METHODOLOGICAL REPORT – ECONOMIC AND SOCIAL DATA COLLECTION FOR AQUACULTURE AND PROCESSING INDUSTRY IN ROMANIA

Galați

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CHAPTER 1
INTRODUCTORY ELEMENTS

1.1 Purpose and scope

There is a framework program in the EU for collection and management of data concerning fishing practices. This program was last reformed in 2008, resulting in a Data Collection Framework (DCF). In this context, RO collects, manages and makes available a wide range of data on the fisheries, aquaculture and fish processing sector.

Data is collected on the basis of a national program in which each Member State, including RO, indicates what data is collected, the resources it allocates for collection and how data is collected. RO must report annually on the program implementation and the Scientific, Technical and Economic Committee for Fisheries (STECF) evaluates the report.

Some of the data collected by RO is uploaded to databases managed by the JRC in response to data calls issued by DG MARE. These data are analysed by STECF experts and form the basis for scientific opinions and recommendations made in STECF reports. The resulting scientific advice is used as a basis for establishing The Common Fisheries Policy.

The purpose of this manual is to ensure a coherent and unitary framework for creating and implementing the National Program for Data Collection (PNCD) in the Romanian fisheries sector.

Data quantity, quality and collection methods, have a direct influence on economic agents with main activity in aquaculture (NACE code 0322), as well as on the management of fish, fish products and other aquatic creatures processing sector, in Romania, in accordance with NACE code 1020 - Processing and preserving of fish, crustaceans and molluscs.

1.2 Reference documents

The methods of data collection, verification, processing and analysis are in line with the EU Commission requirements.

The reference documents, on which the implementation of this data collection and management program in the aquaculture and processing sector is based, are the following:

Regulation no. 1004/2017 on establishing a Union framework for the collection, management and use of data in the fisheries sector and supporting scientific consultancy on the Common Fisheries Policy and repealing Council Regulation no. 199/2008 (revised).

EU Delegated Decision no. 910/2019 of 13 March 2019 establishing the Union multiannual program for collection and management of biological, environmental, technical and socio-economic data in fisheries and aquaculture sectors.

Implementing **Decision (EU) no. 909/2019** establishing a list of compulsory research campaigns and thresholds for the Union's multiannual program for data collection and management in fisheries and aquaculture sectors.

Implementing **Decision (EU) no. 2016/1251 of 12 July 2016** adopting a multiannual Union program for collection, management and use of data from fisheries and aquaculture sectors for the 2017-2019 period.

CHAPTER 2
MONITORING DIRECTIONS

The structure of collected data was established in accordance with Article 21 of Regulation (EU) no. 508/2014.

- **Economic data for the aquaculture and processing sector**
  - **Economic data for the aquaculture sector are the economic variables (revenues and expenditures) according to Table 7 of Commission Implementing Decision (EU) no. 2016/1251. These data can be found in section IV of the questionnaire used to collect data from the aquaculture sector.**
  - **Economic data for the processing sector are the economic variables (revenues and expenditures) according to Table 11 of Commission Implementing Decision (EU) no. 2016/1251. These data can be found in section III of the questionnaire used to collect data from the processing sector.**
- **Social data aims at defining / characterizing employees in the aquaculture and processing industry sectors according to level of education, age, gender and nationality. These data can be found in section IV of the questionnaire for the aquaculture sector and in section III of the questionnaire for the processing sector.**
- **Environmental data for the aquaculture sector represents the collection, analysis and interpretation of environmental data for aquaculture, regarding the type and quantity of drugs or treatments administered for prevention and control of diseases in Romanian aquaculture sector and mortality recorded in aquaculture units. These data can be found in section V of the questionnaire for the aquaculture sector.**

In addition to data presented above, the following types of data are also collected:

- **Unit identification data (unit name, NACE code, ownership, unit address, contact person). These data can be found in section I of the questionnaire for both aquaculture and processing sectors.**
- **Production data (technical data)**

- **Technical data from the aquaculture sector refers to: area, unit category (breeding station, nursery, rearing, combined), age of the biological material (embryonated eggs, summer I brood, summer II brood, fish for consumption, breeders), type of breeding technologies applied (directed, artificial or combined), type of breeding technology and category of technological system (extensive system, semi-intensive system, intensive system, in earthen ponds, in concrete ponds, in cages or pens, in recirculating system, floats, ropes, seabed, other enclosures), number of persons employed, by gender. These data can be found in sections I, II and III of the questionnaire.**
- **Technical data on the processing unit activity refer to raw material processed within the unit (quantities, values, species, origin) and to assortments obtained after processing (quantity and value for each assortment and whether it is marketed on the internal or external market). These data can be found in section II of the questionnaire.**

Chapter 3
WORKING METHODOLOGIES

The data collection methods and their quality must be appropriate to the purposes defined in Article 25 of Regulation (EU) no. 1380/2013 and must comply with the best practices and methodologies in accordance with the opinions of the relevant scientific bodies.

Romania's national data collection program for the aquaculture and fish processing sector is revised as often as necessary in accordance with the regulation requirements for the current year and for its improvement.

The collection of technical and economic data from economic agents in aquaculture is done in two ways: by questionnaire and by interview at the level of aquaculture units throughout the country. The sector-specific questionnaires collect annual technical and economic data for the entire contract duration. The interview role is to complete and verify the data accuracy entered in the questionnaire.

The model questionnaire is sent and distributed to all units, by experts involved in the implementation team together with the ANPA representatives assigned to the regional branches. Data collection is also carried out by a team of experts involved, together with ANPA inspectors, through questionnaires sent to producer associations, companies, individuals or entities authorized to carry out aquaculture and / or processing activities.

Interviews are conducted at aquaculture economic units assigned to the ANPA regional branches: Moldova, Muntenia, Oltenia, Transylvania, and the

Maritime Directorate - Constanța Department, as well as the Danube Delta Inspection Service.

The thoroughly researched processing units are in one of the following situations:

- **units with juridical personality regardless of the form of ownership (state, private, public institutions, other (specified);**
- **units with main activity in aquaculture or processing, included in the segments required by EC Implementing Decision (EU) 2016/1251.**

Data are collected from the following types of processing units:

- **units whose main activity is - Processing and preserving of fish, crustaceans and molluscs, classified according to EUROSTAT with NACE code 10.20;**
- **units whose secondary activity is - Processing and preserving of fish, crustaceans and molluscs, classified according to EUROSTAT with NACE code 10.20.**

The methodology of data processing provided by economic agents through questionnaires and interviews was entirely subordinated to the generation of specific data provided in tables 3B, 3C, 5B, 6A National Data Collection Plan, and are found in the European Commission Decision no. 1701/2016.

The processing of data specific to the two sectors, involved in a first stage, their ordering according to locality, county, form of organization, cultivated species, processed species and their introduction in the database.

In the second stage, the data analysis took place in order to evaluate the aquaculture sector and the fisheries processing industry.

In the third stage, data management and use were performed.

3.1 The methodology used to select different data sources

Aquaculture sector

For the aquaculture sector, the data collected consists in identifying the economic agent, by consulting the Register of Aquaculture Units - RUA, from the ANPA statistical data. The data collected are of an economic, social and technological nature.

The source of technical and economic data is represented by values entered in the questionnaires completed by economic agents with main activity in aquaculture (NACE code 0322), as well as by the information collected through interviews. These data are verified / completed, in order to ensure the validation of the primary data processed within the program.

The questionnaires are revised annually, for the purpose of tabular production reporting, keeping the structure of four basic sections:

- **Section I - Unit identification data (name of the unit, NACE Code, form of ownership, address of the unit, contact person).**
- **Section II - Technical data on the unit, relating to:**

– **aquaculture: area, unit category (breeding station, nursery, rearing, combined), age of the biological material (embryonated eggs, fingerlings, summer I brood, summer II brood, fish for consumption, breeders, fish eggs for human consumption), type of breeding technologies applied (directed, artificial or combined), type of breeding technology and category of technological system (extensive system, semi-intensive system, intensive system, in earthen ponds, in concrete ponds, in cages or pens, in recirculating system, floats, ropes, seabed, other enclosures), number of persons employed, by gender.**

Data acquisition for the aquaculture sector will be made in accordance with European Commission Decision no. 1251/2016 and its annex in accordance with EU legislation (table 1).

Economic variables for the aquaculture sector are defined and collected according to Table no. 7 of the annex of the European Commission Decision no. 1251/2016.

Table no. 1 - Source of economic variables collected for the aquaculture sector

Variable group	*Variable*	*Data Sources*
Income	Gross sales per species	Questionnaire
	Other income	Questionnaire
Personnel costs	Personnel costs	Questionnaire
	Value of unpaid labour	Questionnaire
Energy costs	Energy costs	Questionnaire
Raw material costs	Livestock costs	Questionnaire
	Feed costs	Questionnaire
Repair and maintenance	Repair and maintenance	Questionnaire
Other operational costs	Other operational costs	Questionnaire
Subsidies	Operating subsidies	Questionnaire
	Subsidies on investments	Questionnaire
Capital costs	Consumption of fixed capital	Questionnaire
Capital value	Total value of assets	Questionnaire
Financial results	Financial income	Questionnaire
	Financial expenditures	Questionnaire
Investments	Net investments	Questionnaire
Debt	Debt	Questionnaire
Raw material weight	Livestock used	Questionnaire
	Fish Feed used	Questionnaire

Weight of sales	**Weight of sales per species**	**Questionnaire**
Employment	**Number of persons employed**	**Questionnaire**
	Unpaid labour	**Questionnaire**
	Number of hours worked by employees and unpaid workers	**Questionnaire**
Number of enterprises	**Number of enterprises (by category on the number of persons employed)**	**Questionnaire**

Social data expected to be obtained, aim at defining/characterizing employees from the aquaculture sectors according to level of education, age, gender and nationality and national FTE. Social variables will be collected according to Table 6 of the annex of the European Commission Decision no. 1251/2016 (table 2).

Table no. 2 - Source of social variables collected for the aquaculture sector

Variable	***Data Sources***
Employment by gender	**Questionnaire**
FTE by gender	**Questionnaire**
Unpaid labour by gender	**Questionnaire**
Employment by age	**Questionnaire**
Employment by education level	**Questionnaire**
Employment by nationality	**Questionnaire**
Employment by employment status	**Questionnaire**
FTE National	**Questionnaire**

Processing sector

The source of economic, social and technical (production) data for the processing segment is the questionnaire. The telephone or personal interview at the unit's headquarters has the role of verifying data correctness and their correlation.

The questionnaires are structured in three sections:

- **Section I - Unit identification data (name of the unit, NACE code, ownership, unit address, contact person).**
- **Section II - Data on the processing unit activity (raw materials, assortments, types, quantity, value).**
- **Section III - Economic and social data according to Table 11 - Commission Implementing Decision (EU) 2016/1251.**

If the companies will not allow access to this information or if data is incomplete, figures registered and declared to the authorities of the fiscal body will be used, respectively the website of the Ministry of Public Finance

(information from the balance report of economic agents that process fish as their main or secondary activity).

The source of the economic variables for the processing sector are presented below in table no. 3.

Table no. 3 - Source of economic variables collected for the processing sector

Variable group	*Variable*	*Data Sources*
Income	Turnover	Questionnaire
	Other income	Questionnaire
Personnel costs	Personnel costs	Questionnaire
	Value of unpaid labour	Questionnaire
	Payment for external agency workers (optional)	Questionnaire
Energy costs	Energy costs	Questionnaire
Raw material costs	Purchase of fish and other raw material for production	Questionnaire
Other operational costs	Other operational costs	Questionnaire
Subsidies	Operating subsidies	Questionnaire
	Subsidies on investments	Questionnaire
Capital costs	Consumption of fixed capital	Questionnaire
Capital value	Total value of assets	Questionnaire
Financial results	Financial income	Questionnaire
	Financial expenditures	Questionnaire
Investments	Net investments	Questionnaire
Debt	Debt	Questionnaire
Employment	Number of persons employed	Questionnaire
	FTE National	Questionnaire
	Unpaid labour	Questionnaire
	Number of hours worked by employees and unpaid workers	Questionnaire
Number of enterprises	Number of enterprises	NAFA
Weight of raw material (optional)	Weight of raw material per species and origin (optional)	Questionnaire

The source of social variables for the processing sector are presented in table no. 4.

Table no. 4 - Source of social variables collected for the processing sector

Social variable	*Data Sources*
Employment by gender	Questionnaire
Employment by age	Questionnaire
Employment by education level	Questionnaire

The production data source for the processing sector can be found in table no.5.

Table no. 5 - Source of production data for the processing sector

Production variables	*Data Sources*
Origin of raw material	Questionnaire
Processed species of fish or other aquatic life	Questionnaire
Quantity of processed raw material	Questionnaire
Cost of processed raw material	Questionnaire
Type of assortment obtained	Questionnaire
Quantity of assortment obtained	Questionnaire
Cost of assortment obtained	Questionnaire
Destination of the obtained products	Questionnaire

The data source is clearly mentioned for each variable in the data source box in Table 3C: Population segments for collection of economic and social data for the processing industry, which accompanies the annual report.

3.2. Methodology used for choosing how to collect data

Aquaculture sector

Data collected from economic agents, common to the aquaculture sector will have an economic character (presented above) and a technological character: number of units, number of employees, equivalent working time (national and European) and productions.

The characteristic segments of aquaculture sector are: species and breeding technologies, yields by types of units and culture.

The method of data collecting from the aquaculture sector will be exhaustive, namely the census, and questionnaires will be sent to all registered units. Thus, the samples size is equal to the total number of aquaculture units in the year in which the study is carried out, respectively to the framework population, proposing to obtain a response rate of 100%.

The last phase of the study will be the collected data analysis and interpretation, the testing of research tools and protocols effectiveness and the statistical parameters estimation for further analysis.

The target population is represented by units in the aquaculture sector and processing industry.

Aquaculture units will be classified in one of the size classes, depending on the number of employees, as follows:

A - units ≤ 5 employees

B - units with 6-10 employees

C - units ≥ 10 employees.

Segmentation of the aquaculture sector will be carried out in accordance with Table no. 9 of the annex (Segmentation to be applied in order to collect data from the aquaculture sector) of the European Commission Decision no. 1251 of 2016.

The main segments of Romanian aquaculture, by species that predominate in culture, will be:

(a) salmon farming;

(b) cypriniculture, a segment that includes rearing of other freshwater species, in polyculture with cyprinids, such as predatory species;

(c) other species of fish (salmon, sea perch, sea bream, tuna, eel);

(d) sturioniculture;

(e) other species of freshwater and marine fish;

(f) the rearing of other aquatic creatures, namely bivalves, crustaceans, algae.

As in the case of economic variables, the main sources for collecting social variables are the following documents: questionnaire, interview and data from the Ministry of Public Finance website, a source from which information can be taken from balance sheets submitted by economic agents that carry out aquaculture activities in the Romanian sector.

The questionnaire is the source where information can be found on all social variables *(employment broken down by gender, FTE broken down by gender, unpaid work broken down by gender, employment broken down by age, employment broken down by level of education, employment broken down by nationality, employment broken down by professional status, national FTE)* as required by Decision (EU) 1251/2016.

The social data expected to be obtained aim at defining / characterizing the employees in the aquaculture sector according to the level of education, age, gender and nationality and national FTE.

Processing sector

Economic, social and production data are collected annually, with the support of ANPA, from all economic operators identified as having their main and secondary activity - Processing and preserving of fish, crustaceans and molluscs, according to NACE 1020.

Data collection is performed by region and depends on the number of employees per unit.

The method of data collection is exhaustive, namely the census, the questionnaires being distributed to all companies active in the current monitored year.

The collection method ensures a 100% coverage of the population.
The essential advantage of this type of collection (census) is that it makes it possible to know the entire processing sector.

For enterprises whose main activity is fish processing, data on economic variables are collected for reporting according to the table below:

Variable group	***Variable***	***Methodology***
Income	**Turnover**	**For all units whose main activity is fish processing, data collection and reporting is performed by segments according to the number of employees as follows:** • **≤ 10** • **11-49** • **50-249** • **≥ 250**
	Subsidies	**For all units whose main activity is fish processing, data collection is performed by segments according to the number of employees as follows:** • **≤ 10** • **11-49** • **50-249** • **≥ 250.** **Data reporting is performed for all segments.**
	Other Income	**For all units whose main activity is fish processing, data collection is performed by segments according to the number of employees as follows:** • **≤ 10** • **11-49** • **50-249** • **≥ 250.** **Data reporting is performed for all segments.**
Personnal Costs	**Wages and salaries of staff**	**For all units whose main activity is fish processing, data collection and reporting is performed by segments according to the number of employees as follows:** • **≤ 10** • **11-49** • **50-249** • **≥ 250**

	Imputed value of unpaid labour	**For all units whose main activity is fish processing, data collection and reporting is performed by segments according to the number of employees as follows:** • **≤ 10** • **11-49** • **50-249** • **≥ 250**
Energy Costs	**Energy Costs**	**For all units whose main activity is fish processing, data collection and reporting is performed by segments according to the number of employees as follows:** • **≤ 10** • **11-49** • **50-249** • **≥ 250**
Raw Material Costs	**Purchase of fish and other raw material for production**	**For all units whose main activity is fish processing, data collection is performed by segments according to the number of employees as follows:** • **≤ 10** • **11-49** • **50-249** • **≥ 250.** **Data reporting is performed for all segments.**
Other operational costs	**Other Operational Costs**	**For all units whose main activity is fish processing, data collection and reporting is performed by segments according to the number of employees as follows:** • **≤ 10** • **11-49** • **50-249** • **≥ 250**
Capital Costs	**Depreciation of capital**	**For all units whose main activity is fish processing, data collection and reporting is performed by segments according to the number of employees as follows:** • **≤ 10** • **11-49** • **50-249** • **≥ 250**
	Financial Costs, net	**For all units whose main activity is fish processing, data collection and reporting is performed by segments according to the number of employees as follows:** • **≤ 10** • **11-49**

		• 50-249 • ≥ 250
Extraordinary costs	**Extraordinary Costs, net**	**For all units whose main activity is fish processing, data collection and reporting is performed by segments according to the number of employees as follows:** • ≤10 • 11-49 • 50-249 • ≥ 250
Capital Value	**Total value of assets**	**For all units whose main activity is fish processing, data collection and reporting is performed by segments according to the number of employees as follows:** • ≤ 10 • 11-49 • 50-249 • ≥ 250
Net Investments	**Net Investments**	**For all units whose main activity is fish processing, data collection and reporting is performed by segments according to the number of employees as follows:** • ≤ 10 • 11-49 • 50-249 • ≥ 250
Debt	**Debt**	**For all units whose main activity is fish processing, data collection and reporting is performed by segments according to the number of employees as follows:** • ≤ 10 • 11-49 • 50-249 • ≥ 250
Employment	**Number of persons employed**	**For all units whose main activity is fish processing, data collection is performed by segments according to the number of employees as follows:** • ≤ 10 • 11-49 • 50-249 • ≥ 250. **Data reporting is performed for all segments.**
	FTE National	**For all units whose main activity is fish processing, data collection is performed by segments according to the number of employees as follows:** • ≤ 10

		• 11-49 • 50-249 • ≥ 250. Data reporting is performed for all segments.
Enterprises	Number of Enterprises	For all units whose main activity is fish processing, data collection is performed by segments according to the number of employees as follows: • ≤ 10 • 11-49 • 50-249 • ≥ 250. Data reporting is performed for all segments.

For enterprises whose secondary activity is fish processing, data on economic variables are collected for reporting according to the table below:

Variable group	*Variable*	*Methodology*
Number of enterprises	Number of enterprises	• Total (all enterprises)
Turnover attributed to fish processing	Turnover attributed to fish processing	

Full-Time-Equivalent (FTE) for the aquaculture and processing sector

The full-time equivalent (FTE) is a unit of measurement corresponding to the workload of a full-time employee.

This represents a value equal to the number of full-time employees of a company and is calculated by adding all the hours worked in a year by the staff, both part-time and full-time, and then dividing the result by the number of work hours of a full-time employee.

This determines the effort required to carry out a project expressed in FTE, regardless of the actual number of employees and changes in the work schedule in a given period.

Currently, seasonal and fixed-term workers are excluded from the FTE calculation.

Full-time equivalent (ENI) is collected and reported by gender.

$$\text{Full-Time-Equivalent (FTE)} = \frac{\text{no. total hours actually worked}}{\text{maximum number of hours in the reported period}}$$

3.3 Methodology used to choose the sampling framework and allocation scheme

The processing units with main activity according to NACE code 1020 were classified, according to the EU recommendations found in table 3C: Population segments for collection of economic and social time for the processing industry,

according to the number of employees, in 4 segments: companies ≤10 employees, companies with 11-49 employees, companies with 50-249 employees and companies ≥250 employees.

RO is one of the Member States that has decided to follow the extended program through which data are transmitted following the segmentation by size category provided for in Commission Decision 2010/93 / EU.

From the processing units with secondary activity the data collection and reporting is not performed by segments.

3.4 Methodology used to choose data estimation

Data processing from the aquaculture and processing sector, provided by economic operators through questionnaires, is entirely subjected to the generation of specific data, the correspondent of which can be found in Appendix XII of Commission Decision 93 of 2010.

If an economic, social or production variable has not been reported by a unit, it will be estimated by calculating the results from unit reports of the same type (from the same segment) and size. The type of error is biased, and the statistical calculation will be performed in accordance with the methodological provisions suggested by STECF - SGECA 10-03, namely the calculation of the response rate (RR) according to the following formula:

$$RR\ (\%) = \frac{Achieved\ number}{\text{frame population number}}\ x\ 100$$

3.5 Methodology used for data quality for the aquaculture and processing sector

The primary data obtained from respondents will be recorded, calculated according to the DCF recommendations, statistically processed and entered in the official documents of the Program.

The data obtained will also be presented in comparison with what was planned in the initial proposal. Any deviation from the initial proposal of the National Program regarding the methods used for data source selection, data collection type, sampling framework and allocation scheme, as well as the estimation procedures, will be explained.

The control process of the primary data will consist in going through the following stages:

- identification of extreme values from average values;

- evaluation of the cost structure and comparison with reference data from the previous year;

- correlation of the quantity and value of raw material with the quantity and value of assortments obtained and marketed.

Primary production, economic and social data provided by the economic operators through questionnaires are cross-checked with other data sources related to the processing activity, such as data from the balance sheet submitted by them on the website of the Ministry of Public Finance.

If there are any ambiguities regarding economic or production indicators, the data providers (accountants or administrators of the economic agents) are contacted in order to make clarifications or corrections if necessary.

If an economic, social or production variable has not been reported by a unit, it will be estimated by calculating the average resulting from the reporting of units of the same type (from the same segment) and size.

After a thorough verification, the data is centralized and processed according to the requirements of external users and uploaded on their platforms, in the required formats, as planned.

3.6 Methodology used to ensure data quality for the aquaculture and processing sector

The quality of data collected by RO for the processing sector is ensured taking into account the following recommendations which are detailed below.

Type of data collection is A: census

Definition and presentation of accuracy indicators

For the processing sector, the response rate calculation (RR) is performed as follows:

- **for units with main activity, the analysed sample is represented by each segment of employees (≤ 10, 11-49, 50-249, ≥ 250);**
- **for units with secondary activity, the analysed sample is represented by all data of the variable taken into account.**

The response rate (RR) **is reported as a percentage and is calculated according to the following formula:**

$$RR\ (\%) = \frac{Achieved\ number}{\text{frame population number}}\ x\ 100$$

Where:

Achieved Number is the number of respondents who supplied data in response to the census.

Coefficient of variation (CV) for the aquaculture and processing sector

The CV is required for the census when response rate is low (CV <70%), and it must be treated as if it were a Non-Probability Sample survey.

The coefficient of variation (CV) is an indicator of accuracy and is preferred when appropriate.

Coefficient of variation (CV) - is a relative measure of data dispersion. CV represents the evaluation of standard deviation in relation to the arithmetic mean.

CV is independent of the measurement units and intervenes in the study of homogeneity of some populations as follows:

- **if CV < 20% the population is relatively homogeneous;**
- **if 20% < CV < 30% the population is relatively heterogeneous;**
- **if 30% < CV the population is heterogeneous.**

Coefficient of variation = (standard deviation / mean value) * 100. With symbols:

$$CV = (SD / \overline{X}) * 100$$

The following formula applied for the frame population or for a sample (segment) is used to calculate the CV.

CV calculated for the frame population:

$$CV\ (\%) = \sigma / \mu * 100$$

CV calculated for a sample (segment):

$$CV\ (\%) = S / \overline{X} * 100$$

– **σ is the standard deviation for a population, which is the same as "S" for the sample.**

– **μ is the mean for a population, which is the same as $\overline{X}$ in the sample.**

<u>Standard deviation</u>

The standard deviation is calculated according to the formula:

$$S = \sqrt{\frac{1}{N-1} * \sum \left(D[n] - M_D \right)^2} = \sqrt{S^2}$$

Where:

N = {1, ..., N-1, N}

M_D = average value of data set D

S^2 = variance value

Given the definition for the variance of a data set D, it follows that the standard deviation is the square root of the variance value.

The standard deviation in Excel is calculated very simply using the STDEV statistical function for a given set of values.

Arithmetic mean is the central value measure of the data set around which data fluctuates in the set.

In statistics, the arithmetic mean of a set of variables is their sum divided by their number according to the formula:

$$\overline{X} = \frac{x1+x2+\cdots+xn}{n}$$

The arithmetic mean is influenced by extreme values, and the sum of differences between individual values of the series and the mean is always zero.

After calculating the coefficient of variation, the value shall be included in the corresponding level of accuracy as follows:

Depending on the CV value, the following levels of precision are established for the studied variables:

Level 0:	**coefficient of variation (CV) is higher than 20%**
Level 1:	**coefficient of variation (CV) is between 12.5% and 20%;**
Level 2:	**coefficient of variation (CV) is between 2.5% and 12.5%;**
Level 3:	**coefficient of variation (CV) is less than 2.5%.**
Level 4:	**exhaustive data collection.**

3.7 Management and use of data from the aquaculture and processing sector

I.C.D.E.A.P.A. Galați complies with Regulation 199/2008 (art. 17-20) regarding the sending and availability of data.

Primary data collected will be available to the supplier, deliverable under PNCD - INCDM Constanța and ANPA for transmission to international scientific organizations and relevant scientific bodies within the regional fisheries management organizations (GFCM) in accordance with the international obligations of the EU and Member States.

Detailed and compiled data will be transmitted in secure electronic format.

Where detailed and compiled data are required for specific scientific analysis, it is ensured that the data will be provided to end-users.

Given Romania's reporting obligations to: FAO, GFCM, EC-DGMARE / JRC main data requesters, EUROSTAT, INS, MADR, etc., it is necessary that basic, aggregated and meta-data can be used / accessed from a single source in compliance with the requirements, the EU legislative provisions.

RA is provided in two physical documents, a file that contains the report text in a Microsoft Word document (a PDF file from the Word document that accompanies the presentation), and a file that contains the standard tables in Excel.

The annual reports are prepared by RO, reviewed by independent experts and evaluated by STECF in two dedicated annual meetings. On the basis of the STECF proposals, DG MARE approves the programs and reports.

Uploading data to the JRC server is done in accordance with data management procedures.

The use of data collected under the umbrella of the EU Data Collection Framework (DCF) is regulated by Regulation (EC) no. 199/2008 of the Council from 25 February 2008: Articles 18 and 20.

The use of data collected under the umbrella of the EU Data Collection Framework (EU-MAP) is regulated by Regulation (EC) no. 1004/2017.