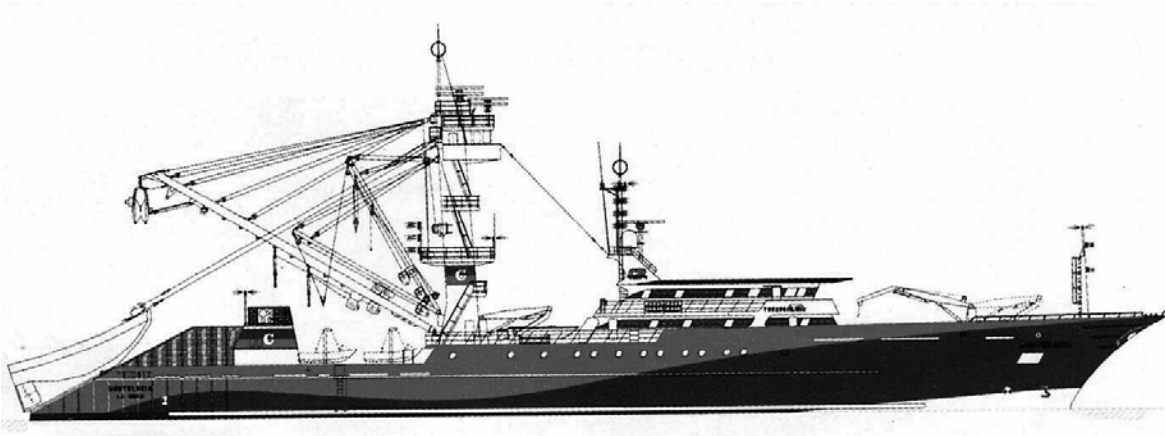




SCTB15 Working Paper

FTWG-9

Vessel and gear attributes in the Forum Fisheries Agency Regional Register of Vessels: How much is enough ?



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INTRODUCTION

The Regional Register of Fishing Vessels is maintained by the Forum Fisheries Agency (FFA) to keep track of DWFN fishing vessels harvesting tuna, billfish and other pelagic species within the FFA region. The significance of this list is such that to be dropped from this list means the loss of regional markets and the ability to effectively operate in the fishery. Data forms are submitted and updated annually to the FFA that includes a considerable amount of technical data on gear and vessel attributes.

The type and amount of technical data collected by the Regional Register has been a subject of debate for some time. Generally speaking, scientists, fishery managers, enforcement agencies and politicians desire different types of information at various levels of precision.

During SCTB 14, a paper examining the data quality of gear and vessel attributes in the FFA Regional Register was presented in the Fishing Technology Working Group (FTWG) session (Millar, 2001). The report evaluated a number of data fields in the Regional Register to evaluate their utility for analysis. A number of problems were revealed in the report, which included: duplication of same vessel entries, inconsistencies in spelling of the same items, a mixing of units with a high percentage of missing data.

The more basic question put before SCTB 14 had to do with a determination of which gear and vessel attributes should be collected in conjunction with registration and annual renewals of the Regional Register. In addition, better management of this data with the rehabilitation of historical data was strongly recommended.

Further discussion resulted in the drafting a specific FTWG task for presentation and review at SCTB 15. Item 6 of the FTWG Task List as it appears in Report of the Fourteenth Meeting of the Standing Committee on Tuna and Billfish reads:

6. *Evaluate data needs of the Regional Register on vessel and gear attributes, with the objective of identifying data considered “essential” and/or “desirable”. Request the SWG and OFP to encourage the provision of these data from flag states not required to report on the Regional Register (OFP, FFA).*

METHODOLOGY

Technical gear and vessel data is currently collected in the following categories:

- VESSEL TYPE
- GENERAL CHARACTERISTICS
- STORAGE METHODS
- CHANGES TO VESSEL DURING LAST TWELVE MONTHS
- GEAR ATTRIBUTES
- AUXILLIARY VESSELS
- LONGLINERS
- POLE AND LINE VESSELS
- PURSE SEINERS
- TROLLERS
- OTHERS
- CREW ATTRIBUTES

A survey was distributed via email to the SCTB list serve requesting input on the need to collect gear and vessel data as is required by the FFA. This survey was based on the exact data fields for gear and vessel attributes required on the Regional Register form, and is attached as Appendix I. In addition, respondents were asked to provide comments on any section or on the general question of data collection by the Regional Register.

Respondents were instructed to designate each data entry field as to whether they felt the collection of this data on the Regional Register was: “essential”; “desirable”; or “not useful”. These terms were discussed and agreed upon during SCTB 14.

RESULTS

Response to surveys was less than overwhelming but completed surveys were of apparent high quality. Eleven responses were received and are reported here. Despite the low number of responses, a number of the surveys were returned with insightful and potentially useful comments and suggestions.

In ranking the responses, a simple numeric coding was used, assigning a values as follows: *essential* = 9.09; *desirable* = 5; *not useful* =1, for a total possible points of 100. In general, high rankings were noted for information on: vessel type; “other” vessel types not listed; catch storage method; drifting FADs; high tech electronics; remote sensing related fields and bycatch mitigation devices. Appendix II lists all categories ranked in descending order from scores of 100 to a low of 44.

Data field items receiving high scores above 90 are listed in Table 1.

Table 1. High scoring gear and vessel attribute fields.

Data field	Essential	Desirable	Not Useful	Overall rank
Longliner	100	0	0	100
Pole and line vessel	100	0	0	100
Purse seiner, single	100	0	0	100
Total storage capacity (cubic metres)	100	0	0	100
Mainline material	100	0	0	100
Line shooter present?	100	0	0	100
Net length (metres)	100	0	0	100
Net depth (metres)	100	0	0	100
Number of lines used	100	0	0	100
Type of gear used	100	0	0	100
Length of net	100	0	0	100
Number of hooks used	100	0	0	100
Length overall (metres)	91	5	0	96
Satellite sea surface images used?	91	5	0	96
Drifting satellite buoys	91	5	0	96
Remote echo sounding buoys	91	5	0	96
Tori poles used? (yes/no)	91	5	0	96
Bait throwers used? (yes/no)	91	5	0	96
Helicopter?	91	5	0	96
If group seiner, number and capacity of carrier vessels	91	5	0	96
Number of hydraulic haulers used	91	5	0	96
Purse seiner, group	82	10	0	92
Troller	82	10	0	92
Ice	82	10	0	92
Chilled sea water,	82	10	0	92
Refrigerated sea water,	82	10	0	92

Air freezer	82	10	0	92
Type(s) of vessel monitoring system(s)	82	10	0	92
Doppler current meter(s)	82	10	0	92
Light boats	82	10	0	92
Mainline length	82	10	0	92
Bait chute used? (yes/no)	82	10	0	92

Items receiving a score of less than 80 are shown below in Table 2. Reference to Appendix I to view the exact data field request, which are more detailed, such as:

Communications system(s) (list all systems, e.g. VHF radio, HF (SSB) radio, INMARSAT A, B, or C)

Table 2. Low scoring gear and vessel attribute fields

Data field	Essential	Desirable	Not Useful	Overall rank
Average floatline length	64	10	2	76
Average branchline length	64	10	2	76
Diameter of mainline	55	20	1	76
Sonar used to locate or differentiate fish species?	55	20	1	76
Navigational radar(s)	45	30	0	75
Mainline storage method	45	30	0	75
Net material	55	20	0	75
Total fuel carrying capacity (kilolitres)	55	15	2	72
Communications system(s)	55	15	2	72
Track plotter(s)	55	15	2	72
Source of altimetric data	45	25	0	70
Other (please specify) Auxilliary Vessels	55	15	0	70
Other (please specify) Vessel type	64	5	0	69
Maximum number of baskets or floats	55	10	3	68
New refrigeration system or fish storage method installed?	36	30	1	67
Net mesh type	36	30	1	67
Numbers of crew, listed by nationality	55	10	1	66
Source of bathythermograph data	36	25	2	63
Depth sounders used to locate or differentiate fish species?	45	15	2	62
Bathythermograph data used? (yes/no)	45	15	2	62
Country built	27	30	2	59
Hull material:	18	40	1	59
Steel	18	40	1	59
Wood	18	40	1	59
Fibreglass	18	40	1	59
Aluminium	18	40	1	59
Ferro-cement	18	40	1	59
Any other changes?	27	30	0	57
Power block sheave diameter	18	35	2	55
New hydraulic system installed?	18	30	3	51
New main engine installed?	18	30	3	51
Other (please specify) Hull Material	18	25	1	44

Data fields that received intermediate scores (80 – 88) which reflected some differences of opinion between respondents to the survey can be examined in Appendix II.

Appendix III provides a convenient view of rankings in which fields were ranked within their respective categories. For longline vessels, the mainline length, presence of a line shooter, use of the Tori pole mitigation device and bait thrower and mainline length were considered the most important to have

recorded. The least important fields had to do with particulars of the longline gear and source of altimetric data.

For purse seine vessels, the highest ranking parameters for recording included the net length, net depth, presence of a helicopter and particulars of support vessels. Least important data fields were considered to include particulars of the net construction and material, source of bathythermograph data and power block sheave diameter.

COMMENTS RECEIVED

A simple look at numeric scores can mask a great deal of useful information. Comments received were often useful to explain the ranking priorities and issues behind various choices. Some important considerations and recommendations brought forth by the survey include the following points:

Comments to Vessel type:

- Registration forms specific to vessel type may be more efficient and useful than a single, all-encompassing form

Comments to General Characteristics

- Vessel length, though very useful must be defined carefully due to the many ways in which boats can be measured and differences between definitions of *registered length* by country.
- GRT can be practically useless to compare international fleets due to differences in the way GRT is calculated in different nations. If it is used, the flag of registry must also be recorded and possibly the boat registration number.
- Fish carrying capacity is a much more meaningful and useful means to categorize fishing vessels and relative size than length or GRT.

Comments to Storage Methods

- Refrigeration method and storage capacity are main determinants of operational range and trip length, therefore are important and easily recorded ways to classify vessels without collecting many other small details.
- The Regional Register should require vessels to submit more detailed information on fish storage, including a well plan, total capacity by well and refrigeration method.
- Information on the normal storage strategy can be important from a monitoring and sampling perspective, such as vessels that transfer and sort catch to dry holds from brine wells at sea.

Comments on Changes to vessel during last 12 months

- Vessels should resubmit the form when significant changes take place. Need to define what “significant” changes are that would require this.

Comments on GEAR ATTRIBUTES:

- All these add to the efficiency of the searching of the vessel in some way.

- Much care needed in selecting what is useful and what is an unnecessary burden that will contribute to collection of information that confuses issues.
- With equipment that has been around awhile (depth sounders, plotters, etc) it is very difficult to see it being used in any sort of analyses - there are so many variables and they change so often that it is difficult to see how they could be used in a useful quantitative fashion
- I believe that knowing whether these items are on the fishing boat available for use is Essential, but I am tending toward Not Useful for the makes and models. I doubt if reporting of the latter would be reliable without directly contacting the boat operator.
- Monitoring new developments take greater precedence (satellite buoys, remote echo-sounding, sea surface images, etc.) Make and model information is much more important here.

Comments on Auxilliary vessels:

- Auxiliary craft are often changed too frequently for recording on the Regional Register be useful. This sort of information is better collected by observers or as part of an effort category in catch and effort logsheets.
- Maybe helicopters should be listed in this section as Auxilliary craft, rather than specifically in the Purse Seine section.

Comments on LONGLINERS

- Data fields asking which gear is “used” does not make sense for a registry that is filled out annually. The presence or absence of the gear is what is needed.
- Data on “average” floatline or branchline lengths may be useless if the vessel is equipped for two styles of longlining, such as shallow shark gear and also deep tuna gear. Average lengths would be meaningless.
- Data collection should concentrate on the potential fishing power of a longliner which involves parameters such as mainline length, and also their ability to target bigeye, surface species, etc.
- Differentiating shark targeting vessels or shark gear from tuna is becoming more important.
- Data requests on various remote sensing and electronic gear may be consolidated into a single section, since these technologies can be used by any type of vessel.
- Specific gear attributes may vary considerably throughout the year making an annual register an inappropriate place to collect this information.

Comments on POLE AND LINE VESSELS

- Information on number of real live fishermen (poling stations) should be collected as well as information on automatic pole stations.

Comments on PURSE SEINERS

- Move the questions on helicopters and support carriers to “Auxiliary Vessels” section.

- Some of this detailed data changes often and is better collected by observers or on logsheets.

Comments on TROLLERS

- Number of lines trolled should be monitored better on logsheets or by observers.
- What kind of lures !

Comments on CREW ATTRIBUTES

- Years of experience, especially for the captain is useful.
- Number of qualified crew and qualifications

Any general comments on the REGIONAL REGISTER AND COLLECTION OF DATA:

- This is an important exercise - it is important to ensure that we don't ask for data that confuses the issue - especially asking for equipment details that don't consider when, how and if the equipment is used.

SUMMARY

Although the survey received few responses, the quality of responses was high indicating some general consistencies. It is likely that the low level of response was indicative of many people feeling that they were not sufficiently briefed on the matter to provide input. In fact, several responses by email were received to this effect. Most of those responding were very familiar with this issue and will be those most positively affected by improvements to the management of the Regional Register database.

For those responses received, there was a clear consensus, noted by scores and comments, that items in Table 1 should be retained while items listed in Table 2 may be better collected by other means. Data fields ranking between these extremes were generally ranked within the “desirable” category and should be investigated more carefully. However, many of the comments shed further light to the some of the thoughts that determined the ranking of these intermediate data fields.

On the issue of categorizing vessels, comments noted that some means of standardizing vessel size or fishing power needs to be adopted to eliminate the problems inherent in the use of an unspecified “vessel length” or “GRT” field. Also, there was some consensus that a restructuring of some data categories is necessary and that some of the more detailed information may be better collected by at-sea observers, port samplers or through the vessel logsheet data systems.

Finally, the fact that some consensus was noted is not surprising, as the respondents came for the most part from a general subset of SCTB member. In order to gain a broader consensus, these issues should be further addressed during the plenary session of SCTB 15.

REFERENCES

Millar, C. 2001. Review of Vessel Attributes in the FFA Regional Register. 14th Standing Committee on Tuna and Billfish, Noumea, New Caledonia, 9 – 16 August 2001. FTWG-1. 12 pp

Appendix I. Survey on gear and vessel attributes collected by the Regional Register

Dear SCTB listserve participant,

The Fishing Technology Working Group of the SCTB, in collaboration with the FFA, OFP and SCTB members, has been tasked with the following for presentation to SCTB 15:

Evaluate the data that needs to be collected by the Regional Register on vessel and gear attributes with a view to identifying data that is "essential" and data that is "desirable" and data that is "not useful".

Please REPLY to this email which will make the form editable by you, and send the completed form to <ditano@soest.hawaii.edu>

Indicate a ranking for each item below in each check box
" () " as follows:

- (1) essential
- (2) desirable
- (3) not useful

AND supply any comments you may have on each section wherever the notation "(Your comments here)" appears.

Thank you for your cooperation. Your comments will assist the revision of Regional Register procedures.

VESSEL ATTRIBUTES

Vessel type:

- Longliner
- Pole and line vessel
- Purse seiner, single
- Purse seiner, group
- Troller
- Other (please specify)

Comments on Vessel Type:

General Characteristics:

- Country built
- Year built
- Hull material:
- Steel
- Wood
- Fibreglass
- Aluminium
- Ferro-cement
- Other (please specify)
- Gross registered tonnage (tonnes)
- Length overall (metres)
- Rated speed (knots)
- Total engine power (specify units)
- Total fuel carrying capacity (kilolitres)

Comments on General Characteristics:

Storage methods:

- Ice (yes/no, capacity in cubic metres, temperature in °C)
- Chilled sea water, using ice (yes/no, capacity in cubic metres, temperature in °C)
- Refrigerated sea water, including brine (yes/no, capacity in cubic metres, temperature in °C)
- Air freezer (yes/no, capacity in cubic metres, temperature in °C)
- Other (please specify)
- Total storage capacity (cubic metres)

Comments on Storage Methods:

Changes to vessel during last twelve months:

- Hull stretched? (yes/no)
- Fish holds added or deleted? (yes/no)
- New refrigeration system or fish storage method installed? (yes/no)
- New hydraulic system installed? (yes/no)
- New main engine installed? (yes/no)
- Any other changes? (please specify)

Comments on Changes to vessel during last 12 months:

GEAR ATTRIBUTES:

- Communications system(s) (list all systems, e.g. VHF radio, HF (SSB) radio, INMARSAT A, B, or C)
- Global positioning system(s) (GPS) (yes/no, list all makes and models)
- Type(s) of vessel monitoring system(s) (list all systems, e.g. Argos, GPS/INMARSAT C, GPS/HF-Radio)
- Navigational radar(s) (yes/no, list all makes and models)
- Track plotter(s) (yes/no, list all makes and models)

Sonar(s) (yes/no, list all makes and models)
Depth sounder(s) (yes/no, list all makes and models)
Bird radar(s) (yes/no, list all makes and models)
Doppler current meter(s) (yes/no, list all makes and models)
Sea surface temperature gauge(s) (yes/no, list all makes and models)
Satellite sea surface images used? (yes/no)
Radio direction finder system (yes/no, list all makes and models)
Drifting radio buoys (yes/no, number, list all makes and models)
Drifting satellite buoys (yes/no, number, list all makes and models)
Remote echo sounding buoys (yes/no, number, list all makes and models)

Comments on GEAR ATTRIBUTES:

Auxilliary vessels:

Speedboats (yes/no, list all makes and models)
Tow boats (yes/no, list all makes and models)
Light boats (yes/no, list all makes and models)
Net skiffs (yes/no, list all makes and models)
Baiting skiffs (yes/no, list all makes and models)
Other (please specify)

Comments on Auxilliary vessels:

LONGLINERS:

Mainline material (e.g. kuralon, nylon monofilament)
Diameter of mainline (millimetres)
Mainline length (metres)
Mainline storage method (basket or drum)
Maximum number of baskets or floats
Average floatline length (metres)
Average branchline length (metres)
Wire trace used on branchline? (yes/no)
Maximum number of hooks
Line shooter present? (yes/no)
Altimetric data used to identify fishing locations? (yes/no)
Source of altimetric data
Time/depth/temperature recorders (minilogs) used? (yes/no)
Tori poles used? (yes/no)
Bait chute used? (yes/no)
Bait throwers used? (yes/no)

Comments on LONGLINERS:

POLE AND LINE VESSELS:

Number of automatic poling devices
Bait storage capacity (cubic metres)

Comments on POLE AND LINE VESSELS:

PURSE SEINERS:

Net length (metres)
Net depth (metres)
Net material
Net mesh type (knotless or knotted)
Average mesh size of the bunt (millimetres)
Average mesh size of the body (millimetres)
Power block net pull (kilos)
Power block sheave diameter (centimetres)
Purse winch? (yes/no, make and model)
Helicopter? (yes/no, make and model)
Number of drifting FADs used
Tender vessels used? (yes/no, please specify, e.g. number of FAD tender vessels)
If group seiner, number and capacity of carrier vessels
Sonar used to locate or differentiate fish species? (yes/no)
Depth sounders used to locate or differentiate fish species? (yes/no)
Bathythermograph data used? (yes/no)
Source of bathythermograph data

Comments on PURSE SEINERS:

TROLLERS:

Number of lines used
Number of hydraulic haulers used
Down riggers used? (yes/no)

Comments on TROLLERS:

OTHERS:

Type of gear used
Length of net
Number of hooks used

Comments on OTHERS:

CREW ATTRIBUTES:

Numbers of crew, listed by nationality

Comments on CREW ATTRIBUTES:

ANY GENERAL COMMENTS ON THE REGIONAL REGISTER AND COLLECTION OF DATA:

Appendix II. Ranking of all data fields in descending order

Data field	Essential	Desirable	Not useful	1 rank	2 rank	3 rank	Overall rank
Longliner	11	0	0	100	0	0	100
Pole and line vessel	11	0	0	100	0	0	100
Purse seiner, single	11	0	0	100	0	0	100
Total storage capacity (cubic metres)	11	0	0	100	0	0	100
Mainline material	11	0	0	100	0	0	100
Line shooter present?	11	0	0	100	0	0	100
Net length (metres)	11	0	0	100	0	0	100
Net depth (metres)	11	0	0	100	0	0	100
Number of lines used	11	0	0	100	0	0	100
Type of gear used	11	0	0	100	0	0	100
Length of net	11	0	0	100	0	0	100
Number of hooks used	11	0	0	100	0	0	100
Length overall (metres)	10	1	0	91	5	0	96
Satellite sea surface images used?	10	1	0	91	5	0	96
Drifting satellite buoys	10	1	0	91	5	0	96
Remote echo sounding buoys	10	1	0	91	5	0	96
Tori poles used? (yes/no)	10	1	0	91	5	0	96
Bait throwers used? (yes/no)	10	1	0	91	5	0	96
Helicopter?	10	1	0	91	5	0	96
If group seiner, number and capacity of carrier vessels	10	1	0	91	5	0	96
Number of hydraulic haulers used	10	1	0	91	5	0	96
Purse seiner, group	9	2	0	82	10	0	92
Troller	9	2	0	82	10	0	92
Ice	9	2	0	82	10	0	92
Chilled sea water,	9	2	0	82	10	0	92
Refrigerated sea water,	9	2	0	82	10	0	92
Air freezer	9	2	0	82	10	0	92
Type(s) of vessel monitoring system(s)	9	2	0	82	10	0	92
Doppler current meter(s)	9	2	0	82	10	0	92
Light boats	9	2	0	82	10	0	92
Mainline length	9	2	0	82	10	0	92
Bait chute used? (yes/no)	9	2	0	82	10	0	92
Total engine power (specify units)	9	1	1	82	5	1	88
Wire trace used on branchline?	9	1	1	82	5	1	88
Down riggers used? (yes/no)	9	1	1	82	5	1	88
Other (please specify)	8	3	0	73	15	0	88
Depth sounder(s)	8	3	0	73	15	0	88
Bird radar(s)	8	3	0	73	15	0	88
Radio direction finder system	8	3	0	73	15	0	88
Tow boats	8	3	0	73	15	0	88
Net skiffs	8	3	0	73	15	0	88
Baiting skiffs	8	3	0	73	15	0	88
Number of automatic poling devices	8	3	0	73	15	0	88
Bait storage capacity	8	3	0	73	15	0	88
Gross registered tonnage (tonnes)	9	0	2	82	0	2	84
Maximum number of hooks	8	2	1	73	10	1	84
Average mesh size of the bunt	8	2	1	73	10	1	84
Average mesh size of the body	8	2	1	73	10	1	84
Purse winch?	8	2	1	73	10	1	84
Tender vessels used?	8	2	1	73	10	1	84
Number of drifting FADs used	8	2	1	73	10	1	84
Sea surface temperature guage(s)	7	4	0	64	20	0	84

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Speedboats	7	4	0	64	20	0	84
Time/depth/temperature recorders	7	4	0	64	20	0	84
Drifting radio buoys	8	2	0	73	10	0	83
Altimetric data used to identify fishing locations?	8	2	0	73	10	0	83
Power block net pull (kilos)	8	1	2	73	5	2	80
Hull stretched?	7	3	1	64	15	1	80
Fish holds added or deleted?	7	3	1	64	15	1	80
Sonar(s)	7	3	1	64	15	1	80
Year built	6	5		55	25	0	80
Rated speed (knots)	6	5	0	55	25	0	80
Global positioning system(s)	6	5	0	55	25	0	80
Average floatline length	7	2	2	64	10	2	76
Average branchline length	7	2	2	64	10	2	76
Diameter of mainline	6	4	1	55	20	1	76
Sonar used to locate or differentiate fish species?	6	4	1	55	20	1	76
Navigational radar(s)	5	6	0	45	30	0	75
Mainline storage method	5	6	0	45	30	0	75
Net material	6	4	0	55	20	0	75
Total fuel carrying capacity (kilolitres)	6	3	2	55	15	2	72
Communications system(s)	6	3	2	55	15	2	72
Track plotter(s)	6	3	2	55	15	2	72
Source of altimetric data	5	5	0	45	25	0	70
Other (please specify) Auxilliary Vessels	6	3	0	55	15	0	70
Other (please specify) Vessel type	7	1	0	64	5	0	69
Maximum number of baskets or floats	6	2	3	55	10	3	68
New refrigeration system or fish storage method installed?	4	6	1	36	30	1	67
Net mesh type	4	6	1	36	30	1	67
Numbers of crew, listed by nationality	6	2	1	55	10	1	66
Source of bathythermograph data	4	5	2	36	25	2	63
Depth sounders used to locate or differentiate fish species?	5	3	2	45	15	2	62
Bathythermograph data used? (yes/no)	5	3	2	45	15	2	62
Country built	3	6	2	27	30	2	59
Hull material:	2	8	1	18	40	1	59
Steel	2	8	1	18	40	1	59
Wood	2	8	1	18	40	1	59
Fibreglass	2	8	1	18	40	1	59
Aluminium	2	8	1	18	40	1	59
Ferro-cement	2	8	1	18	40	1	59
Any other changes?	3	6	0	27	30	0	57
Power block sheave diameter	2	7	2	18	35	2	55
New hydraulic system installed?	2	6	3	18	30	3	51
New main engine installed?	2	6	3	18	30	3	51
Other (please specify) Hull Material	2	5	1	18	25	1	44

Appendix III. Ranking of data fields by category

Data field	Essential	Desirable	Not useful	1 rank	2 rank	3 rank	Overall rank
Vessel type:							
Longliner ()	11	0	0	100	0	0	100
Pole and line vessel ()	11	0	0	100	0	0	100
Purse seiner, single ()	11	0	0	100	0	0	100
Purse seiner, group ()	9	2	0	82	10	0	92
Troller ()	9	2	0	82	10	0	92
Other (please specify) ()	7	1	0	64	5	0	69
General Characteristics:							
Length overall (metres) ()	10	1	0	91	5	0	96
Total engine power (specify units) ()	9	1	1	82	5	1	88
Gross registered tonnage (tonnes) ()	9	0	2	82	0	2	84
Year built ()	6	5		55	25	0	80
Rated speed (knots) ()	6	5	0	55	25	0	80
Total fuel carrying capacity (kilolitres) ()	6	3	2	55	15	2	72
Country built ()	3	6	2	27	30	2	59
Hull material: ()	2	8	1	18	40	1	59
Steel ()	2	8	1	18	40	1	59
Wood ()	2	8	1	18	40	1	59
Fibreglass ()	2	8	1	18	40	1	59
Aluminium ()	2	8	1	18	40	1	59
Ferro-cement ()	2	8	1	18	40	1	59
Other (please specify) ()	2	5	1	18	25	1	44
Storage methods:							
Total storage capacity (cubic metres) ()	11	0	0	100	0	0	100
Ice	9	2	0	82	10	0	92
Chilled sea water,	9	2	0	82	10	0	92
Refrigerated sea water,	9	2	0	82	10	0	92
Air freezer	9	2	0	82	10	0	92
Other (please specify) ()	8	3	0	73	15	0	88
Changes to vessel during last twelve months:							
Hull stretched?	7	3	1	64	15	1	80
Fish holds added or deleted?	7	3	1	64	15	1	80
New refrigeration system or fish storage method installed?	4	6	1	36	30	1	67
Any other changes?	3	6	0	27	30	0	57
New hydraulic system installed?	2	6	3	18	30	3	51
New main engine installed?	2	6	3	18	30	3	51
GEAR ATTRIBUTES:							
Satellite sea surface images used?	10	1	0	91	5	0	96
Drifting satellite buoys	10	1	0	91	5	0	96
Remote echo sounding buoys	10	1	0	91	5	0	96
Type(s) of vessel monitoring system(s)	9	2	0	82	10	0	92
Doppler current meter(s)	9	2	0	82	10	0	92
Depth sounder(s)	8	3	0	73	15	0	88
Bird radar(s)	8	3	0	73	15	0	88
Radio direction finder system	8	3	0	73	15	0	88
Sea surface temperature gauge(s)	7	4	0	64	20	0	84
Drifting radio buoys	8	2	0	73	10	0	83
Sonar(s)	7	3	1	64	15	1	80
Global positioning system(s)	6	5	0	55	25	0	80
Navigational radar(s)	5	6	0	45	30	0	75
Communications system(s)	6	3	2	55	15	2	72
Track plotter(s)	6	3	2	55	15	2	72

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Auxilliary vessels:							
Light boats	9	2	0	82	10	0	92
Tow boats	8	3	0	73	15	0	88
Net skiffs	8	3	0	73	15	0	88
Baiting skiffs	8	3	0	73	15	0	88
Speedboats	7	4	0	64	20	0	84
Other (please specify) ()	6	3	0	55	15	0	70
LONGLINERS:							
Mainline material	11	0	0	100	0	0	100
Line shooter present?	11	0	0	100	0	0	100
Tori poles used? (yes/no) ()	10	1	0	91	5	0	96
Bait throwers used? (yes/no) ()	10	1	0	91	5	0	96
Mainline length	9	2	0	82	10	0	92
Bait chute used? (yes/no) ()	9	2	0	82	10	0	92
Wire trace used on branchline?	9	1	1	82	5	1	88
Maximum number of hooks ()	8	2	1	73	10	1	84
Time/depth/temperature recorders	7	4	0	64	20	0	84
Altimetric data used to identify fishing locations?	8	2	0	73	10	0	83
Average floatline length	7	2	2	64	10	2	76
Average branchline length	7	2	2	64	10	2	76
Diameter of mainline	6	4	1	55	20	1	76
Mainline storage method	5	6	0	45	30	0	75
Source of altimetric data ()	5	5	0	45	25	0	70
Maximum number of baskets or floats ()	6	2	3	55	10	3	68
POLE AND LINE VESSELS:							
Number of automatic poling devices ()	8	3	0	73	15	0	88
Bait storage capacity	8	3	0	73	15	0	88
PURSE SEINERS:							
Net length (metres) ()	11	0	0	100	0	0	100
Net depth (metres) ()	11	0	0	100	0	0	100
Helicopter?	10	1	0	91	5	0	96
If group seiner, number and capacity of carrier vessels ()	10	1	0	91	5	0	96
Average mesh size of the bunt	8	2	1	73	10	1	84
Average mesh size of the body	8	2	1	73	10	1	84
Purse winch?	8	2	1	73	10	1	84
Number of drifting FADs used ()	8	2	1	73	10	1	84
Tender vessels used?	8	2	1	73	10	1	84
Power block net pull (kilos) ()	8	1	2	73	5	2	80
Sonar used to locate or differentiate fish species?	6	4	1	55	20	1	76
Net material ()	6	4	0	55	20	0	75
Net mesh type	4	6	1	36	30	1	67
Source of bathythermograph data ()	4	5	2	36	25	2	63
Depth sounders used to locate or differentiate fish species?	5	3	2	45	15	2	62
Bathythermograph data used? (yes/no) ()	5	3	2	45	15	2	62
Power block sheave diameter	2	7	2	18	35	2	55
TROLLERS:							
Number of lines used ()	11	0	0	100	0	0	100
Number of hydraulic haulers used ()	10	1	0	91	5	0	96
Down riggers used? (yes/no) ()	9	1	1	82	5	1	88
OTHERS:							
Type of gear used ()	11	0	0	100	0	0	100
Length of net ()	11	0	0	100	0	0	100
Number of hooks used ()	11	0	0	100	0	0	100
CREW ATTRIBUTES:							
Numbers of crew, listed by nationality ()	6	2	1	55	10	1	66