European Commission

FAME Support Unit

CT03.1

Working paper on EMFF result indicators validation

Final

April 2019

Fisheries and
Maritime Affairs

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List of Acronyms

CIR	Commission Implementing Regulation
CISE	Common Information Sharing Environment
CLLD	Community-Led Local Development
DCF AR	Data Collection Framework Annual Report
EMFF	European Maritime and Fisheries Fund
ESIF	European Structural and Investment Funds
FAME SU	Fisheries and Aquaculture Monitoring and Evaluation Support Unit
FLAG	Fisheries Local Action Group
FTE	full-time employee
LDS	Local Development Strategy
MA	Managing Authority
MPA	marine protected area
MS	Member State(s)
OP	operational programme
PO	Producer Organisation
RI	result indicator
STECF	Scientific, Technical and Economic Committee for Fisheries
WP	working paper

1 Introduction

1.1 Background

FAME (Fisheries and Aquaculture Monitoring and Evaluation) is a support unit to the European Commission Directorate General for Maritime Affairs and Fisheries (DG MARE).

FAME produces background and working papers on European Maritime and Fisheries Fund (EMFF) topics, as well as reports and stories illustrating the use of the EMFF. FAME also provides hands-on support for the monitoring and evaluation community of the EMFF. This includes supporting materials for Article 97(1)(a) reporting.

According to Article 97(1)(a) of the EMFF Regulation (EU) No 508/2014, by 31 March each year Managing Authorities (MA) shall provide the Commission (COM) with relevant cumulative data on operations selected for funding up to the end of the previous calendar year, including key characteristics of the beneficiary and the operation itself.

Each Article 97(1)(a) report consists of four annexes. One of these, Annex IV, includes two fields reserved for result indicator (RI) values:

- Field 23 – Indicative result expected by the beneficiary;

- Field 24 – Value of result indicator when validated after implementation.

Field 24 poses a certain challenge due to the request for "validation".

1.2 Purpose and target groups

This working paper aims to:

- assist MAs with their Article 97(1)(a) reporting;

- help distinguish between 'validation' under Article 97(1)(a) and 'audit obligations';

- define a common approach to validating and completing Annex IV field 24 and provide support on how to best validate common result indicators for monitoring purposes; and

- facilitate the comparability and aggregation of MS Infosys reports and allow COM to conduct further analyses in an evaluation exercise.

The target groups of the working paper are MA staff dealing with EMFF Operational Programme (OP) reporting and COM officers.

1.3 Structure of the document

The present working paper consists of this introductory chapter (Chapter 1); a short description of the Article 97(1)(a) framework and the specificities of fields 23 and 24 (Chapter 2); a description of what validation is under Article 97(1)(a) (Chapter 3); and an annex with errors and sources for each result indicator (Chapter 4).

2 Article 97(1)(a) framework

2.1 Commission Implementing Regulations on Article 97(1)(a)

Commission Implementing Regulations (EU) No 1242/2014, No 1243/2014 and No 2017/788 (amending the second) set the framework for reporting according to Article 97(1)(a). They provide details of the required data and database structure. In reference to the reporting systems of earlier funding instruments (FIFG, EFF), this reporting system is often referred to as "Infosys".

In Annex IV of the Article 97(1)(a) reports there are two fields reserved for result indicator (RI) values:

- Field 23 – Indicative result expected by the beneficiary;
- Field 24 – Value of result indicator when validated after implementation.

The wording 'value of result indicator when validated after implementation' in reference to field 24 derives from the Regulations referred to above. This is a unique feature of the EMFF that does not appear in other European Structural and Investment Funds (ESIF); this is the first time the term 'validated' appears in a Regulation, but it is not defined there.

Field 24 must be filled in only after the operation is finalised, and its value should be validated. Validation in this context means examining whether the 'indicative result expected by the beneficiary' (i.e. field 23) was achieved.

An increasing number of EMFF operations are now reaching completion, and so the first values in field 24 are being reported or will be soon. For each common result indicator, the most suitable time to collect the validated value is discussed in the FAME working paper d*efinitions of common indicators* (see revised version from March 2019).

The value of each result indicator should be presented in the appropriate measurement unit and with the correct arithmetic sign (plus or minus) according to the Annex of Commission Delegated Regulation (EU) No 1014/2014.

2.2 Annex IV, fields 23 and 24

Each beneficiary has to report at the start of their operation and for a number of years following its completion. Thus in the Article 97(1)(a) reports beneficiaries provide values for each result indicator before the operation starts (field 23) and after the operation is implemented (field 24).

The earliest that field 24 may be filled is following the final payment claim (depending on the RI). Usually, however, field 24 is filled in a year after completion or even later (for example, using an average over three years).

As a general rule, the same diligence should apply to the values in fields 23 and 24. For example, if the value in field 23 is based on a beneficiary statement then the value in field 24 can be based on the same source.

The most common source for fields 23 and 24 are beneficiaries' reports. Detailed sources for each indicator are listed in Table 3 in the Annex.

The purpose of collecting result indicator values before and after an operation is simply for monitoring.

2.3 Most common plausibility errors in fields 23 and 24

In the course of the annual Article 97(1)(a) report screenings FAME has found a number of formal and plausibility errors related to fields 23 and 24. In order to use aggregated data for reports at EU level, as well as for national evaluations, these errors need to be corrected at MA level.

Table 1 shows the types of errors that have been detected when screening Article 97(1)(a) reports. Possible errors for each RI are also listed in Table 2 in the Annex.

Table 1: Types of errors detected by FAME

Errors	Result indicator code																						
	1.1	1.2	1.3	1.4.a	1.5	1.9.a	1.10.a	1.10.b	2.1	2.2	2.3	2.4	2.5	2.6	4.1	4.2	4.3	5.1.a	5.1.b	5.1.c	5.1.d	6.2.a	6.2.b
Failure to report negative values, where decreased was expected				x	x	x																	
Use of the national currency where EUR is required	x		x							x	x							x		x			
Values reported in EUR where 'thousand EUR' are required	x		x		x					x								x		x			
Values reported in kg where tonnes are required		x	x	x					x	x		x	x	x					x		x		
Values reported in ha where km^2 are required							x	x														x	x
CLLD duplication – III.2, III.3 One result indicator value for both measures															x	x	x						
Duplication of RI values							x	x														x	x

Source: FAME 2019

3   Validation under Article 97(1)(a)

3.1   What is validation?

The purpose of Article 97(1)(a) reporting is to provide insight into the overall results of the EMFF OPs.

The EMFF Commission Implementing Regulations mention 'validated' data without specifying the specific meaning of 'validation' in the context of EMFF monitoring. In general, validation can be interpreted as ensuring the correctness of data. Since it is generally the beneficiaries who provide the RIs, validation can apply at two levels:

1. Is the Infosys data formally correct? In other words, do entries have the required units and numbers of decimal places, and are they free from transcription errors? This validation can be done at IB or MA level.
2. Is the data plausible, i.e. was the reported value reasonable within the context of the project, was it actually achieved and can supporting evidence be drawn upon if necessary? This validation can be done at MA level but may require further contacts with the beneficiary.

Validating the RI is a simple process that should mainly be based on the values delivered by the beneficiary. The method for delivering these values is described in the FAME working paper on the *definitions of common indicators* (revised version of March 2019).

> **Entering values in field 24 is part of the EMFF monitoring process, not an audit.**

3.2   Possible validation procedures

We propose three validation procedures to take place sequentially:

1. validation of the formal correctness of data entries (using the FAME Infosys validation tool);
2. validation of plausibility (using the FAME Infosys validation tool);
3. in-depth validation (using suitable methods).

> **For most cases the first two validation procedures will suffice for Article 97(1) reports.**

3.2.1   Validating the formal correctness of data entries

The initial validation step is designed to ensure the formal correctness of the data, for all four annexes of the Article 97(1)(a) reports. Common errors include:

- codes interpreted as dates or other wrong formats;
- missing values;
- wrong or missing codes (implementation data or result indicator codes);
- multiple use of codes, where only one entry was required.

The **FAME Infosys validation tool** (revised version of February 2019)[1] analyses all four annexes and highlights formal data errors. In the case of Annex 4, which includes fields 23

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[1] The FAME Infosys validation tool is available over the FAME MS SharePoint platform.

and 24, the error reports highlight mainly missing codes, wrong codes and the double use of codes.

3.2.2 Validating plausibility

A more detailed validation of the Article 97(1)(a) reports assesses the plausibility of the result indicator values in general, and fields 23 and 24 in particular. This stage of assessment should include the following validations:

- plausibility of values compared to the investment associated with the operation;
- plausibility of values compared to the size of the area addressed;
- match between values and units (comparing a value with its unit might indicate a conversion mistake);
- relation between the values in fields 23 and 24;

The FAME Infosys validation tool (revised version of February 2019) also detects plausibility errors. The tool validates the four annexes and highlights most of the plausibility errors illustrated in Table 1.

The IB or MA might also want to consider in their validation:

- the extent to which the value is influenced by external factors;
- the date at which a value was reported (in some cases a value reported on one date might be more plausible at a later date).

3.2.3 In-depth validation

Full in-depth validation is only feasible if there is a significant amount of investment and a potential impact at national level. An in-depth validation can be part of an evaluation, for example. The decision to carry out an in-depth validation is entirely up to the MA.

Where the MA chooses to do an in-depth validation the following process is proposed:

1. stratified sampling of operations;
2. selection of operations to be validated;
3. collection of data, including questionnaires and surveys;
4. analysis of the results and design of validation rules to be applied to operations that were not validated directly;
5. application of validation rules to the whole population, followed by contact with beneficiaries whose reported values fall short of the validation rules.

Detailed contacts with all beneficiaries to 'validate' their reported result indicators would certainly be too time-consuming.

Although a sound statistical basis would be desirable for the in-depth validation, it is not the purpose of this working paper to describe or impose the necessary procedures.

1: Stratified sampling

In statistics, stratified sampling is a method of sampling from a population. When subpopulations within an overall population vary, it can be advantageous to sample each subpopulation (stratum) independently. Stratification is the process of dividing groups of
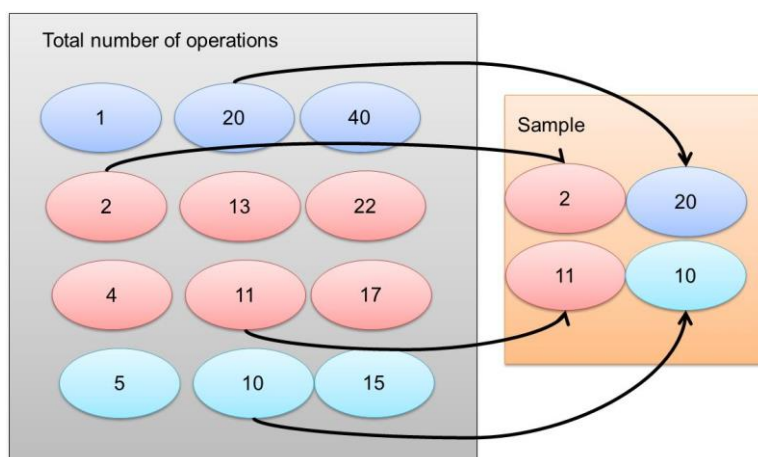
homogeneous subgroups before sampling. The strata should be mutually exclusive: every type of operation and beneficiary should be included in a sample stratum. Each operation and beneficiary should only be assigned to one stratum (Figure 1).

For the validation of EMFF RIs it is necessary to choose a sample of operations and beneficiaries that is representative of the entire group. In this case stratification is achieved by deciding on parameters such as size, budget and type of action, and dividing beneficiaries into relatively homogenous groups based on the values of these parameters.

- A value that is easy to apply is the total budget of each operation. It is then possible to divide up the operations into say three to five groups based on their budgets.
- A second criterion for sampling might be the focus area, e.g. fishing, aquaculture, processing or community-led local development (CLLD).

The exact sampling method will depend on the situation in each MS.

Figure 1: Stratification to create a representative sample

Source: Särndal, Carl-Erik; et al. (2003), adapted by FAME 2019

2: Selecting individual operations

Having divided the group of operations and beneficiaries into several homogenous strata, a number of individual operations must be selected from each. This number will also depend on the resources available for the validation. Beneficiaries of the selected operations should be contacted and their operations assessed. The selection can be done 'randomly', but also on the basis of a judgement of their usefulness made by the MA. The operations can also be selected on the basis of the values of their RIs. Operations reporting high values have a relatively larger impact on the overall results of the programme, so it is important to validate their results.

The selection shows how many beneficiaries will be validated and what share of the total programme they represent in terms of budget and reported RIs.

3: Data collection

The methodology of the validation will vary according to the resources available, e.g. by survey, interviews or on-the-spot validations.

4: Analysis

Analysis of the collected data may make it possible to design new validation rules. For example: "A fisheries operation with an EMFF budget between EUR *X-Y* can be expected to generate about *N* FTE".

5: Feedback to the whole population

The new validation rules developed in the previous step can then be applied to all the operations in the chosen strata. If significant discrepancies occur for some operations, the MA must decide whether the beneficiaries should be contacted to cross-check their reported values. However, this would be only relevant in cases where a correction of RI values would have a major impact on the results of the total programme.

The reported values of RIs (whether validated or not) are often estimates and should not be rigidly interpreted as absolute values. The above validation procedure acknowledges the range of RIs across the whole programme (in statistical terms: less accuracy, but more reliability).

4 Annex: errors and sources for each result indicator

Table 2: Possible errors for each RI

RI codes	Deviation
1.1 Change in the value of production	Pay attention to the measurement unit (thousand EUR) and the necessary transformation from EUR
1.2 Change in the volume of production	Pay attention to the measurement unit (tonnes) and the necessary transformation from kg
1.3 Change in net profits	Pay attention to the measurement unit (thousand EUR) and the necessary transformation from EUR
1.4.a Change in unwanted catches (tonnes)	Pay attention to the measurement unit (tonnes) and the necessary transformation from kg
1.4.b Change in unwanted catches	No simple summation of figures possible
1.5 Change in fuel efficiency of fish capture	• Where fuel consumption is recorded as costs rather than in litres average, annual prices for fuel should be used. These are usually available from fuel suppliers or vessel operators. • In some MSs fuel for bigger vessels is provided in mass and not volume units (tonnes instead of litres); in these cases, apply a conversion factor of $1\,l = 0.82$ kg. • The MA should verify that the gear or engine financed through the OP operations is included in the list of types for which a standard coefficient exists, and use the coefficient to calculate the change in energy efficiency.
1.6 Change in the percentage of unbalanced fleets	No simple summation of figures possible.
1.7 Employment created (FTE) in the fisheries sector or complementary activities	• A self-employed person should be considered as 1 FTE when there is no work-hour registration. • For Article 29(1)/29(3), also consider remunerated trainees as 'new jobs'. • Persons employed temporarily to work on the project realisation, e.g. on infrastructures, must not be recorded as job creation. • Jobs are expected to be permanent or – in the case of seasonal jobs – recurring. • Gross jobs are considered at the enterprise level. The origin of the jobholder is not examined as long as it directly contributes to the increase of total jobs in the enterprise. • The indicator does not take account of qualitative factors of employment such as salary.
1.8 Employment maintained (FTE) in the fisheries sector or complementary activities	–
1.9.a Change in the number of work-related injuries and accidents	–
1.9.b Change in the percentage of work-related	No simple summation of figures possible.

RI codes	Deviation
injuries and accidents in relation to total fishers	
1.10.a Change in the coverage of Natura 2000 areas designated under the Birds and Habitats Directives	• Spatial extent of the MPAs concerned. • Pay attention to the measurement unit (km^2) and the necessary transformation from other spatial units (hectare, acre or other).
1.10.b Change in the coverage of other spatial protection measures under Article 13.4 of the Directive 2008/56/EC	• Spatial extent of the MPAs concerned. • Pay attention to the measurement unit (km^2) and the necessary transformation from other spatial units (hectare, acre or other).
2.1 Change in volume of aquaculture production	Pay attention to the measurement unit (tonnes) and the necessary transformation from kg.
2.2 Change in value of aquaculture production	Pay attention to the measurement unit (thousand EUR) and the necessary transformation from EUR.
2.3 Change in net profit	Pay attention to the measurement unit (thousand EUR) and the necessary transformation from EUR.
2.4 Change in the volume of production organic aquaculture	• Beneficiaries have to comply with the requirements of organic production for a minimum of 5 years. • For operations under Article 53 beneficiaries have to respect the conversion period. • At the earliest, the conversion period shall start when the farmer has notified his activity to the competent authorities and subjected his holding to the control system in accordance with Council Regulation (EC) No 834/2007. • Animals and animal products produced during the conversion period referred to in subparagraph (c) of Article 17 of Council Regulation (EC) No 834/2007 shall not be marketed with the indications referred to in Articles 23 and 24 used in the labelling and advertising of products. • Therefore organic production can only be included in the EMFF database (and hence affect the result indicator) after the conversion is finalised.
2.5 Change in the volume of production recirculation system	• In the case of a new system, the baseline is zero. • In the case of an investment in an installed recirculation system, the baseline is the annual total volume of production using recirculation systems before the operation for which the most current annual reports are available.
2.6 Change in the volume of aquaculture production certified under voluntary sustainability schemes	All types of voluntary sustainability schemes are included under this definition, as long as the MAs regard them as sound and valid (e.g. not just a publicity measure).
2.7 Aquaculture farms providing environmental services	Note that the output indicator related to Article 54 is 'Number of projects limiting the impact of aquaculture on the environment (eco-management, audit schemes, organic aquaculture, environmental services'. The value of the result indicator can therefore be lower than or equal to the value of the output indicator.

RI codes	Deviation
2.8 Employment created	- Positions need to be filled and increase the total number of jobs in the enterprise. If total employment does not increase the value is zero. - Persons employed temporarily to work on the project realisation, e.g. on infrastructures, must not be recorded as job creation. - Jobs are expected to be permanent or – in the case of seasonal jobs – recurring. - Gross jobs are considered at the enterprise level. The origin of the jobholder is not examined as long as it directly contributes to the increase of total jobs in the enterprise. - The indicator does not take account of qualitative factors of employment, such as salary. - A self-employed person should be considered as 1 FTE where there is no work-hour registration.
2.9 Employment maintained	–
3.A.1 Number of serious infringements detected	Not applicable for Article 97(1)(a) reporting.
3.A.2 Landings that have been subject to physical control	Not applicable for Article 97(1)(a) reporting.
3.B.1 Increase in the percentage of fulfilment of data calls	Not applicable for Article 97(1)(a) reporting.
4.1 Employment created (FTE)	–
4.2 Employment maintained (FTE)	–
4.3 Businesses created	It is assumed that the business owner and beneficiary are the same. The beneficiary can also be a different entity to the business founder. In this case, the beneficiary reports on all business created.
5.1.a Change in value of first sales in POs	- This indicator is explicit on POs and their market performance. - Pay attention to the measurement unit (thousand EUR) and the necessary transformation from EUR.
5.1.b Change in volume of first sales in POs	- This indicator is explicit on POs and their market performance. - Pay attention to the measurement unit (tonnes) and the necessary transformation from kg.
5.1.c Change in value of first sales in non-POs	- The term 'non-POs' covers producers that are not members of POs (eligible for support under Article 68) as well as processors (eligible for support under Article 69). - Pay attention to the measurement unit (thousand EUR) and the necessary transformation from EUR.
5.1.d Change in volume of first sales in non-POs	- The term 'non-POs' covers producers that are not members of POs (eligible for support under Article 68) as well as processors (eligible for support under Article 69). - Pay attention to the measurement unit (tonnes) and the necessary

RI codes	Deviation
	transformation from kg.
	• 'First sales' refers to the first time these products are made available on the market of fishery and aquaculture products. In the case of processors, the value and volumes to consider are those of products made available on the market upon processing. It includes all steps of the value chain that bring added value to the products after the first sale, such as marketing to wholesalers and to consumers, and is used regardless of where the processor has received the raw material (including imports).
6.1 Increase in the Common Information Sharing Environment (CISE) for the surveillance of the EU maritime domain	Not applicable for Article 97(1)(a) reporting.
6.2.a Change in the coverage of Natura 2000 areas designated under the Birds and Habitats Directives	• Spatial extent of the MPAs concerned. • Pay attention to the measurement unit (km^2) and the necessary transformation from other spatial units (hectare, acre or other).
6.2.b Change in the coverage of other spatial protection measures under Article 13.4 of the Directive 2008/56/EC	• Pay attention to the measurement unit (km^2) and the necessary transformation from other spatial units (hectare, acre or other).

Table 3: Possible sources of RI values

RI codes	Sources
1.1 Change in the value of production	• The value is based on the profit and loss account of the beneficiary and should only refer to revenue (i.e. total sales or turnover) from fish and related fishery products. • For the cases where no bookkeeping obligations exist or there is only a simplified version, beneficiary estimates are valid.
1.2 Change in the volume of production	• The value is reported by the beneficiary based on the logbooks or on landing declarations as applicable.
1.3 Change in net profits	• The value is based on the profit and loss accounts or similar declarations. • For the cases where no bookkeeping obligations exist or there is only a simplified version, beneficiary estimates are valid.
1.4.a Change in unwanted catches (tonnes)	• The value of total catches of species subject to the landing obligation is reported by the beneficiary based on the logbooks or on landing declarations, as applicable. • 'Change' in the sense of a reduction is expressed as a negative value. In the absence of relevant information available at beneficiary level, proxies can be obtained from estimates at fleet segment level: • Indices and coefficients are based on the most recently available publications by national research institutions or similar organisations. • The MA should verify correct matching between i) the characteristics of the beneficiary, and ii) one of the fleet segments categorised by the MS/national research institutes in order to select the appropriate index. • The MA should verify that the selective gear financed through the OP operations is included in the list of types of selective gears for which a coefficient exists at fleet segment level, and use the coefficient to calculate the change in unwanted catches.
1.4.b Change in unwanted catches (%)	The value should be calculated by the MA based on the values reported for RI 1.4.a ensuring that data considered for year *n* are consistent with data considered for the reference year.
1.5 Change in fuel efficiency of fish capture	• The value of the RI is based on the logbooks or on landing declarations as applicable and on documents indicating volume of fuel used over the same period. • Where none of these are available, it is based on an approximation by the beneficiary.
1.6 Change in the percentage of unbalanced fleets	• Beneficiaries are usually not in a position to provide the data required to calculate this indicator. • Values should be taken from 'National reports on the balance between the fishing capacity of their fleets and their fishing opportunities'.
1.7 Employment created (FTE) in the fisheries sector or complementary activities	• The value of the RI is based on the report by the beneficiary based on their employment record. • In the case of individual fishers, the value is based on the assessment of the fishers. • In the case of companies, the jobs created should be directly related to the EMFF operation and should be based on company records. • National Statistical Institutes need to provide the national reference to

RI codes	Sources
	characterise a full-time equivalent (FTE).
	• Characterisation of the values reported are:
	• If total employment does not increase the value is zero.
	The MA might need to:
	• assist the beneficiary in calculating the FTE;
	• adjust the national 'FTE coefficient' to reflect specificities and seasonality of the fisheries and maritime sector as applicable.
1.8 Employment maintained (FTE) in the fisheries sector or complementary activities	• The value of the RI is based on the report by the beneficiary, based on their employment record.
	• In the case of individual fishers, the job maintained may be the one of the beneficiary.
	• National Statistical Institutes need to provide the national reference to characterise a full-time equivalent (FTE).
	Characterisation of the values reported are:
	• jobs that are expected to be permanent or – in the case of seasonal jobs – recurring;
	• the indicator not taking account of qualitative factors of employment, such as salary;
	• when there is a lack of a work-hour registration, a self-employed person should be considered as 1 FTE.
	The MA might need to:
	• assist the beneficiary in calculating the FTE;
	• adjust the national 'FTE coefficient' to reflect specificities and seasonality of the fisheries and maritime sector as applicable.
1.9.a Change in the number of work-related injuries and accidents	• The value of the RI is based on the report by the beneficiary, based on their own records. It should contain the number of work-related injuries and accidents BEFORE and AFTER the operation.
	Characterisation of the values reported are when:
	• a 'change' in the case of a 'reduction' is expressed as a negative value;
	• when there is no differentiation according to type, severity, etc. of work-related injuries and accidents;
	• each case of work-related injury and accident corresponds to one fisher.
1.9.b Change in the percentage of work-related injuries and accidents in relation to total fishers	• The value of the RI is based on the calculation done by the MA, based on the values delivered in RI 1.9.a.
	• Institutions responsible for statistical information in the MS should be able to deliver the total number of fishers for the year(s) concerned.
1.10.a Change in the coverage of Natura 2000 areas designated under the Birds and Habitats Directives	• The value of the RI is based on the reporting of the beneficiary.
	• Agencies responsible for the management of protected areas can deliver the list of officially designated MPAs at a reference date, which should contain the spatial extent as a verification of the beneficiary data.
1.10.b Change in the coverage of other spatial protection measures under Article 13.4 of the Directive	• The value of the RI is based on the reporting of the beneficiary.
	• Agencies responsible for the management of protected areas can deliver the list of officially designated MPAs at a reference date, which should contain the spatial extent as a verification of the beneficiary data.

RI codes	Sources
2008/56/EC	
2.1 Change in volume of aquaculture production	• The value is based on the values reported by the beneficiaries, based on their bookkeeping. • The MA should transform beneficiary input data expressed in product weight into live weight equivalent/wet weight based on standardised conversion factors, which are provided by research and/or technical institutes.
2.2 Change in value of aquaculture production	• The value is based on the values reported by the beneficiaries, based on their bookkeeping. • The indicator refers ONLY to revenue from the sales of aquaculture products produced at the beneficiary premises, i.e. ex-farm, (including processed products from its own primary production). • Any other sources of revenue (e.g. from reselling) should be included unless of minimal importance, e.g. contributing less than 10 % of the revenue.
2.3 Change in net profit	• The value is based on the annual revenue reported by beneficiaries, based on their profit and loss account. • For the cases where no bookkeeping obligations exist or there is only a simplified version,, beneficiary estimates should be used.
2.4 Change in the volume of production of organic aquaculture	• The value is to be reported by beneficiaries, based on their bookkeeping.
2.5 Change in the volume of production of the recirculation system	• The value is to be reported by beneficiaries, based on their bookkeeping.
2.6 Change in the volume of aquaculture production certified under voluntary sustainability schemes	• The value is to be reported by beneficiaries, based on their bookkeeping.
2.7 Aquaculture farms providing environmental services	• The value of the RI is the number of supported aquaculture farms providing environmental services to be defined by the MA. • The numbers are based on the monitoring system of the MA.
2.8 Employment created	• The value of the RI is based on the report by the beneficiary, which is based on their employment record. • In the case of individual fishers, the value is based on the assessment of the fishers. • In the case of companies, the jobs created should be directly related to the EMFF operation and should be based on company records. • National Statistical Institutes need to provide the national reference to characterise a full-time equivalent (FTE).
2.9 Employment maintained	• The value of the RI is based on the report by the beneficiary, based on their employment record. • In the case of individual fishers, the job maintained may be the one of the beneficiary. • National Statistical Institutes need to provide the national reference to characterise a full-time equivalent (FTE).

RI codes	Sources
	Characterisation of the values reported are: • jobs that are expected to be permanent or – in the case of seasonal jobs – recurring; • when the indicator does not take account of qualitative factors of employment, such as salary; • when there is a lack of a work-hour registration, a self-employed person should be considered as 1 FTE. The MA might need to: • assist the beneficiary in calculating the FTE; • adjust the national 'FTE coefficient' to reflect specificities and seasonality of the fisheries and maritime sector.
3.A.1 Number of serious infringements detected	• Not applicable for Article 97(1)(a) reporting; • The value of the RI is based on the annual totals from the national database, required by the Control Regulation and inspection reports.
3.A.2 Landings that have been subject to physical control	• Not applicable for Article 97(1)(a) reporting; • The value of the RI is based on MS reports on the implementation of the Control Regulation (Article 188 of Reg. (EC No 1224/2009).
3.B.1 Increase in the percentage of fulfilment of data calls	• Not applicable for Article 97(1)(a) reporting; • The value of the RI is based on the Scientific, Technical and Economic Committee for Fisheries (STECF) review of MS compliance with data calls ('Evaluation of DCF AR and transmission issues/ Annex 2 – Data Transmission Results').
4.1 Employment created (FTE)	• The value of the RI is based on the report by the beneficiary based on their employment record. • In the case of Fisheries Local Action Groups (FLAGs), the number of employment created is based on the FLAG reports. • In the case of projects, the number of newly created jobs will be reported by the FLAGs, based on the values given by project participants. • The MA or the FLAG might need to assist the beneficiary in calculating the FTE.
4.2 Employment maintained (FTE)	• The value of the RI is based on the report by the beneficiary based on their employment record. • In the case of FLAGs, the number of jobs maintained is based on the FLAG reports. • In the case of projects, the number of jobs maintained will be reported by the FLAGs, based on the values given by project participants as long as the jobs are in the FLAG area and relevant to the LDS. • The MA or the FLAG might need to assist the beneficiary in calculating the FTE.
4.3 Businesses created	• The value of the RI is based on the report by the beneficiary, based on a company registration certificate or document. • The MA or the FLAG might need to assist the beneficiary in reporting the values.
5.1.a Change in value of first sales in POs	• The value is based on the values reported by the POs, based on their own monitoring of landings by their members.

RI codes	Sources
5.1.b Change in volume of first sales in POs	• The value is based on the values reported by the POs, based on their own monitoring of the first-sale value of landings by their members.
5.1.c Change in value of first sales in non-POs	• The value is based on the values reported by beneficiaries, based on their bookkeeping.
5.1.d Change in volume of first sales in non-POs	• The value is based on the values reported by beneficiaries, based on their bookkeeping.
6.1 Increase in the Common Information Sharing Environment (CISE) for the surveillance of the EU maritime domain	• It is not possible to isolate the effect of a single operation on the number of landings that have been subject to physical control; any change to the number must instead be attributed to the total number of operations. For the sake of simplicity and transparency we propose that single operations do not report any value. The value of the indicator will be entered, for example for the AIR, by the MA.
6.2.a Change in the coverage of Natura 2000 areas designated under the Birds and Habitats Directives	• The value of the RI is based on the reporting of the beneficiary. • Agencies responsible for the management of protected areas can deliver the list of officially designated relevant MPAs at a reference date, which should contain the spatial extent as a verification of the beneficiary data.
6.2.b Change in the coverage of other spatial protection measures under Article 13.4 of the Directive 2008/56/EC	• The value of the RI is based on the reporting of the beneficiary. • Agencies responsible for the management of protected areas can deliver the list of officially designated relevant MPAs at a reference date, which should contain the spatial extent as a verification of the beneficiary data.