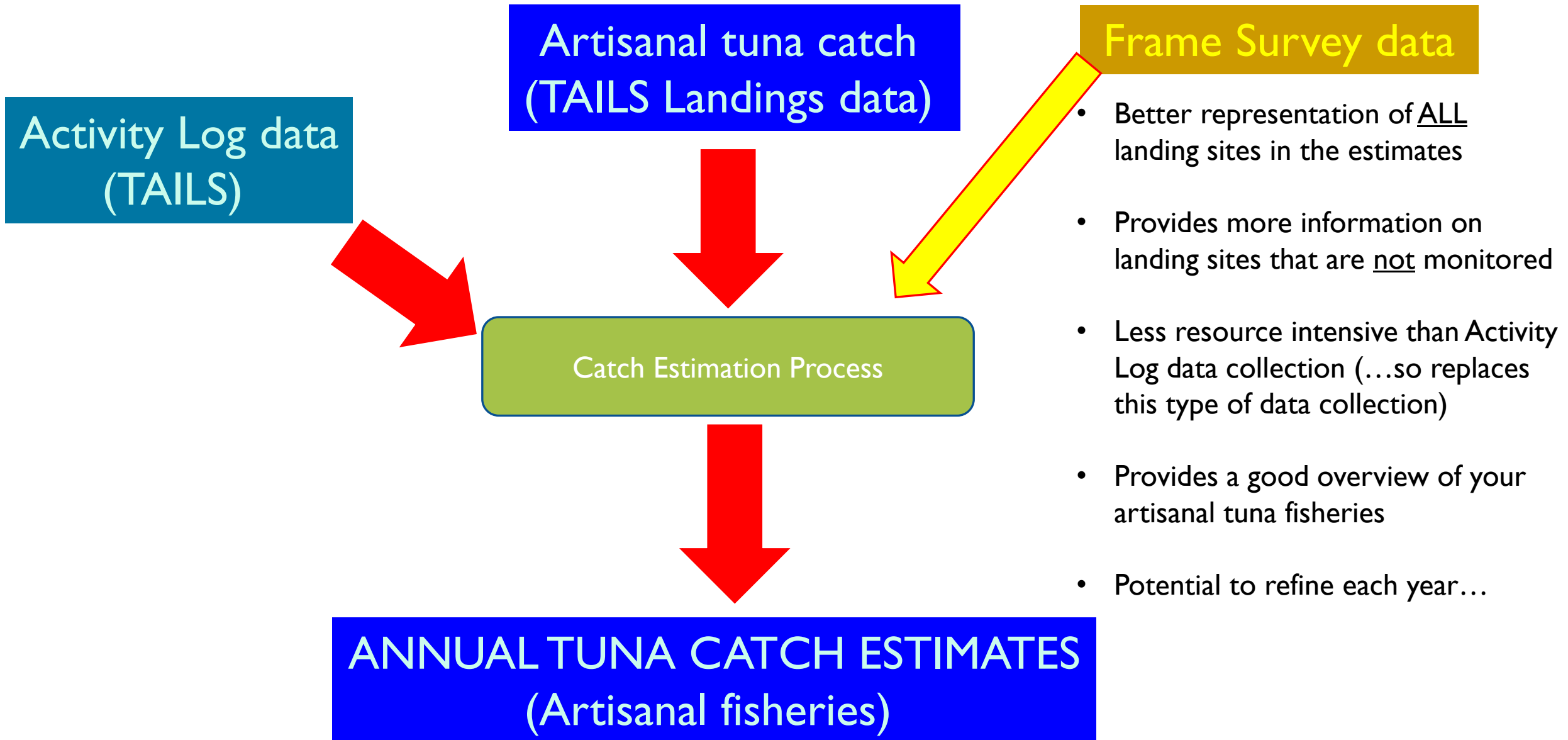
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Total estimated vessel days by quarter	<i>132</i>	<i>258</i>	<i>20</i>	<i>163</i>
ESTIMATED TUNA CPUE (Kgs / Vessel day)	<i>10.0</i>	<i>12.3</i>	<i>4.3</i>	<i>15.8</i>
ESTIMATED TUNA Catch (kgs)	<i>1,320</i>	<i>3,173</i>	<i>86</i>	<i>2,575</i>

Average VESSEL DAYS per QUARTER	
3	<i>1 trip per month equates to approximately 3 vessel days per QUARTER</i>
12	<i>1 trip per week equates to approximately 12 vessel days per QUARTER</i>
30	<i>2-3 trips per week equates to approximately 30 vessel days per QUARTER</i>
50	<i>> 3 trips per week equates to approximately 50 vessel days per QUARTER</i>

Determined from Landings data from monitoring sites for this FISHING METHOD	
7,155	Total annual catch estimate (kgs)

During the trial period, these calculations will be done manually with SPC, but will be automated in the database system, once the trial period has been completed.

How would the FRAME SURVEY improve estimates ?



Next steps ...

- SPC seeks advice from countries interested in trialling the FRAME SURVEY (with SPC's help)
- SPC will provide advice to interested countries, including...
 - Instructions/protocols for this new type of data collection;
 - Advice on resource requirements;
 - Structuring the 'frame' of their artisanal tuna fisheries;
 - How to use these data to generate better catch estimates
- If there is interest, SPC will consider supporting FRAME SURVEY data collection in TAILS or IKASAVEA...



... noting that there is no obligation for countries to undertake this type of data collection



Future Frame Survey data management ...

IKASAVEA already has a form similar to the Frame Survey concept, which may be adapted and used for the Frame Survey data collection in the future...

Data for this fisher and fishery

Survey * Gulf Province Landing Survey

Fisher * Paina Erarape Interview date * 2023-07-24 Surveyor * Rollo Masi

Fishery * Semi-pelagic, pelagic fishes

For that specific fishery

Fishing methods : Casting nets

Gillnetting	<input type="checkbox"/>
Handlining	<input type="checkbox"/>

Reason fishing * For income For subsistence

Number of trips * 2 Per week

Number of fishing months * 12

Months not fished : January

Reason not fished : Efficiency

Weight kept for home : 5 kg

Engaged in that fishery since : 4 Years

Fish in the same areas as before ? Tick if yes If not why ? Personal reason



Ikasavea Fishing Habits Form

Thank You

An update from Tonga (Lavinia) on starting the trial ...

Any questions?

QUESTIONS for you ...

Are you interested to trial the FRAME SURVEY ? (with SPC's help)

Do you know ALL landing sites in your country (i.e. including those not monitored) ?

Can you characterise each landing site as having oceanic tuna landings (Y) or not (N) ?

Would you like SPC to explain the estimation process further ?

