National Data Collection Programme under Council Regulation (EC) N° 199/2008, Commission Regulation (EC) N° 655/2008 and Commission Decision N° 2010/93/EU

Annual Report 2014

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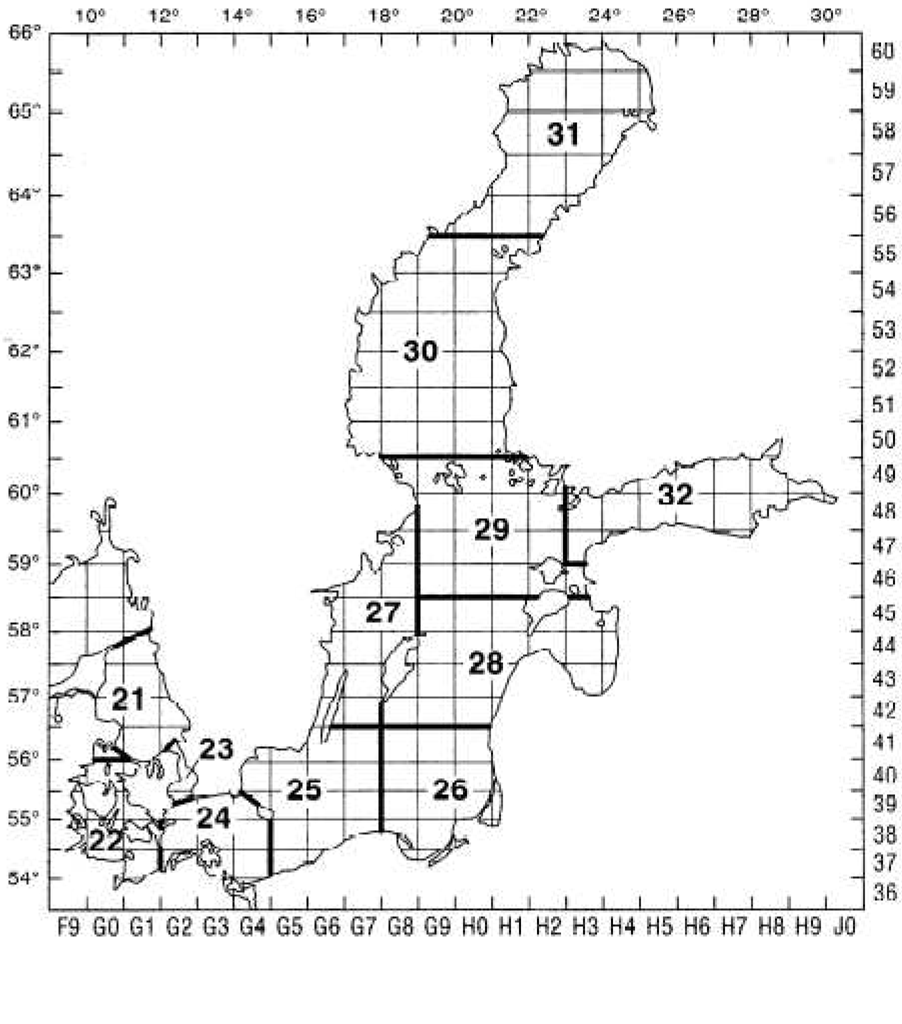
Ministry of Agriculture and Forestry

Natural Resources Institute Finland

FINLAND



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I General framework

This is the Annual Report 2014 (AR 2014) reporting the achieved national data collection in 2014 based on the Finnish National Programme 2014-2016 (NP 2014-2016). The work has been done under the DCF: Council Regulation (EC) N° 199/2008, Commission Regulation (EC) N° 655/2008 and Commission Decision N° 2010/93/EU.

The data collection under the NP 2014-2016 is carried out solely in the Baltic Sea region (IIIb-d).

List of Derogations, see Standard table I.A.1

List of bilateral and multilateral agreements, see Standard table I.A.2

II National data collection organisation

II.A National correspondent and participating institutes

National correspondent
The administration of this national data collection programme is in the responsibility of the Ministry of Agriculture and Forestry (MAF), which designates a national correspondent in charge of the implementation of this programme and the DCR.

The contact information of the Ministry of Agriculture and Forestry and the national correspondent are as follows:

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Participating institutes
The MAF was assisted by the Finnish Game and Fisheries Research Institute (FGFRI), which designates two contact persons responsible for attending practical issues between the Ministry and the Research Institute. From 1 January 2015 on, the Finnish Game and Fisheries Research Institute have been merged with MTT Agrifood Research Finland, the Finnish Forest Research Institute, and the statistical services of the Information Centre of the Ministry of Agriculture and Forestry, to form Natural Resources Institute Finland (Luke), which continues the implementation of the DCR in Finland.

The contact information of the Luke and the contact persons are as follows:

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National DCF website

Webpages of the Luke are still under construction, but a short description of the DCF is given in the old website of the FGFRI (http://www.rktl.fi/tilastot/eu_tiedonkeruu/). At that address there is also an online service, which allows any customer to build interactive statistical presentations on e.g. fisheries catches and effort, aquaculture, fish processing industry etc. Even if this data is available to any customer, service is available only in Finnish at the moment. Data is aggregated data, due to privacy protection reasons.

Primary data, which contains confidential information, is stored in a database which is accessible to all persons who take part in the data collection, but it is accessible only via user registration and password. Parts of the collected data are also sent to other databases e.g. survey data is sent to Baltic Acoustic Databases (BAD1 and BAD2)

Furthermore, detailed or low-level aggregated data is sent from Finnish database to Baltic regional database, which allows customers to use data on a regional (stock) level.

National co-ordination meetings

Two national co-ordination meetings were organised in 2014 as planned.

The 1st meeting was convened at FGFRI premises in Helsinki, 10-11 March 2014. The main emphasis of this meeting was on the general co-ordination of the implementation of the DCF. The FGFRI personnel responsible for carrying out specific data collection tasks (a total of 28 persons) took part in this meeting whose agenda consisted of following items: Implementation of NP 2014-2016; Practical issues of 2014 data collection; International coordination and attendees in the international coordination meetings; Review of status of the database development.

The 2nd meeting was convened at FGFRI premises in Helsinki, 30 October 2014. The FGFRI personnel involved in data collection tasks (a total of 34 persons) took part in this meeting having the main focus on implementation of the data collection in 2014-2015 and on future prospects of the DCF. The agenda consisted of following items: Status of implementation of NP 2014-2016 in 2014; Planning and scheduling the actions under 2015; Review on financial practises; Overview on database development.

II.B Regional and International co-ordination

II.B.1 Attendance of international meetings

An overview of the international co-ordination meetings we attended in 2014 under the NP 2014-2016 is presented in Standard table II.B.1.

II.B.2 Follow-up of regional and international recommendations

The regional co-ordination takes place mainly within the framework of Regional Coordination Meeting for Baltic Area (RCM Baltic), including one annual meeting.

No direct or relevant recommendations from LM 2013 or RCM Baltic 2013 for the Finnish data collection were included in the compilation of recommendations by DG MARE from the 2013 Liaison Meeting and 2013 STECF Plenary meetings.

III Module of evaluation of the fishing sector

III.A General description of the fishing sector

In the end of 2014, the Finnish fishing fleet numbered 3144 registered vessels. Most of the vessels (3074) were less than 12 meter (LOA), and they were used in coastal fishing. The overall capacity of the vessels was 16 400 GT and power 171 000 kW. A big part of the vessels are used seasonally only. One should keep in mind too, that depending on the winter and latitude, the coastal waters in Finland are ice covered over several months, and then fishing vessels are not in use. Regardless that, fishing can be conducted under ice cover. Then fishing vessels can be replaced for instance by snowmobiles.

The total fish catch level in Finland has been 120-180 000 tons in the previous years. In 2014 commercial marine catch was about 148 000 tons. The bulk of the catch consisted of Baltic herring, 130 000 tons, followed by sprat, 12 000 tons. Commercial catch in inland waters in 2012 was 4 800 tons, of which more than one half was vendace (*Coregonus albula*). Total catch of recreational fishermen in 2012 was 25 000 tons, of which 5 900 tons was caught in the Baltic Sea and the rest in the inland waters.

During the last 5 years the number of full-time fishermen has decreased from about 600 to about 500. The number of registered part-time fishermen has been more stable, at a level of 1500-1600. The overall gross tonnage of the fishing fleet has been quite stable. The number of larger trawler, 24-40m, has grown from 13 to 19, but in the smaller segments, the numbers of trawlers have mostly decreased.

The total commercial marine catch has increased from 118 mill kg in 2009 to 148 mill kg in 2014. This is explained mostly by the increase of Baltic herring catch. However, at the same time the catch of sprat has decreased from 23 mill kg to 12 mill kg. In the coastal fisheries, the low value freshwater species have become more frequent.

During the period, the total catch value has doubled from 24 to 47 mill EUR. The increase is explained mainly by the volume and value of herring catch.

III.B Economic variables - Baltic Sea (ICES areas III b-d)

III.B.1 Achievements: results and deviation from NP proposal

Data sources

Economic data collection was based on hierarchical multi-stage survey that combines information from different data sources. Main sources were the central control register on commercial fishery (includes fishery catch data, fishing vessel register, first hand sales of quota species), financial database in Statistic Finland (SF) and account survey. Starting from 2009, there were new account data available for the coastal fishermen collected by Ministry of Agriculture and Forestry in connection to seal damage compensation applications.

Target frame population

The evaluation of the economic situation in the fishing sector covers all fishing vessels in the fishing vessel register on the 1st of January. Each vessel is owned by fishing unit: fishing unit can be a company, a fisherman or a household. These fishing units comprise the target population of economic data collection.

Catch data is linked to vessels to divide them into active or inactive vessels.

All vessels were segmented with auxiliary information from fishing vessel register and catch data.

Sampling and data collection

Economic data collection was conducted with hierarchical multi-stage survey. Information on catches by species, value of landings by species, effort data and vessel capacity information was collected by vessel. This data was collected exhaustively for all vessels. Economic data was collected by fishing unit: company or fisherman (including family members). Financial statements data for fishing firms with income over a threshold level of € 10 846 were obtained from the database of Statistics Finland (SF) on Financial statements of Industry. This group of firms produce about 60% of total turnover of Finnish fishing fleet. The coverage of the financial statements for this group is good. Primary sources of financial statements data in Statistics Finland are direct inquiries and business taxation material supplemented by Business Register data. Data is based on corporate balance sheet and profit and loss account data. Statistics Finland checks for the validity of the data. Financial data gives a reliable estimate for profitability of the larger vessels, but the disaggregation of cost items does not follow that in regulation. Therefore the cost and earnings data needs to be collected with an additional account survey on larger fishing firms (in practice trawlers).

Account data for the coastal fishermen is available from the sources of Ministry of Agriculture and Forestry. Fishermen who have suffered catch damages and losses caused by seals have an opportunity to apply for compensation for the economic loss. The compensation is paid by the Ministry of Agriculture and Forestry. For the application, the fishermen need to attach detailed account data. The data is presented according to the cost and earnings structure defined by the DCF regulations. The number of vessels/fishing units in this account data was about 202 in 2013.

Estimation

Cost and earnings estimates were done by design-based and model assisted regression and ratio estimation. First the total revenue was estimated with regression using the total value of catches.

Then total costs were estimated (with regression) for total population per segments from the total revenue. The cost variables were estimated as ratio estimates from the total costs.

Employment was estimated based on previous activity survey and log book information. Employment was presented in number of employees and FTE. FTE was estimated based on the FTE from Statistics Finland and based on the employment numbers reported by the coastal fishermen in the account data from Ministry of Agriculture and Forestry. Opportunity costs for unpaid labour were estimated by Statistics Finland based on the annual amount of unpaid work and the average wage of the enterprise.

Fuel costs were estimated based on financial statements and account survey. Fuel consumption was estimated based on the costs by fleet segments and average fuel prices in 2012.

The price data on fish subject to quota (Baltic herring, sprat, salmon, and cod) were calculated from the purchasing notifications submitted by the first hand purchasers of fish to the Centres for Economic Development, Transport and the Environment. The price data were checked and complemented with the book keeping of fish wholesalers in coastal areas. The prices of other fish species were calculated from the book keeping of fish wholesalers. The book keeping data is a non-probability sample of the biggest fish wholesale enterprises. The prices were calculated by species, size-class, degree of processing, and by month.

Perpetual inventory method for capital value and capital costs

PIM method was used for the calculation of the capital value, the depreciation and the investments for the fleet. Price per capacity unit for vessels under 12 meters is based on the book values of the vessels from the 2013 account data. Price per capacity unit for trawlers is based on the insurance values of 2013 from a fishing insurance association. Account data of coastal vessels was combined with the vessel register data by vessel code. Then cumulated depreciation costs were calculated using digressive depreciation scheme from the book value of the vessels. Cumulated depreciation costs were added to the book value to get gross historical values by vessel using the following formula:

$$Gross\ historical\ value_i = \frac{Book\ value_i}{(1-Depreciation\%_i)^{Age_i}},$$

where i is the asset (hull, engine, electronics and other equipment). Then heavy machinery producer price index was applied to get the replacement value of the total fleet with 2013 price level. Price per GT was then calculated from the replacement value. The price per GT from 2013 was deflated with the heavy machinery producer price index to get the price per GT for 2008-2012. These prices/GT was used to calculate the depreciated replacement value, depreciation and investments for the Finnish fleet in 2008-2013.

<u>Assumptions used in the PIM are as follows</u>:

Depreciation rates applied: hull 14%, engine 31%, electronics 52% and other equipment 41%. Using the service life of each asset the depreciation rates were determined so that the asset would be maximally depreciated within its service life (assuming 2.5% scrapping value after 25 years). .Vessel composition assumed for vessels under 12 meters: hull 35%, engine 50%, electronics 7.5% and other equipment 7.5%.

Vessel composition assumed for pelagic trawlers: hull 40%, engine 30%, electronics 25% and other equipment 5%.

Renewal times: hull never renewed, engine 10 years, electronics 5 years and other equipment 7 years.

Reference year

The reference year of economic data collection is the preceding year. Preliminary financial statements data are available on the 4th quarter after the reference year. Therefore information on the economic situation of fishing sector will be provided earliest one year after the reference year investigated.

III.B.2 Data quality: results and deviation from NP proposal

Capacity and landings and effort data covers all vessels. Financial statements are collected for all firms with income over a threshold level of € 10 846 in the database of Statistics Finland (SF) on Financial statements of Industry and Business register. This register gives good coverage in number of firms and share of production.

However, there is under-coverage in the Business Register (compared to target population) that needed to be estimated with regression estimation and additional cost structure analysis. Accuracy of these estimates was as planned in the NP. For coastal vessels (activity less than the threshold) more detailed account data was obtained from the Ministry of Agriculture and Forestry.

III.B.3 Follow-up of regional and international recommendations

There were no direct or relevant recommendations from LM 2013 or RCM Baltic 2013 for the Finnish data collection on economic variables.

III.B.4 Actions to avoid shortfalls

Fuel consumption was estimated based on fuel costs and annual average fuel prices. Offshore vessels use same fuel type (light fuel oil) and fuel consumption can be estimated. Coastal vessels are equipped with various engines that use various fuel types. Therefore these estimates should be considered uncertain.

III.C Metier-related variables - Baltic Sea (ICES areas III b-d)

III.C.1 Achievements: results and deviation from NP proposal

The data collected during the sampling year has been updated into Standard tables III.C.3 and III.C.6. There are no deviations from the sampling strategies outlined in the NP.

Metier FYK_ANA_0_0_0

This fishery is targeting salmon (*Salmo salar*) and sea trout (*Salmo trutta*).

The amount of sampled fishing trips for the metier FYK_ANA_0_0_0 was 173 (133 % of planned 130 trips).

The achieved number of length measurements for *Salmo salar* was 1909 and 744 specimens were collected from other metiers (from the river catches of the River Tornionjoki and trolling in SD32), increasing the total to 2653 specimens. In addition 686 specimens were collected in Denmark and Poland from the southern Main Basin off-shore fishery for the DNA analysis, but these samples were excluded from the precision level calculations.

The achieved number of length measurements for *Salmo trutta* was 234 specimens.

The number of *Salmo trutta* samples was lower than planned because no stock related variables were sampled in 2014. The planned number of samples (500) is set for the sampling of stock related variables. However, the anticipated precision of length measurements was reached.

Metier FYK_FWS_0_0_0

The amount of sampled fishing trips for the metier FYK_FWS_0_0_0 was 25 (125 % of planned 20 trips).

This metier includes two national metiers; FYK_FWS_0_0_0 COREG targeting common whitefish (*Coregonus lavaretus*), and FYK_FWS_0_0_0 PERCIF targeting perch (*Perca fluviatilis*) and pike-perch (*Sander lucioperca*).

The amount of sampled fishing trips for national metier FYK_FWS_0_0_0 COREG was 8 (89 % of planned 9 trips) and for national metier FYK_FWS_0_0_0 PERCIF 17 (154% of planned 11 trips).

The achieved number of length measurements from the metier FYK_FWS_0_0_0 for *Coregonus lavaretus, Perca fluviatilis* and *Sander lucioperca* were 654, 1111, and 405 respectively.

Metier GNS_FWS_0_0_0

The amount of sampled fishing trips for the metier GNS_FWS_0_0_0 was 63 (121 % of planned 52 trips).

The main target species of the metier GNS_FWS_0_0_0 are common whitefish (*Coregonus lavaretus*), perch (*Perca fluviatilis*) and pike-perch (*Sander lucioperca*), and the achieved number of length measurements for these species were 1145, 1808, and 1623, respectively.

Metiers FYK_SPF_0_0_0 and OTM_SPF_16-104_0_0

Both of these fisheries are targeting on herring (*Clupea harengus*) and the latter also on sprat (*Sprattus sprattus*).

Amount of sampled fishing trips for metier FYK_SPF_0_0_0 was 21 (88 % of planned 24 trips) and for metier OTM_SPF_16-104_0_0 85 trips (92 % of planned 92 trips).

The achieved number of length measurements for *Clupea harengus* was 6 472 from metier FYK_SPF_0_0_0 and 26 491 from metier OTM_SPF_16-104_0_0. In addition, 277 specimens were collected from other metiers increasing the total to 33 240 specimens.

The achieved number of length measurements for *Sprattus sprattus* was 9 244 specimens (solely from metier OTM_SPF_16-104_0_0).

III.C.2 Data quality: results and deviation from NP proposal

Precision estimates

Comprehensive information of the precision estimates is given in Annex II.

Finland has been granted a derogation on discard sampling of herring, sprat, salmon, and sea trout. Therefore, the precision estimates on discards were not calculated for these species. The precision estimates on volume of discards were not calculated for any of the sampled species.

Whitefish (*Coregonus lavaretus*)

The CV for length sampling of landings (0.4%) was below the target value 12.5%.

Herring (*Clupea harengus*)

The CV for length sampling of landings (0.2%) was below the target value 12.5%.

Perch (*Perca fluviatilis*)

The CV's for length sampling of landings (0.3%) and discards (0.8%) were below the target value 12.5%.

Salmon (*Salmo salar*)

The CV for length sampling of landings (0.4%) was below the target value 12.5%.

Sea trout (*Salmo trutta*)

The CV for length sampling of landings (0.9%) was below the target value 12.5%.

Pikeperch (*Sander lucioperca*)

The CV's for length sampling of landings (0.2%) and discards (0.6%) were below the target value 12.5%.

Sprat (*Sprattus sprattus*)

The CV for length sampling of landings (0.1%) was below the target value 12.5%.

III.C.3 Follow-up of regional and international recommendations

There were no direct or relevant recommendations from LM 2013 or RCM Baltic 2013 for the Finnish data collection on metier-related variables.

III.C.4 Actions to avoid shortfalls

There was a shortfall of 12 % (3 trips) in the metier FYK_SPF_0_0_0 in 2014 due to decreased effort in trapnet fisheries in SD 30 and shorter season than was expected.

III.D Recreational fisheries - Baltic Sea (ICES areas III b-d)

III.D.1 Achievements: results and deviation from NP proposal

In 2012, there were about 1.5 million recreational fishermen in 850 000 households in Finland. Of those, about 200 000 fishermen participated in fishing only by rowing or steering a boat. The proportion of recreational fishermen of the total Finnish population was 28 per cent. The total catch amounted to 24.5 million kg, of which 76 per cent was taken in inland waters. The marine recreational catch in 2012 was about 5.9 million kg. Perch and pike were the most important catch species. The salmon catch in the sea area was estimated to be 36 (± 33) and the eel catch 2 (± 3) tons. The cod catch in 2012 was 3 (± 3) ton.

Data on recreational fisheries in Finland is collected by postal surveys, separately for recreational marine catches and for recreational salmon catches in rivers.

Recreational marine catches

The data on recreational marine fishing is collected as planned in the NP proposal - by a postal survey using a sample drawn from the population register maintained by the Finnish Population Register Centre. The whole recreational catch is surveyed, but a special attention is drawn to marine catches of salmon, cod and eel for instance in terms of sample allocation. The Finnish population register is the frame population, because there is no covering and usable register on the recreational fishermen. On the other hand, one cannot predestinate, whether the fishermen who are contacted have been fishing at the sea, in inland waters or both. The statistical unit in the recreational fishing statistics is the household-dwelling. The term recreational fishing includes all the fishing carried out by Finnish household-dwellings with the exception of professional fishermen and their household-dwellings.

The process of collecting catch data of recreational fishing in 2014 started in the end of 2014 by planning and a preparatory work of the survey. This included planning the enquiry forms, commissioning the frame register and designing and extracting the sample. The postal inquiries were sent in the beginning of 2015. There were no deviations in the data collection compared to what was planned in the NP proposal. The quarterly catches for the year 2014 will be estimated with the help of external catch composition data. The biennial sampling strategy has been in use since the early days of DCR, and the strategy has been justified by pilot studies approved by STECF.

Recreational salmon catches in rivers

A register of sold licences for recreational fisheries in the River Tornionjoki was created. The register included 10 574 fishermen as a target population, out of which 1 500 Finnish fishermen were randomly selected to receive a postal questionnaire. The response rate was 57.5% after two reminders. All data were stored into databases and analysed. A census to a small group (fishing in less than ten fishing grounds) of local fishers who have right for fishing with traditional fishing methods was conducted and the data was stored into a database.

The postal query concerning rod fishery was carried out in the River Simojoki. An on-line register of licence sales, including nearly 1 250 licences, was recorded to internet during the year 2014 fishing season. Almost 450 postal questionnaires were sent to a random sample of the fishermen. The response rate was 47% after two reminders. Moreover, 30 fishermen had returned voluntarily the question form soon after their fishing trip was over. All data were stored into databases and analysed.

Catch statistics were/will be reported in several national and international reports and working groups, like in the ICES WGBAST.

III.D.2 Data quality: results and deviation from NP proposal

Recreational marine catches

The sample comprised 7 500 household-dwelling units. One household-dwelling unit consists of the persons living permanently in the same dwelling. The sampling was targeted at persons aged 18-74 years. The sample design was stratified sampling. The strata were formed taking into account the location of the person's municipality of residence, the type of municipality and the location of the municipality in relation to the sea.

The questionnaire had four pages, and the focus of the questions was on the age and gender of the persons participating in fishing, the importance of fishing as a hobby, fishing activity by fishing area, and catch sizes. The survey was conducted at the beginning of 2015.

The results of the pilot studies have proved that, the accuracy of the catch estimates will increase, while the sample size gets larger. On the other hand, the marginal benefit will degrease while increasing the sample size. Salmon, cod and eel are caught by relatively very few fishermen, and in addition, the variation of these uncommon catches by fishermen is relatively high. Because of these facts, the confidence intervals of those catch estimates are always quite wide even in the case of large sample sizes (sample size several thousands).

The post-sampling for non-respondents helps to correct the bias resulting from the differences between respondents and non-respondents. If the bias is not taken into account, the catch and number of fishermen would be overestimated.

There were no deviations in the achieved accuracy compared to what was planned in the NP proposal.

Recreational salmon catches in rivers

The fishers who will receive mailed questionnaires are sampled from the registers at a rate making it possible to estimate salmon catches at level 1 precision (a precision of ± 25% for a 95% confidence level):

- River Tornionjoki: sampling rate about 1:6,
- River Simojoki: sampling rate over1:3.

The length distribution estimates of the catch will be acquired by catch samples (see chapter III.E).

III.D.3 Follow-up of regional and international recommendations

There were no direct or relevant recommendations from LM 2013 or RCM Baltic 2013 for the Finnish data collection on recreational fisheries.

III.D.4 Actions to avoid shortfalls

The pilot studies on recreational salmon fishery and cod fishery in the sea area were conducted earlier. A basic result of the pilot studies was that a cost-efficient data collection strategy, with respect to the reliability, is to collect data on recreational fishing every second year. Therefore the last surveys are conducted in 2013 and 2015 (referring to years 2012 and 2014). This practice will produce a continuous and methodologically stable biennial time-series of recreational catches.

III.E Stock-related variables - Baltic Sea (ICES areas III b-d)

III.E.1 Achievements: results and deviation from NP proposal

The data collected in the sea area for all the sampled species and/or stocks during year 2014 has been updated into Standard table III.E.3. However, the table was considered to be ‘not applicable’ for reporting the stock-related variables for wild salmon stocks, which results are reported in the AR text under heading ‘Monitoring of juvenile salmon and number of spawners in River Tornionjoki and River Simojoki’ (below).

Common whitefish (*Coregonus lavaretus*), sea trout (*Salmo trutta*) and perch (*Perca fluviatilis*) were not targets for sampling stock-related variables in 2014 (see Standard table III.E.2).

In 2012 Finland was granted a derogation for sampling stock-related variables on sprat due to less than 10 % of the Community share of the TAC (2010/93/EU). Because of this, there was no sampling of stock-related variables for sprat in 2014.

For pikeperch (*Sander lucioperca*), stock-related data was sampled in 2014 but as the age-reading process has not been completed the results will be presented in AR 2015 as well as the results of perch samples in 2013.

Herring (*Clupea harengus*)

The achieved sampling for stock-related variables in 2014 realised as follows:

In Central Baltic herring stock (ICES 25-29,32) sampling for length, weight and maturity at age realised with 89% partly due to fishing restrictions in the Gulf of Finland and northern Baltic Proper, and partly due to breakdown of fishing gear in the BIAS survey. Still the sampling achievement is very close to the 10% operational marginal. The sampling for sex-ratio realised only by 69%, partly because of the same reasons as explained before, but also due to record high year-class of 2014 in the few survey-samples, i.e. the sex was undeterminable for most of the fish, because they had not started to develop gonads.

In Bothnian Sea herring stock (ICES 30) length, weight and maturity at age the achievement was 116 % and in sex-ratio at age 102%.

In Bothnian Bay herring stock all stock-related values were within operational marginal (achievements from 93% to 110%).

Pikeperch (*Sander lucioperca*)

For pikeperch (*Sander lucioperca*), stock-related variables were sampled in 2014, but the age-reading process has not been completed and therefore the results will be presented in AR 2015. However, the achieved number of samples was 2028 and 97% of the planned number.

Perch (*Perca fluviatilis*)

According to our NP, no stock related data was collected from perch in 2014 (see Standard table III.E.2).

Salmon (*Salmo salar*)

Sampling for stock-related variables in the sea area

The number of salmon samples for stock-related variables in the SD's 22-31 was 2175 and 106% of the planned number. In the SD 32 the achievement was 478 and 96% of the planned number. Sampling has been carried out by self-sampling because landing sites are scattered widely.

As planned in the NP, altogether 1619 individual samples were analysed by the DNA-microsatellite techniques, in order to estimate the stock composition of the catches. From the coastal catches of the Gulf of Bothnia and Gulf of Finland 1142 salmon (planned 800) were analysed and from the Main Basin off-shore long-line fishery 477 salmon (planned 500) were analysed. The coastal samples were resampled from the pooled Finnish and Swedish catches and the Main Basin samples were from the Danish and Polish catches.

Monitoring of juvenile salmon and number of spawners in River Tornionjoki and River Simojoki

The table below indicates the realization of the data collection in the Finnish salmon rivers:

	River Simojoki	River Tornionjoki
Smolt trapping	Late May – late June, with smolt trap and smolt screw	Early June– early July
Electrofishing	August-September, 36 sites	August–September, 78 sites
Echo sounding	Mid-May - Late August	Late May – late August

Smolt trapping was successfully carried out in the river Simojoki at the same location as in previous years. Hundreds of smolts were marked and released at smolt screw upstream the smolt trap and recaptured at the smolt trap to estimate the catchability of the trap. Based on the smolt trapping data about 37 000 (CV 19%) wild salmon smolts migrated to the sea from the river Simojoki. The precision level of the estimate was similar to most other years. The estimate was successfully utilised together with the electrofishing data (below) as input for the Baltic salmon assessment (ICES 2015).

In the river Tornionjoki, smolt trapping was carried out successfully for sampling from smolt run, but the trapping had to be interrupted during the peak flood, which disabled estimation of the total run size. The total catch of smolts was 51 586, of which 4 951 smolts were used for the mark-recapture experiments to estimate the catchability of the trap. Based on these data 1.4 million (CV 26%) wild salmon smolts migrated to the sea during the trapping period. The high abundance estimate indicates that majority of the smolt run was covered by the smolt trapping, However, because trapping had to be interrupted for a fairly long period (11 days), the estimate was decided not to be utilised as an input for the Baltic salmon assessment, but instead the 2014 smolt run estimate for Tornionjoki had to be based only on the electrofishing data (ICES 2015).

Electrofishing was successfully carried out in 78 sites in the River Tornionjoki and in 36 sites in the River Simojoki to evaluate the density of juvenile salmon. In both rivers, the mean density of the age 0+ parr increased from 2013 and reached record high level, but the mean density of the older age groups halved from previous year.

To count salmon spawners in 2014, DIDSON (Dual-frequency IDentification SONar) echosounder units were mounted in the rivers Tornionjoki and Simojoki. In the both rivers, echo sounder units were mounted successfully and fish passage was monitored with few interruptions over the season of spawning migration of salmon. Total of 101 400 and 3 800 salmon sized targets migrated upstream through the sounder beams in the Tornionjoki and Simojoki, respectively. The data was used as the input in the ICES Baltic salmon assessment model (ICES 2015).

Sea trout (***Salmo trutta***)

As planned in our NP, sea trout was not sampled for stock-related variables in 2014 (see Standard table III.E.2).

Sprat (*Sprattus sprattus*)

In 2014 there was no sampling of stock-related variables for sprat. In 2012 Finland was granted an exemption for collection of age data for sprat due to less than 10 % (4 % in 2014) of the Community share of the TAC (2010/93/EU). Therefore also the Standard table III.E.3 has no information on collection of stock related variables in 2014.

III.E.2 Data quality: results and deviation from NP proposal

Precision estimates

Comprehensive information of the precision estimates is given in Annex II, which also summarizes the stock specific CV's of number of variables for each stock. As can be seen, the target CV's has been reached or almost reached in each stock for variables length and weight at age, which are the most important variables for stock assessment purposes. For variables sex ratio and maturity, target values have not been reached. Increasing the sample numbers (i.e. number of individuals to be measured) to reach the target values for all variables and all stocks would increase the cost of data collection and workload remarkably, but quality of the assessments would probably not improve correspondingly and a rather insignificant improvement would be expected. As the value of information is rather low for a higher accuracy of the sex ratio and maturity parameters, it has been seen unnecessary economically ineffective to allocate more resources in increasing the number of samples in the stocks concerned.

Herring (*Clupea harengus*)

The CV values of stock-related variables of herring are presented in Annex II.

Common whitefish (*Coregonus lavaretus*)

According to our NP, no stock-related data was collected from whitefish in 2014 (see Standard table III.E.2).

Perch (*Perca fluviatilis*)

According to our NP, stock related data was collected from perch in 2013 (see Standard table III.E.2), but as the age-reading process has not been completed, the results will be presented in AR 2015. No stock related data was collected from perch in 2014.

Pike-perch (*Sander lucioperca*)

According to our NP, stock related data was collected from pikeperch in 2014 (see Standard table III.E.2), but as the age-reading process has not been completed, the results will be presented in AR 2015.

Salmon (***Salmo salar***)

Sampling for stock-related variables in the sea area

The CV values in 2014 for length and weight measurements were on an acceptable level but the CV value for sex-ratio was high (8.9 %) in SD22-31 (see Annex II). In SD32 the CV values for weight and sex were on an acceptable level but the CV value for sex-ratio was high (9 %). Anyhow, the CV values were satisfactory for the salmon assessment purposes in SD22-31. The required precision level criterion might not be applicable for salmon because the sampling aims also to monitor the origin (stock specifically + wild/reared) of fish in the catch during the whole fishing season (i.e. spawning migration period at the coast). In the salmon stock assessment the mean weights per age have not been used for raising the salmon catches so far. For SD32 there is no analytical assessment so far.

Monitoring of juvenile salmon and number of spawners in River Tornionjoki and River Simojoki

The stock-based variables to be monitored for Baltic salmon in the spawning rivers differ greatly from the variables monitored for the other species and areas within III.E. In the case of salmon rivers, abundance and abundance indices are the variables of interest, and this information is also utilized in non-typical ways in stock assessment (ICES WGBAST). Therefore, the precision targets required for other monitoring within III.E are not applicable for river monitoring of salmon. ICES WGBAST has not set any specific precision requirements for the salmon river data. This is mainly due to two reasons:

1. The achieved precision is highly river specific and the precision achieved in one river simply cannot be achieved in another river due to extremely varying river conditions
2. ICES WGBAST salmon assessment allows effective utilization of data with varying precision, thus, there are no strict, well based rules to be set for the data quality.

In case of smolt trapping, the precision level of the smolt abundance estimates for the period covered by trapping was on the river specific typical level both in the River Tornionjoki (CV was 26%) and in the River Simojoki (CV was 19 %).

In case of index of abundance of parr (electrofishing data), the precision of monitoring is related to the number of sampling sites and this uncertainty is incorporated by the ICES WGBAST. In the rivers Tornionjoki and Simojoki the numbers of sampling sites are amongst the highest in the Baltic rivers.

Thus far, no procedure has been established for estimating the precision on the number of ascending individuals (echo sounding data). There are, however, plans to gradually develop the study design and analysis of data to allow for estimation of the precision.

Except for the smolt run estimate of Tornionjoki, data from the rivers Tornionjoki and Simojoki were successfully utilised as input for the Baltic salmon assessment (ICES 2015).

Sea trout (***Salmo trutta***)

Based on NP, no stock-related data was collected from sea trout in 2014 (see Standard table III.E.2).

Sprat (*Sprattus sprattus*)

In 2014 there was no sampling of stock-related variables for sprat. In 2012 Finland was granted an exemption for collection of age data for sprat due to less than 10 % of the Community share of the TAC (2010/93/EU). Therefore also the Standard table III.E.3 has no information on collection of stock related variables in 2014.

III.E.3 Follow-up of regional and international recommendations

There were no direct or relevant recommendations from LM 2013 or RCM Baltic 2013 for the Finnish data collection on stock-related variables.

III.E.4 Actions to avoid shortfalls

III.F Transversal variables - Baltic Sea (ICES areas III b-d)

III.F.1 Capacity

III.F.1.1 Achievements: Results and deviation from NP proposal

The number and characters of the vessels according to segments is available in fishing vessel register. All vessels, even non-active vessels, and auxiliary vessels are included in the vessel register. The maintenance and continuous update of the register is allocated regionally to the Centres for Economic Development, Transport and the Environment (ELY centres) and to the provincial government of the Åland islands. The fleet register data is merged with the log-book and coastal fishery data. The latter two data contain complete information on catches, effort and gears for the entire fleet. For more details, see Effort and landings.

III.F.1.2 Data quality: results and deviation from NP proposal

Information was complete.

III.F.1.3 Actions to avoid shortfalls

No shortfalls

III.F.2 Effort

III.F.2.1 Achievements: results and deviation from NP proposal

Fishing effort data will be obtained besides the collection of catch data. Target population of fishing effort data consists of all the vessels that are used in commercial fishing and, of all commercial fishermen, who have a personal reporting obligation. Fishing effort will be collected by fishing occasion-based reports (logbooks) and so called coastal fishery reports for vessels <10m. Fishing effort will be collected according to categorisation corresponding to the regulation.

Preliminary data for the reference year will be available in January-March next year. Final data will be available correspondingly by June.

III.F.2.2 Data quality: results and deviation from NP proposal

The data is basically complete and required quality will be achieved.

The procedure of catch/landings and effort data compilation contains following stages:

1. The raw data is physically collected to LUKE from fisheries control system maintained by regional authorities.
2. The data is checked to find out logical errors, and corrected accordingly. Yearly number of the catch/landings reports is on level of 20 000.
3. The data is checked with special emphasis on the discards reporting. Especially in the salmon fishery, where seals eat a meaningful part of the catch, the fishermen often estimate the discards more in qualitative terms than with numeric data. This causes a lot of manual checking.
4. The partial non-response (of single variables in observation level; also called as item non-response) is evaluated, and corrected by statistical imputation methods. It should be noted, that errors or missing information are quite common in effort data, especially in case of non-quota species.
5. The representativeness of data is evaluated against the target population. The effects of non-response are corrected by statistical estimation. For that, the data is post stratified.
6. The confidence levels (error term) of the estimates are calculated with respect to the non-response.
7. The needed tabulation and cross tabulation with background variables are calculated.
8. The principles, hypotheses and procedures are documented and the data is harmonized for the submission to the database.
9. The original data forms are returned to the regional fisheries control authorities.

III.F.2.3 Follow-up of regional and international recommendations

There were no direct or relevant recommendations from LM 2013 or RCM Baltic 2013 for the Finnish data collection on transversal variables.

III.F.2.4 Actions to avoid shortfalls

No shortfalls

III.F.3 Landings

III.F.3.1 Achievements: results and deviation from NP proposal

Target population of catch and landings data consists of all the vessels used in commercial fishing and, of all the fishermen who have a personal reporting obligation. This means that the data is basically complete (census), also for <10m vessels. Catches and landings will be reported according to DCF.

Catches and landings of vessels >10 meters are collected by fishing occasion-based reports (logbooks). Catches and landings of vessels <10 meters (so called coastal fishery) will be collected by monthly reports. In addition, catches and landings of quota species in coastal fishery will be collected by fishing occasion-based reports. The landings of Finnish vessels abroad, as well as foreign vessel landings to Finnish ports are surveyed by logbooks, landings declarations and sales notes, and by the crosschecking of the different data. There is a landings data exchange between the relevant foreign authorities.

The conversion factors are presented in Standard table III.F.2, and they follow the ones used in fisheries control.

Yearly data on catches and landings will be available during the 2rd quarter of the year that follows the referred statistical year. Preliminary data for the fish stock assessment is available in the 1st quarter.

III.F.3.2 Data quality: results and deviation from NP proposal

The data is basically complete and required precision and confidence levels will be achieved.

For the data qualification procedure refer to paragraph “Effort”.

III.F.3.3 Follow-up of regional and international recommendations

There were no direct or relevant recommendations from LM 2013 or RCM Baltic 2013 for the Finnish data collection on transversal variables.

III.F.3.4 Actions to avoid shortfalls

No shortfalls

III.G Research surveys at sea

III.G.1 Achievements: results and deviation from NP proposal

Baltic International Acoustic Survey (BIAS). In 2014, the BIAS survey was arranged second time as a national survey on chartered R/V ARANDA, covering whole area within the remit of Finland. Because of this, the preliminary transect plans presented in our NP were not valid, and hence a relevant track chart and list of intended trawl stations for this survey are presented in Figure 1.

Since 2012, Sweden has not contributed to vessel costs of the BIAS survey in SD 30. However, as in 2014 two Swedish technicians took part in the whole survey (also in SD's 29 and 32). Their participation and help was invaluable, because now we have to arrange a full research team (9 persons instead of usual 2-4) and even a trawling crew (6 persons) for this survey.

BIAS-SD 30. As planned, the survey in the Bothnian Sea (BIAS survey in SD 30) was carried out as a national survey on R/V ARANDA.

During the survey in the Bothnian Sea (SD 30), 20 rectangles were covered with 1156 NM of echo-integration track (Fig. x). Due to unfavourable weather conditions and technical problems, the number of achieved control hauls was 25 of the 33 planned in SD 30.

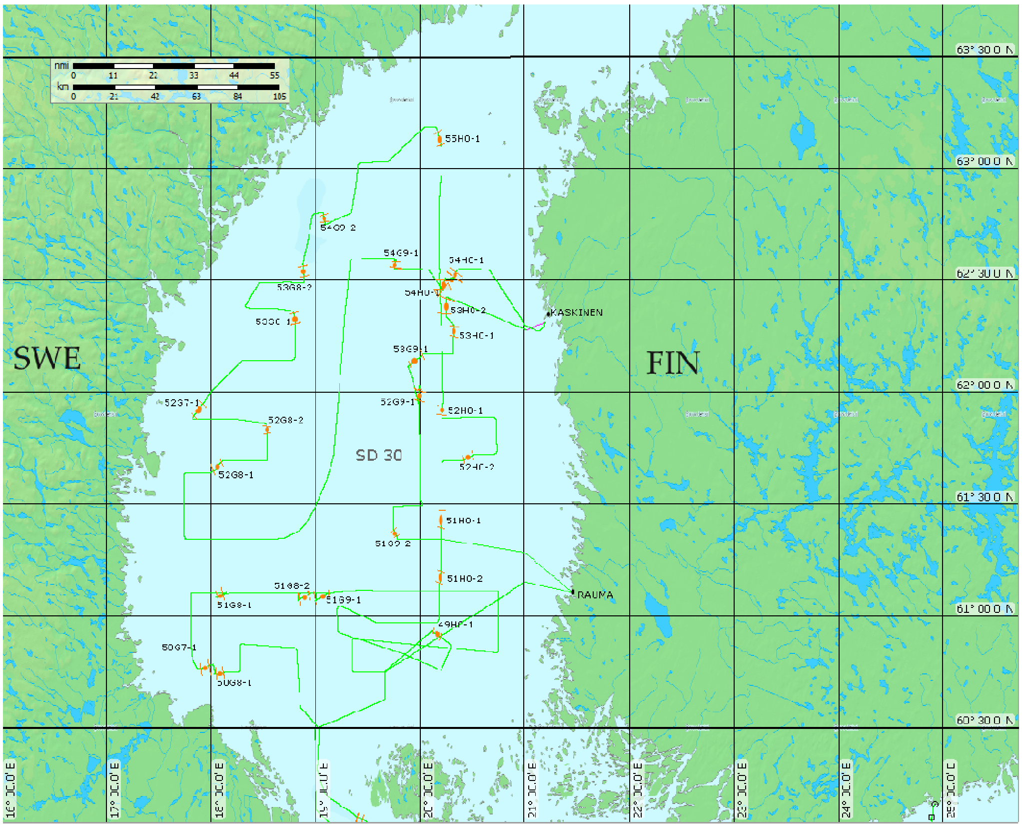

Figure 1. Realised acoustic transects of herring acoustic survey in SD 30 carried out by R/V ARANDA in September-October 2014.

BIAS-SD 29&32. In 2014, the survey in SD's 29 and 32 was carried out on R/V ARANDA, deviating from years 2006-2012, when it was carried out as a joint Estonian-Finnish survey on R/V BALTICA.

During the survey, 7 statistical rectangles were covered with 477 NM of echo-integration track (Fig. 2), and 4 trawl hauls were realised (planned 14). Several rectangles in the Gulf of Finland were split between Finland and Estonia so only one trawl haul was done in those rectangles. Due to technical problems and unfavourable weather conditions, the number of achieved control hauls was only 4 of the 14 planned in SD's 29 and 32.

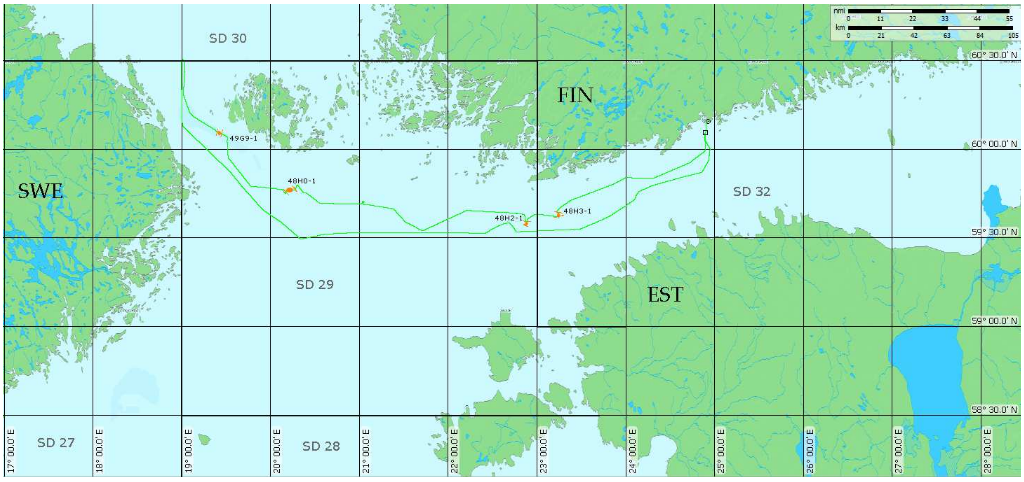

Figure 2. Realised acoustic transects of herring acoustic survey in in SD 29 and SD 32 carried out by R/V ARANDA in September-October 2014.

Baltic International Trawl Survey (BITS). One Finnish technician took part in the survey in March and one Finnish scientist in November on R/V DANA. The detailed description of those surveys will be presented in the Danish Annual Report. Attendance to the survey in March (BITS Q1), instead of November (BITS Q4) is a deviation to previous years, but this change did not have any financial implications.

III.G.2 Data quality: results and deviation from NP proposal

Baltic International Acoustic Survey (BIAS). Despite the minor technical problems, the data was used in the stock assessment of herring in SD 30 by the WGBFAS, as recommended by the WGBIFS (ICES, 2015).

III.G.3 Follow-up of regional and international recommendations

There were no direct or relevant recommendations from LM 2013 or RCM Baltic 2013 for the Finnish data collection on research surveys at sea.

III.G.4 Actions to avoid shortfalls

Baltic International Acoustic Survey (BIAS). Some technical improvements, especially with the trawling gear will take place before the next survey. During the years 2016-2019, a complete renovation of R/V ARANDA will take place, which should elongate her life-span at least by 15 years.

IV Module of the evaluation of the economic situation of the aquaculture and processing industry

IV.A Collection of data concerning the aquaculture

IV.A.1 Achievements: results and deviation from NP proposal

Aquaculture production has a significant role in the Finnish fishery sector. Aquaculture production dominates the fishery market in the primary production and also as a raw material supply for processing industry. In 2013, altogether 310 enterprises engaged in fish farming (with natural food ponds included) were in operation. Of these, 88 farms operated in food fish production and 67 farms were specialised in fry production. Some firms have both production lines. The number of farmers with natural food ponds was 197. However, only a small part of these firms have aquaculture as their main activity.

Food fish is produced mostly at the marine farms but also in inland farms. These firms have traditionally concentrated on rainbow trout, but during the past years increasingly on European whitefish. The food fish production in 2013 was 13 600 tons. Rainbow trout is by far most important species with about 90% in volume and 84% in value of food fish production.

Some of the food fish firms have integrated fry production but there are also specialised juvenile fish producers. There are two main production methods in juvenile production: tanks and natural food ponds. Hatcheries and nurseries together with natural food ponds produce numerous fish species for on-growing and stocking purposes.

There are also few farms producing crayfish fry, but the number of these farms is limited and therefore it is not possible to have separate segment.

Segmentation

The Finnish aquaculture production was divided into four main segments:

- Cages (marine aquaculture, food fish production)
- On growing (inland aquaculture, mainly food fish production)
- Hatcheries and nurseries (juvenile and fry production, including natural food ponds)
- Combined (food fish and juvenile production)

Marine aquaculture regards production in cages. Most marine farms are specialised in rainbow trout production, some produce also European whitefish. On growing segment includes both food fish production and fish for further farming. Inland food fish production is done mainly in raceways, but also in cages in lakes. Some producers have integrated production of fry with food fish production. This group forms the combined segment. Natural food pond production is very heterogeneous and fragmented. Most of the production is considered small scale and subsidiary business mainly for agriculture. Only commercial natural food pond production is considered and they are reported together with the hatcheries and nurseries.

Juvenile production is important part of the sector. It produces around one third of the sector total in value. The major part of the juvenile production in number is released to natural waters to enhance the fish production.

Data sources

Economic data collection concerning the aquaculture was carried as a register approach that combines information from several data sources. Main sources are production survey (including cost data) conducted by Natural Resources Institute Finland (former Finnish Game and Fisheries Research Institute) and Structural business and financial statement statistics of Statistic Finland (SF).

Target population

The target population follows the definition in the DCF. Target population was composed of enterprises in the Business Register with aquaculture as their main activity. The final target population consisted of 167 commercial enterprises in 2013. This target frame was supplemented with information of the production survey that was collected from all farms in the Fish farm register of MAF. With the production survey information, the firms were segmented according to their main activity.

Sampling and data collection

Economic data collection was conducted with hierarchical multi-stage survey. The production survey was targeted to entire population. In the production survey we enquired other business activities, employment, cost of raw material and feed, production value and methods and production per species. This data was used to divide firms into segments by fish farming techniques.

Financial statements were available in Statistics Finland (SF) for all firms in the Business Register with aquaculture as their main activity. Primary sources of financial statements data in Statistics Finland are direct inquiries and business taxation material supplemented by Business Register data. Data is based on corporate balance sheet and profit and loss account data. Statistics Finland checks for the validity of the data. Any missing data was estimated within stratum. Financial data gives a reliable estimate for the cost structure as a whole, but the disaggregation of cost items does not follow the content in the regulation. Therefore some additional data on the cost structure is queried in the production survey.

Estimation

Cost and earnings estimates were done by design-based and model assisted regression and ratio estimation. The cost variables were estimated with ratio estimation from financial statements. Production survey was collected exhaustively from the producers. Any missing information was estimated by stratum.

Employment was estimated based on the FTE and number of employees from the Structural Business Statistics of Statistics Finland. Opportunity costs for unpaid labour were estimated by Statistics Finland based on annual amount of unpaid work and the average wage of the enterprise.

Reference year

The reference year of economic data collection is the preceding year. Preliminary financial statements data are available on the 4th quarter after the reference year. Therefore information of the economic situation of aquaculture sector will be provided earliest one year after the period investigated.

IV.A.2 Data quality: results and deviation from NP proposal

Production data (from production survey) covers all firms in the target population (167 firms). Financial statements are collected for all firms having aquaculture as the main activity with income over a threshold level of € 10 846 in the database of Statistics Finland (SF) on Financial statements of Industry and Business register. In 2013 there were 116 firms with financial statements. These financial statements were raised to the target population by segment with regression estimation using value of production.

The estimates for income and most of the operating costs are precise. However CVs of the estimates for net capital costs and net investments were high by nature. This is due to having a high variation of these net values and the average being close to zero.

IV.A.3 Follow-up of regional and international recommendations

There were no direct or relevant recommendations from LM 2013 or RCM Baltic 2013 for the Finnish data collection on aquaculture variables.

IV.A.4 Actions to avoid shortfalls

No shortfalls observed.

IV.B Collection of data concerning the processing industry

IV.B.1 Achievements: results and deviation from NP proposal

Data sources

Economic data collection concerning the processing industry was carried as a register approach that combines information from several data sources. The main data sources are Structural business and financial statement statistics and Business Register of Statistics Finland and survey information on processing compiled by Natural Resources Institute Finland (former Finnish Game and Fisheries Research Institute (FGFRI)).

Target frame population

The target population follows the definition in the DCF: all fish processing firms that have fish processing as their main activity. All operational firms, with fish processing as their main branch, should be listed in the Business Register of Statistics Finland. This target frame is complemented with information of the production survey.

Sampling and data collection

Economic data collection was based on Structural business and financial statement statistics data of Statistics Finland. The production survey was carried out to update the target frame population and to collect data on employment. The production survey is collected exhaustively (=census). In this biennial survey (last reference year 2013) we enquire other business activities, employment, production methods and production per species.

Financial statements were available in SF for all firms in Business Register with fish processing as their main activity (=census). Primary sources of financial statements data in Structural business and financial statement statistics of Statistics Finland are direct inquiries and business taxation material supplemented by Business Register data. Data is based on corporate balance sheet and profit and loss account data. Data in Structural business and financial statement statistics covers all cost items in the DCF.

Estimation

Financial statements are available for all firms in the Business Register having fish processing as the main activity. Statistics Finland checks for the validity of the data. Any missing data is estimated.

Capital costs were the actual costs (net) paid. Total value of assets was collected (as Capital value) from the balance sheets.

Employment was estimated based on the FTE and number of employees from the Structural business and financial statement statistics of Statistics Finland. Opportunity costs for unpaid labour were estimated based on annual amount of unpaid work and the average wage of the enterprise.

Reference year

The reference year of economic data collection is the preceding year. Preliminary financial statements data are available on the 4th quarter after the reference year. Therefore information of the economic situation of processing sector will be provided no earlier than one year after the period investigated.

IV.B.2 Data quality: results and deviation from NP proposal

Financial statements are available for all fish processing firms in Structural Business Statistics. Missing information concerning employment was complemented by information from the production survey. Also production survey covers all processing firms.

IV.B.3 Follow-up of regional and international recommendations

There were no direct or relevant recommendations from LM 2013 or RCM Baltic 2013 for the Finnish data collection on processing industry variables.

IV.B.4 Actions to avoid shortfalls

No shortfalls observed.

V Module of evaluation of the effects of the fishing sector on the marine ecosystem

V.A Achievements: results and deviation from NP proposal

Data for ecosystem indicators 1, 2, 3 and 4 are collected on BIAS survey on chartered R/V ARANDA, covering whole area within the remit of Finland (see Standard table III.G.1). Length measurements are made from a sub-sample.

VMS data (indicators 5, 6, and 7, Standard table V 1) for Finnish fisheries is collected and used by Finnish fisheries control system. The number of vessels included in the VMS is about fifty and it is increasing all the time. In some fleet segments there is only one vessel. Thus the expected temporal and spatial resolution of the VMS data available to end users will be relatively large.

Discarding rates of the commercially important species (indicator 8) are collected by the logbooks and coastal fishery forms [landings (net catch) + discards = catch (gross catch)] and available from the central control register on commercial fishery.

Data for fuel efficiency of fish capture (indicator 9): The value of the catches was estimated on the basis of logbooks/landings declarations and fish price statistics. The fuel costs for each fleet segment are collected.

V.B Actions to avoid shortfalls

No shortfalls.

VI Module for management and use of the data

VI.A Achievements: results and deviation from NP proposal

The data was delivered to various end-users according to what was planned and used in producing the ICES advice and in relevant scientific work. The estimation of the biological parameters followed the standard ICES practises. Data sets were produced and validated according to ICES instructions. Achieved data transmission is presented in Standard table VI.1. The datasets are prepared by the FGFRI according to agreed formats and procedures and handed over to concerned stock-coordinators, uploaded to the InterCatch as well as presented in relevant working groups. The main users of the data collected by Finland are the ICES WG's, especially WGBAST and WGBFAS.

The small size and low number of vessels and enterprises in the Finnish fisheries sector caused problems when answering several data calls. Due to confidentiality and privacy protection reasons we had to aggregate the data to higher level than asked in the data call.

The estimates based on transversal variables are compiled with respect to the Code of practice of European Statistics.

The development of the national database continued according to the NP. In 2014, the database of biological commercial samples was renewed. Sampling data from acoustic survey was added to the database.

Related to economic data, an electronic inquiry was taken into use for survey on processing industry, and the responses for the inquiry were directly added to the database.

VI.B Actions to avoid shortfalls

No shortfalls.

VII Follow-up of STECF recommendations

There were no STECF Plenary recommendations addressed to MS relating to data collection in the 2013 STECF Plenary meetings.

VIII List of acronyms and abbreviations

ACFM	**Advisory Committee on Fisheries Management**
ACOM	**ICES Advisory Committee**
AR 2014	**Finnish Annual Report 2014 (this report)**
BIAS	**Baltic International Acoustic Survey**
BITS	**Baltic International Trawl Survey**
COM	**EU Commision**
DCF	**Data Collection Framework i.e. Council Regulation (EC) N° 199/2008, Commission Regulation (EC) N° 655/2008 and Commission Decision N° 2010/93/EU)**
DCR	**Data collection regulation i.e. (“old DCR” 1639/2001, 1584/2004, etc.; “new DCR” Council Regulation (EC) N° 199/2008, Commission Regulation (EC) N° 655/2008 and Commission Decision N° 2008/949/EC)**
FGFRI	**Finnish Game and Fisheries Research Institute**
ICES	**International Council for the Exploration of the Sea**
Luke	**Natural Resources Institute Finland**
MAF	**Ministry of Agriculture and Forestry**
NP 2008	**Finnish National Programme 2008**
NP 2009-2010	**Finnish National Programme 2009-2010**
NP 2011-2013	**Finnish National Programme 2011-2013**
NP 2014-2016	**Finnish National Programme 2014-2016**
SD	**ICES Sub-division**
SF	**Statistics Finland**
STECF	**Scientific, Technical and Economic Committee for Fisheries**
WGBAST	**ICES Working Group on Baltic Salmon and Trout**
WGBFAS	**ICES Working Group on Baltic Fisheries Assessment**
WGBIFS	**ICES Working Group on Baltic International Fish Surveys**

IX Comments, suggestions and reflections

None

X References

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XI Annexes

Annex I Bilateral agreements with Sweden, Poland and Denmark

Bilateral Agreement between Finnish Game and Fisheries Research Institute (FGFRI), Finland* and Swedish Agency of Marine and Water Management, Sweden, for the collection of biological samples and cooperation during Baltic International Acoustic Survey (BIAS) in accordance with EC Regulation 665/2008, laying down detailed rules for the application of Council Regulation (EC) 199/2008, and its Commission Decision 2010/93/EC.

*** The Finnish Game and Fisheries Research Institute will merge with MTT Agrifood Research Finland and the Finnish Forest Research Institute on 1 January 2015, to form Natural Resources Institute Finland (Luke).**

This agreement has been established between Finland and Sweden to cooperate on the collection of fisheries data regarding the following issues:

1. Herring fished by Finnish flagged vessels (OTM_SPF_16-104_0_0) are landed in Sweden in such an amount that a bilateral agreement has to be established (RCM Baltic 2014) for NP 2014-2016
2. Sharing of staff within the BIAS survey in the Baltic areas SD30 and 29N for NP 2014-2016
3. Collection of salmon catch samples and genetic analysis for NP 2014-2016

Agreements:

1. It has been agreed that Swedish University of Agricultural Sciences, Department of Aquatic Resources (SLU-aqua) will sample Finnish landings of herring to Sweden, since considerable share (17 % i.e. 16 800 tonnes in 2013) of the total Finnish landings of herring fished in SD30 is landed in Sweden.

2. It has been agreed that SLU-aqua will send yearly two technicians for fish sampling to the Finnish part of the BIAS survey. Age reading of 50 % of the otoliths sampled during BIAS SD30 will be conducted at SLU-aqua. The associated costs will be covered within the Swedish National Programme for 2014-2016. In case Sweden is not fulfilling the DCF conditions for exemption of the biological sampling on herring in SD30, this agreement will be reviewed and amended in bilateral negotiations.

3. It has been agreed that vessels fishing for salmon, operating in the Baltic Sea and land for first sale into Sweden, will be sampled as part of the Swedish National Programme under the requirements of the EC Data Collection Framework (199/2008). The eventual additional sampling costs will be covered within the Swedish National Sampling Programme for 2014- 2016.

   The genetic analysis of 200-300 Swedish salmon samples per year will be carried out as part of the Finnish National Programme under the requirements of the EC Data Collection Framework (199/2008). The costs of genetic analysis will be covered within the Finnish National Programme for 2014- 2016.

Description of sampling for each agreement:

1. SLU-aqua will lengthmeasure 300 randomly selected individuals per sample, maximum 14 samples per year Finland is sampling for age and the Finnish ALK will be used.

2. Sampling onboard BIAS will be done according to the BIAS manual.

3. SLU-aqua will deliver the collected salmon samples (part of the scales of each sample and associated data) to FGFRI for genetic analysis.

Data responsibility for each agreement:

1. SLU-aqua is responsible for submitting the length distribution data to FGFRI. FGFRI is responsible for incorporating the data in the Finnish dataset and deliver the data to the relevant ICES Expert Groups, and to the EC under the requirements of its Data Collection Framework.

2. FGFRI is responsible for submitting the data from BIAS conducted in SD30 to relevant end-user in the requested format.

3. The FGFRI is responsible for delivering the results of genetic analysis to SLU-aqua, to the relevant ICES Expert Groups, and to the EC under the requirements of its Data Collection Framework.

Contact persons:

In FGFRI;	In SLU-aqua;
agreement 1: jukka.ponni@rktl.fi	agreement 1: Maria.Hansson@slu.se
agreement 2: timo.myllyla@rktl.fi	agreement 2: Niklas.Larson@slu.se
agreement 3: tapani.pakarinen@rktl.fi	agreement 3: Johan.Ostergren@slu.se

Signatures:

Finnish Game and Fisheries Research Institute	Swedish Agency for Marine and Water Management
Riitta Rahkonen	Anna Hasslow
....	....
Riitta Rahkonen	Anna Hasslow
Head of Unit, Research and Expert Services	National Correspondent Sweden

Date: 14 November, 2014

Bilateral Agreement between the Finnish Game and Fisheries Research Institute and National Marine Fisheries Research Institute (Poland) for the collection and genetic analysis of salmon catch samples in accordance with EC Regulation 665/2008, laying down detailed rules for the application of Council Regulation (EC) 199/2008, and its Commission Decision 2010/74/EU2008/949/EC

Agreement:

Salmon fishing vessels, which operate in the Baltic Sea Main Basin and land for first sale into Poland, will be sampled as part of the Polish National Programme under the requirements of the EC Data Collection Framework (199/2008). The eventual additional sampling costs will be covered within the Polish National Sampling Programme for 2014 - 2016.

Based on this agreement, the National Marine Fisheries Research Institute (NMFRI) will deliver the collected salmon samples (part of the scales of each sample and associated data) to the Finnish Game and Fisheries Research Institute (FGRFI) for genetic analysis. The genetic analysis will be carried out as part of the Finnish National Programme under the requirements of the EC Data Collection Framework (199/2008). The costs of genetic analysis will be covered within the Finnish National Sampling Programme for 2014 - 2016.

Description of sampling:

The sampling of landings will be carried out in accordance with the Polish National Sampling Programme.

Sampling Intensity:

Levels and coverage as agreed at the annual meeting of RCM Baltic based on actual possibilities.

Data responsibility:

The FGFRI will deliver the results of genetic analysis to the NMFRI, as well as to the relevant ICES Expert Groups, and to the EC under the requirements of its Data Collection Framework.

The NMFRI reserves rights to include their staff in all publications made with use of data collected within that agreement.

Contact persons: In FGFRI, Tapani Pakarinen
In NMFRI, Wojciech Pelczarski

Signatures:

Finnish Game and Fisheries Research Institute

Riitta Rahkonen, Research Director
ON BEHALF VEIJO PRUUKI

Date: Helsinki 11.9.2013

National Marine Fisheries Research Institute

Iwona Psuty, Deputy Director (Research)

Date: 15.08.2013

Bilateral Agreement between the Finnish Game and Fisheries Research Institute and National Institute of Aquatic Resources (Denmark) for the collection and genetic analysis of salmon catch samples in accordance with EC Regulation 665/2008, laying down detailed rules for the application of Council Regulation (EC) 199/2008, and its Commission Decision 2010/74/EU

Agreement:

Salmon fishing vessels, which operate in the Baltic Sea Main Basin and land for first sale into Denmark, will be sampled as part of the Danish National Programme under the requirements of the EC Data Collection Framework (199/2008). The eventual additional sampling costs will be covered within the Danish National Sampling Programme for 2014-2016.

Based on this agreement, the National Institute of Aquatic Resources (DTU Aqua) will deliver the collected salmon samples (part of the scales of each sample and associated data) to the Finnish Game and Fisheries Research Institute (FGRFI) for the genetic analysis. The genetic analysis will be carried out as part of the Finnish National Programme under the requirements of the EC Data Collection Framework (199/2008). The costs of genetic analysis will be covered within the Finnish National Sampling Programme for 2014-2016.

Description of sampling:

The sampling of landings will be carried out in accordance with the Danish National Sampling Programme.

Sampling Intensity:

Levels and coverage as agreed at the annual meeting of RCM Baltic.

Data responsibility:

The FGFRI will deliver the results of genetic analysis to the DTU Aqua, as well as to the relevant ICES Expert Groups, and to the EC under the requirements of its Data Collection Framework.

Contact persons: In FGFRI, Tapani Pakarinen
In DTU Aqua, Frank-Ivan Hansen

Signatures:

Finnish Game and Fisheries Research Institute
Riitta Rahkonen, Research Director

Date: ____________________________

National Institute of Aquatic Resources
Jörgen Dalskov, National Correspondent

Date: ____________________________

Annex II

Precision estimates for biological metier-related and stock-related variables

Biometrical Report
18 June 2015

Ministry of Agriculture and Forestry
Natural Resources Institute Finland

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Table 1. The mean and CV of length, weight, maturity and sex of Baltic herring in ICES subdivisions 29 - 32

Year	SD	Parameter	Mean	CV
2014	29,32	length	146.7144	0.9653584
	30	length	160.12342	0.9953773
	31	length	147.72105	1.0338297
	29,32	weight	22.508168	3.5602977
	30	weight	33.337669	3.6552187
	31	weight	22.731688	3.1493939
	29,32	sex	50.373895	9.7462826
	30	sex	51.946658	9.5566981
	31	sex	48.819357	14.085326
	29,32	maturity	75.389424	5.4277817
	30	maturity	70.600503	4.914873
	31	maturity	71.910165	7.2388139

Table 1b. Length of Baltic herring in ICES subdivisions 29 - 32

Year	N	Mean	Std	CV
2014	33061	152.00301	0.1546483	0.1017403

Ageslice 9 means 9 years and older

Table 2. Length at age of Baltic herring in ICES subdivisions 29 and 32

Year	Ageslice	N	Mean	Std	CV
2014	1	318	106	1.11	1.0
	2	256	135	0.78	0.6
	3	126	151	1.16	0.8
	4	43	156	1.53	1.0
	5	134	164	1.56	1.0
	6	125	175	1.94	1.1
	7	114	179	1.63	0.9
	8	39	193	3.86	2.0
	9	75	193	3.10	1.6

Ageslice 9 means 9 years and older

Program: T_HER_length_CV_2932_14.sas **Date: 18JUN15:09:30**

Table 3. Weight at age of Baltic herring in ICES subdivisions 29 and 32

Year	Ageslice	N	Mean	Std	CV
2014	1	318	8	0.27	3.3
	2	256	16	0.30	1.9
	3	126	21	0.57	2.7
	4	43	24	0.76	3.2
	5	134	28	1.15	4.1
	6	125	34	1.40	4.1
	7	114	35	1.17	3.4
	8	39	46	2.93	6.4
	9	75	48	4.20	8.7

Ageslice 9 means 9 years and older

Program: T_HER_weight_CV_2932_14.sas **Date: 18JUN15:09:34**

Table 4. Maturity at age of Baltic herring in ICES subdivisions 29 and 32

Year	Ageslice	N	Mean	Std	CV
2014	1	202	11	2.08	18.3
	2	152	89	2.45	2.7
	3	82	100	0.00	0.0
	4	28	97	3.57	3.7
	5	94	100	0.00	0.0
	6	95	100	0.00	0.0
	7	68	97	2.10	2.2
	8	30	100	0.00	0.0
	9	54	100	0.00	0.0

Ageslice 9 means 9 years and older

Program: T_HER_matur_CV_2932_14.sas **Date: 18JUN15:09:31**

Table 5. Sex at age of Baltic herring in ICES subdivisions 29 and 32

Year	Ageslice	N	Mean	Std	CV
2014	1	243	49	3.64	7.4
	2	245	48	3.64	7.6
	3	123	57	5.44	9.6
	4	43	52	8.21	15.9
	5	129	45	4.89	10.9
	6	122	59	5.09	8.6
	7	111	48	5.54	11.4
	8	38	55	9.30	16.9
	9	74	47	6.97	14.9

Ageslice 9 means 9 years and older

Program: T_HER_sex_CV_2932_14.sas **Date: 18JUN15:09:33**

Table 6. Length at age of Baltic herring in ICES subdivision 30

Year	Ageslice	N	Mean	Std	CV
2014	1	253	110	1.23	1.1
	2	139	140	1.02	0.7
	3	92	159	1.23	0.8
	4	27	170	2.17	1.3
	5	43	172	1.67	1.0
	6	47	183	2.10	1.1
	7	37	190	4.20	2.2
	8	39	193	3.42	1.8
	9	234	208	1.53	0.7

Ageslice 9 means 9 years and older

Program: T_HER_length_CV_30_14.sas **Date: 18JUN15:09:29**

Table 7. Weight at age of Baltic herring in ICES subdivision 30

Year	Ageslice	N	Mean	Std	CV
2014	1	253	9	0.30	3.4
	2	139	18	0.41	2.4
	3	92	26	0.63	2.5
	4	27	31	1.03	3.3
	5	43	32	1.00	3.1
	6	47	42	1.44	3.5
	7	37	48	5.04	10.6
	8	39	53	5.61	10.5
	9	234	65	2.02	3.1

Ageslice 9 means 9 years and older

Program: T_HER_weight_CV_30_14.sas **Date: 18JUN15:09:33**

Table 8. Maturity at age of Baltic herring in ICES subdivision 30

Year	Ageslice	N	Mean	Std	CV
2014	1	253	21	2.34	11.0
	2	139	74	3.46	4.7
	3	92	96	2.12	2.2
	4	27	100	0.00	0.0
	5	43	100	0.00	0.0
	6	47	98	2.14	2.2
	7	36	97	2.68	2.8
	8	39	95	3.46	3.6
	9	232	90	1.89	2.1

Ageslice 9 means 9 years and older

Program: T_HER_matur_CV_30_14.sas **Date: 18JUN15:09:30**

Table 9. Sex at age of Baltic herring in ICES subdivision 30

Year	Ageslice	N	Mean	Std	CV
2014	1	198	61	3.65	6.0
	2	139	49	4.23	8.6
	3	90	46	5.35	11.7
	4	27	45	9.36	20.9
	5	43	57	7.62	13.3
	6	47	48	7.54	15.8
	7	35	59	8.13	13.8
	8	38	47	8.34	17.6
	9	217	48	3.35	6.9

Ageslice 9 means 9 years and older

Table 10. Length at age of Baltic herring in ICES subdivision 31

Year	Ageslice	N	Mean	Std	CV
2014	1	156	110	1.53	1.4
	2	119	141	0.93	0.7
	3	84	159	1.19	0.7
	4	61	164	1.10	0.7
	5	55	174	1.40	0.8
	6	12	172	6.94	4.0
	7	17	181	4.45	2.5
	8	40	188	1.37	0.7
	9	18	195	1.99	1.0

Ageslice 9 means 9 years and older

Program: T_HER_length_CV_31_14.sas **Date: 18JUN15:09:30**

Table 11. Weight at age of Baltic herring in ICES subdivision 31

Year	Ageslice	N	Mean	Std	CV
2014	1	156	9	0.37	3.9
	2	119	18	0.39	2.1
	3	84	25	0.62	2.4
	4	61	28	0.59	2.1
	5	55	33	0.86	2.6
	6	12	33	3.57	10.7
	7	17	36	2.25	6.2
	8	40	42	1.22	2.9
	9	18	46	1.86	4.0

Ageslice 9 means 9 years and older

Program: T_HER_weight_CV_31_14.sas **Date: 18JUN15:09:33**

Table 12. Maturity at age of Baltic herring in ICES subdivision 31

Year	Ageslice	N	Mean	Std	CV
2014	1	156	12	2.47	21.4
	2	119	86	3.08	3.6
	3	84	99	1.19	1.2
	4	61	100	0.00	0.0
	5	55	100	0.00	0.0
	6	12	92	7.97	8.7
	7	17	94	5.74	6.1
	8	40	100	0.00	0.0
	9	18	100	0.00	0.0

Ageslice 9 means 9 years and older

Program: T_HER_matur_CV_31_14.sas **Date: 18JUN15:09:31**

Table 13. Sex at age of Baltic herring in ICES subdivision 31

Year	Ageslice	N	Mean	Std	CV
2014	1	101	55	4.82	8.8
	2	119	53	4.71	8.9
	3	84	52	5.65	10.8
	4	61	49	6.66	13.6
	5	55	36	6.45	18.1
	6	11	63	15.17	23.9
	7	16	29	12.06	41.7
	8	40	48	8.20	17.0
	9	18	22	10.01	45.8

Ageslice 9 means 9 years and older

Table 14. Length of Sprat in ICES subdivisions 29 - 31

Year	N	Mean	Std	CV
2014	9244	118.22151	0.1460664	0.1235531

Table 15. Length of Perch

Year	N	Mean	CV
2014	1753	269.38905	0.3106043

Program: T_PER_length_CV_14.sas **Date: 18JUN15:09:34**

Table 16. Length of discarded Perch

Year	N	Mean	CV
2014	181	197.70166	1.5538432

Program: T_PER_length_CV_14_disc.sas **Date: 18JUN15:09:34**

Table 18. Length of discarded Pike-perch

Year	N	Mean	CV
2014	499	325.19639	0.6307577

Program: T_SAN_length_CV_14_disc.sas **Date: 18JUN15:09:38**

Table 18. Length of discarded Pike-perch

Year	N	Mean	CV
2014	499	325.19639	0.6307577

Program: T_SAN_length_CV_14_disc.sas **Date: 18JUN15:09:38**

Table 19. Length of Whitefish

Year	N	Mean	CV
2014	1776	340.68356	0.4341278

Table 20. Length of Salmon in ICES subdivisions 29 - 31

Year	N	Mean	CV
2014	2653	864.11569	0.3590156

Table 21. Length at age of Salmon in ICES subdivisions 29 - 31

year	Ageslice	N	Mean	Std	CV
2014	1	182	589.0048	3.6571537	0.6209039
	2	1266	823.80861	1.9292668	0.2341887
	3	562	1009.6138	3.2877098	0.3256403
	4	115	999.62668	6.6299127	0.6632389
	5	50	1079.5668	9.4742398	0.8775965

Table 22. Weight at age of Salmon in ICES subdivisions 29 - 31

year	Ageslice	N	Mean	Std	CV
2014	1	182	1850.5495	44.888322	2.4256754
	2	1266	5470.048	39.401779	0.7203187
	3	562	10518.128	101.388	0.9639358
	4	115	10140.96	191.43596	1.8877498
	5	50	12701.866	267.26966	2.1041763

Program: T_SAL_weight_CV_2231_14.sas **Date: 18JUN15:09:37**

Table 23. Sex at age of Salmon in ICES subdivisions 29 - 31

year	Ageslice	N	Mean	Std	CV
2014	1	182	0.9444466	0.0172031	1.8215048
	2	1266	0.2698033	0.014321	5.3079422
	3	562	0.3402041	0.0240005	7.0547411
	4	115	0.1304491	0.0393958	30.200114
	5	50	0.03038	0.0293051	96.46175

Program: T_SAL_sex_CV_2231_14.sas **Date: 18JUN15:09:37**

Table 24. Length at age of Salmon in ICES subdivision 32

Year	Ageslice	N	Mean	Std	CV
2014	1	34	682.64706	8.2916703	1.214635
	2	388	842.01031	2.9834	0.3543187
	3	43	996.97674	10.758065	1.0790688
	4	12	1005.8333	12.275908	1.2204714
	5	1	1170	0	0

Program: T_SAL_length_CV_32_14.sas **Date: 18JUN15:09:35**

Table 25. Weight at age of Salmon in ICES subdivision 32

Year	Ageslice	N	Mean	Std	CV
2014	1	34	3188.2353	126.2752	3.9606613
	2	388	6775.1804	83.499294	1.2324291
	3	43	9904.6512	310.83989	3.1383224
	4	12	11583.333	586.37334	5.0622159
	5	1	16000	0	0

Program: T_SAL_weight_CV_32_14.sas **Date: 18JUN15:09:37**

Table 26. Sex at age of Salmon in ICES subdivision 32

Year	Ageslice	N	Mean	Std	CV
2014	1	34	0.9117647	0.0487806	5.350125
	2	388	0.3118557	0.0238983	7.6632554
	3	43	0.4418605	0.0750641	16.988197
	4	12	0.4166667	0.1405556	33.733336
	5	1	1	0	0

Study: EU-tike **Sponsor: RKTL** **Page: 1 (1)**

Table 27. Length of Sea trout in ICES subdivisions 29 - 31

Year	N	Mean	CV
2014	234	627.50766	0.9419469

Program: T_TRS_length_CV_14.sas **Date: 18JUN15:09:39**