

Croatia – Pilot Study 1

Assessing the Quality of Recreational Fishing Data

Quality Assurance Toolkit – QAT

Condensed set of guiding questions

The following scorecard questions were developed to guide the evaluation process with the main aims to capture survey improvements and highlight key issues in national surveys. The magnitude of bias depends on the national characteristics of the marine recreational fishery.

DESIGN			
	QUESTION	ANSWER	COMMENTS (INCLUDING MAGNITUDE AND DIRECTION OF BIAS)
Target population	Are all sectors contribution to the total catch, harvest or release well-known and documented?	Yes / No / Unknown	General scarcity of data on recreational fishery
	Is there illegal/tourist fishery, which is not accounted for?	Yes / No / Unknown	Tourist engagement is probably significant, but unknown as well as illegal fishery
	Are there elements of the target population that are not accessible?	Yes / No / Unknown	The survey included only internet users leaving a large part of population accounted for
Target frame	Is the PSU identified and documented?	Yes / No / Unknown	PSU-s are not documented
	Does the sampling frame fully cover the target population?	Yes / No / Unknown	Only a biased (internet users) fraction of population is targeted
	Are there elements of the target population that are excluded from the frame (e.g. non-residents, private access sites)?	Yes / No / Unknown	Non-residents and older population were probably not engaged in the study
Stratification	Are the strata well defined, known in advance and stable?	Yes / No / Unknown	Strata were not sufficiently known in advance
	Is there an overstratification leading to excessive imputation?	Yes / No / Unknown	Stratified sampling was not implemented
Selection	Is sampling probability based (e.g. stratified random with spatial strata, PPS)?	Yes / No / Unknown	The sampling was non-probabilistic
IMPLEMENTATION			
	QUESTION	ANSWER	COMMENTS (INCLUDING MAGNITUDE AND DIRECTION OF BIAS)
Selection	Has the survey been designed to maximize precision?	Yes / No / Unknown	The survey was designed to provide preliminary overview of some aspects of recreative fishery
	Are there protocols in place and have they been followed for subsamples (selection of individuals, times, boats, biological samples)?	Yes / No / Unknown	No. The survey was disseminated through online platforms and was not aimed at specific selection of subgroups
	Are the right sites, times, respondents, biological data sampled?	Yes / No / Unknown	No.
	Is there a language barrier (tourist fishery)?	Yes / No / Unknown	Probably yes, but unknown.
	Is there a preference not to engage with illegal fishers (e.g. threatening behavior)?	Yes / No / Unknown	State of illegal fishery is unknown.
	Has the assignment been completed?	Yes / No / Unknown	The pilot study has been completed.
Nonresponse	Are response rates recorded and evaluated?	Yes / No / Unknown	These are not accounted for in online survey

	Are refusal rates (e.g. according to spatial issues, fishing in MPAs or fishing for high value species) recorded and evaluated?	Yes / No / Unknown	Refusal rates are not known and not accounted for.
	Have you re-evaluated refusals?	Yes / No / Unknown	See previous.
	Have you accounted for not completed assignments (unobserved sample bias)?	Yes / No / Unknown	Incomplete assignments are also not recorded.
Recall	Is the recall period appropriate?	Yes / No / Unknown	Recall period was one year.
	Does recall period match fishing season?	Yes / No / Unknown	Fishing activity is carried out throughout the year.
Effort	Is effort well defined (unit, fishing mode, target species, location) and related to CPUE measures?	Yes / No / Unknown	Unit of effort is not precise. Only days engaged in fishery are available and use of certain gears per day.
	Is the concept of effort understood by respondents?	Yes / No / Unknown	
	Is it possible to record incorrect fishing areas?	Yes / No / Unknown	Fishing areas cannot precisely be connected with species considered in the study.
Catch	Is catch verified by surveyors (e.g. all filleted, don't show)?	Yes / No / Unknown	No, it was a recall survey.
	Is species identification and naming reliable?	Yes / No / Unknown	Species in the survey were illustrated but it is not known if they were misidentified.
	Is there a clear division between fish kept and fish released?	Yes / No / Unknown	Only in case of benthic sharks this was asked in recall survey.
	Are there any high-valued/threatened species taken in the fishery that might be unreported?	Yes / No / Unknown	Possibly yes.
	Is there a digit preference in the reports?	Yes / No / Unknown	Possibly the numbers were rounded.
ANALYSIS			
QUESTION		ANSWER	COMMENTS (INCLUDING MAGNITUDE AND DIRECTION OF BIAS)
General	Does the estimation procedure follow the survey design?	Yes / No / Unknown	Data collected through online survey do not allow for any reliable estimates due to unknown bias
	Has imputation been used to account for missing observations and, if so, is the procedure documented?	Yes / No / Unknown	See previous
	Has the precision of estimates been calculated and, if yes, where are the documented?	Yes / No / Unknown	See previous
	Has there been weighting to correct for nonresponses/avidity bias	Yes / No / Unknown	Nonresponses are not recorded and avidity bias is unknown
	In panel surveys, have those selected changed their fishing pattern or activity?	Yes / No / Unknown	It is not known
	Is the bias caused by drop-outs and drop-ins in a panel corrected for?	Yes / No / Unknown	Unknown bias, no correction
WGRFS ASSESSMENT OF SURVEY			
WGRFS summary assessment of key bias and how the survey design could be improved to account for these biases in future. This will form the basis of any advice that is provided to end users on the quality of the estimates produced.			