

Description of the socio-economic data collection methodology of the aquaculture sector in Bulgaria

Census

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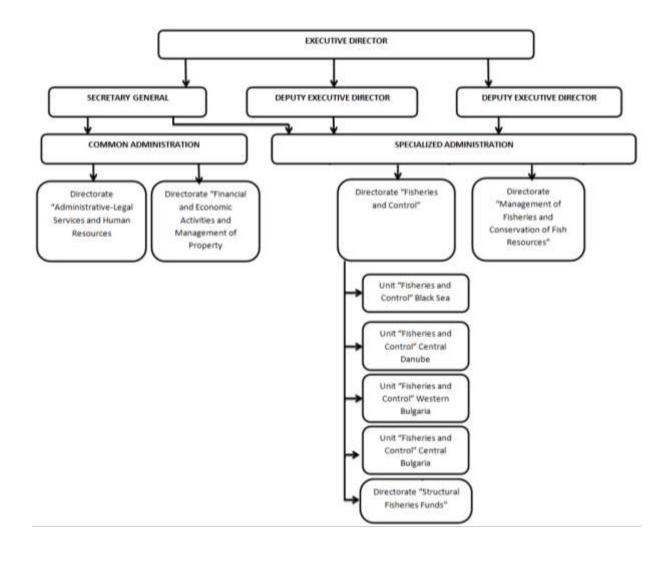
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1. General information about Executive agency for fisheries and aquaculture as responsible authority for fisheries control and data collection.

The responsible authority for fisheries control in Bulgaria is the Executive Agency for Fisheries and Aquacultures (EAFA). The Agency is organized by General administration (Accounting office, Human resources and Legal Services) and Specialized administration (Fisheries control, Structural Fisheries Funds and Management and monitoring of fish resources. The activities related to the fisheries and aquaculture control are carried out by Directorate "Fisheries and Control" which is divided by several units on geographical basis as follows:

- Unit "Fisheries and control Black Sea". This unit is responsible for fisheries control in the Black Sea waters, inland fishing activities, aquaculture and market, collection, initial verification, registration of the questionnaires for socio-economic statistics for the fleet, aquaculture and processing enterprises and uploading of the scanned document in EAFA's information system. unit "Fisheries and control Black Sea" it is composed by 3 sections:
 - Sector "Fisheries and Control Burgas" responsible for inspection and control activities in Black Sea, inland waters, aquaculture farms, marketing, transportation of fisheries products and collection of the questionnaires for socio-economic statistics in the area of Burgas region;
 - Sector "Fisheries and Control Varna" responsible for inspection and control
 activities in Black Sea, inland waters, aquaculture farms, marketing, transportation
 of fisheries products and collection of the questionnaires for socio-economic
 statistics in the area of Varna region;
 - Sector "Fisheries and Control Dobrich" responsible for inspection and control
 activities in Black Sea, inland waters, aquaculture farms, marketing and
 transportation of fisheries products transportation and collection of the
 questionnaires for socio-economic statistics in the area of Dobrich region;
- Unit "Fishing Monitoring Centre" responsible for monitoring and surveillance of fishing vessels.
- Unit "Fisheries and Control Western Bulgaria" it is located in Sofia and it is responsible for inspection and control activities in Danube and inland waters, aquaculture farms, marketing and transportation of fisheries products and collection of the questionnaires for socio-economic statistics in the area of regions of Sofia, Pernik, Kyustendil, Blagoevgrad, Vratsa, Montana and Vidin.
- Unit "Fisheries and Control South Bulgaria" it is located in Plovdiv and it is responsible for inspection and control activities in inland waters, aquaculture farms, marketing and transportation of fisheries products and collection of the questionnaires for socio-economic statistics in the area of regions of Plovdiv, Pazardjik, Smolyan, Kardjali, Haskovo, Sara Zagora, Sliven and Yambol;
- Unit "Central Danube" it is located in Ruse and it is responsible for inspection and control
 activities in Danube and inland waters, aquaculture farms, marketing and transportation of
 fisheries products and collection of the questionnaires for socio-economic statistics in the
 area of regions of Pleven, Lovech, Gabrovo, Veliko Tarnovo, Ruse, Silistra, Targovishte,
 Shumen and Razgrad.

The Agency's organization chart is presented below.



2. Schematic overview of systems in place for recording logbook for sale from aquaculture farms data, transport documents and sales notes.

2.1. Paper logbook for sale from aquaculture farms:

It is applicable for all aquaculture farms. A copy of all declarations should be submitted to EAFA until the end of the month of the declarations. The data from declarations shall be recorded into EAFA informational-statistical system no later than the 10th of the month after receiving of declaration.

2.2. Transport documents and sales notes:

At the moment they are only in paper format. All these documents shall be presented to EAFA within 48 hours after the relevant activity is completed. The data from these documents are recorded into our informational-statistical system.

3. Cross-checking of data.

3.1 Description of the cross-checking of paper-based documents and the cross-checking of data provided electronically of logbook data, landing declarations, transport documents, take-over declarations and sales notes.

The Informational-statistical system is carrying out the following automatic cross-checks, by comparing data from different sources (logbook, landing declarations, sales notes, transport documents, takeover declarations, late submission of documents, lack of referent document etc.).

Data source	Referent data source		Description
Logbook: date	Landing declaration: date of submission in EAFA office	landing declaration	The landing declaration shall be submitted to EAFA not later than 48 hours after the landing. For the aquacultures this period is 30 days.
Logbook: species and catches, kg	Take-over declaration: species and catches, kg	Discrepancy in the type and quantity of catches	
Logbook: species and catches	Landing declaration: species and catches	Difference for same species less than 10% of logbook weight	System error signal when the difference between the quantity taken and landed is > = 10%
Logbook: species and catches	First sale note: species and catches	Discrepancy in the type and quantity of catches	The system assumes that there may be several documents for the first sale, so the quantities are summing by comparing them with the logbook declaration
Logbook: species and catches	Transport document: species and catches	Discrepancy in the type and quantity of catches	The system assumes that there may be several transport documents, so the quantities are summing by comparing them with the logbook declaration
Take-over declaration: date	Take-over declaration: delivery date in the department of EAFA	Later delivered take- over declaration in the department of EAFA	Copy of the take-over declaration should be submitted in EAFA within 48 hours
Take-over declaration	Transport document	No reference document	No related documents for the entered document
Take-over declaration	First sale note	Discrepancy in the type and quantity of catches	
Take-over declaration	Landing declaration	No reference document	No related documents for the entered document
First sale note: date	First sale note: delivery date in the department of EAFA	Later delivered first sale note in the department of EAFA	should be submitted in the department of EAFA within 48 hours
First sale note	Take-over declaration	No reference document	No related documents for the entered document
First sale note	Landing declaration	No reference document	No related documents for the entered document
First sale note	Transport document	No reference document	No related documents for the entered document
Transport document: date	Transport document: delivery date in the department of EAFA	_	Copy of the transport document should be delivered in the department of EAFA within 48 hours

In the information-statistical system of the Executive Agency for Fisheries and Aquaculture data verification is done by cross-checks, which are organized in a separate module. This "cross-checking" module correlate input data, such as the basic rules for checking are given in the table above. After detecting the error, the system generates a message that identifies the regional office, which entered the document in the system. The message indicates the type of error and assigns a unique number to it. The system allows immediately open the document, which has led to the generation of error

The system checks the input data every 24 hours and generates error messages. In case the missing data is filled in, the system automatically removes the error. The system keeps information for all detected errors and allows checking by error type, by regional inspectorate and by period at any time.

3.2 Process for following up inconsistencies and errors identified by the cross-checking of data.

When inconsistence is identified, the system shows information about the error, including unique ID, type of error, date of occurrence, regional office and reason. The errors are visible to the staff of the relevant office, which is in charge to fill the necessary information and the reason for this inconsistence (the purpose of the fish is confused etc.). After taking measures to eliminate the discrepancy and filling the explanations, the case can be closed

4. Description of the data collection scheme and sampling method for economic and social variables for the aquaculture farms.

The annual questionnaire for aquaculture enterprises consists of 2 parts – in the first page the owner should fill his name, phone number, name of the enterprise, unique number of the enterprise, detailed information about the production, sales from the enterprise and the fish that was not sold at the end of the year and the environmental data on aquaculture. In this page there is also special place for explanation notes, if the owner would like to explain something about the production of the fish. On the second page of the questionnaire the owner should fill the economic and social variables indicated in Table 10 and Table 9 from COMMISSION DELEGATED DECISION (EU) 2021/1167. The collection of all variables is compliant with relevant PGECON/RCG ECON recommendations.

4.1 Type of data collection scheme.

The data collection scheme for the aquaculture sector in Bulgaria is **Census and the sampling unit** is an aquaculture farm. Based on our legislation (Art. 27 from the Fisheries and Aquaculture Act), every owner of an aquaculture farm which is in the register of the aquaculture farms in EAFA, or his representative, is required at the beginning of each year (before January 31) to submit economic and social information for the previous year. The sampling method that we are using is to collect questionnaires for all the aquaculture farms.

4.2 Update the questionnaire to comply with the latest legislation and the needs of the data collection program in Bulgaria.

Every year the Executive Director of EAFA affirms the content and the type of questionnaire, which is prepared by the relevant data collection experts. The questionnaire is completed manually by the owner of the enterprise, his representative /like accountant/ in the presence of an employee (someone from the administration) of the agency who is trained for this and is aware of the

meaning of economic and social indicators. If necessary, the employee explains some of the variables. The filling of the questionnaire is completed after the owner and the employee of EAFA put their signatures and the questionnaire is entered in the electronic record-keeping system of the Agency.

4.3 Data validation procedure

The first quality checks of the questionnaire are made by the employee of EAFA who receives the questionnaire – this initial check is focused mainly on the amount of data filled in. The second check is done by the person who submits the data from the questionnaire in the database of EAFA. If at this stage of the processing of the questionnaire are detect any inconsistencies or value that is not logical, based on parameters of the enterprise, number of employees, reported production and sales or any other parameter, an employee of the agency contacts the owner of the enterprise and if he is not able to provide a logical explanation, he is obliged to come and edit the value.

4.4 Estimation procedures

Estimation procedures were made only for the previous years (before 2014), in which the questionnaire was not mandatory and there was missing information. Since now the collection of questionnaires is from all aquaculture farms, no estimation is needed, because they are required to submit all the data. If for some reason after 31st of January some of the owners had not reported data for the previous year, an employee of the agency contacts the owner and reminds him of this obligation. In addition, administrative sanction can be imposed to the owner for not fulfilling obligations to report socio-economic information.

5. Methodology used for collection of the variables

In order to improve the collection, quality and comparability of the different variables among MS the guidelines on socio-economic variables contain definitions and methodology for the variables requested under the EU MAP from 2022 are used. The guidelines are prepared by the experts from all MS in the regional coordination group on the economic issues (RCG ECON, former PGECON) and they are living documents. Moreover, the definitions for the variables agreed by all MS with the issuing of the Economic Issues Regional Work Plan for data collection in the fisheries, aquaculture and fish processing sectors 2025-2027 under RCG ECON is also implemented. Following the Guidance Document for the Aquaculture (Page 109-119 of the RCG ECON 2023 http://dcf-bulgaria.bg/wp-content/uploads/2024/10/2023_RCG-ECON TM-Report) report final.pdf, Social data http://dcf-bulgaria.bg/wpcontent/uploads/2021/10/EUMAP_guidance_SOCIAL.pdf, and ECON_RWP_2025-2027 http://dcf-bulgaria.bg/wp-content/uploads/2024/10/ECON_RWP_2025-2027.pdf, the variables are collected as follow:

VARIABLE GROUP	Variable	Definition	PGECON advice	Methodology used
INCOME	Gross sales per species	Value of output from aquaculture sold during the year = DCF Turnover		Derived from administrative source The data source is the official national statistics on sales – sales notes.
	Operating subsidies	Direct payments which general government or the institutions of the European Union make to resident producers. Excluding investment subsidies and (e.g. COVID) subsidies, directly paid to persons = DCF Subsidies		Obtained directly from survey
	Subsidies on investments	Direct payments which general government or the institutions of the European Union make to resident producers to finance all or part of the costs of their acquiring assets.		Obtained directly from survey Obtained from administrative sources

VARIABLE GROUP	Variable	Definition	PGECON advice	Methodology used
	Other income	Other operating income included in company accounts which are excluded from turnover; income coming from other activities than aquaculture, e.g. the licensing of ponds for recreational fishery purposes. Other income, not shown under other headings. Exclude extraordinary and financial incomes. = DCF Other income		Obtained directly from survey "Other income" refers to other operating income included in company accounts which are excluded from turnover; income coming from other activities than aquaculture, e.g. the licensing of ponds for recreational fishery purposes Other income, not shown under other headings. Extraordinary and financial income should be excluded.
OPERATING COSTS	Personnel costs	Personnel costs are defined as the total remuneration, in cash or in kind, payable by an employer to an employee (regular and temporary employees as well as homeworkers) in return for work done by the latter during the reference period. Personnel costs also include taxes and employees' social security contributions retained by the unit as well as the employer's compulsory and voluntary social contributions. = DCF Wages and Salaries		Obtained directly from survey
	Value of unpaid labour	Unpaid labour = Work that produces goods or services but is unremunerated. = DCF Imputed value of unpaid labour		Obtained directly from survey

VARIABLE GROUP	Variable	Definition	PGECON advice	Methodology used
OPERATING COSTS	Energy costs	Purchases of all energy products during the reference period should be included in this variable only if they are purchased to be used as fuel. Energy products purchased as a raw material or for resale without transformation should be excluded		Obtained directly from survey
OPERATING COSTS	Livestock costs	Costs of livestock during the year.		Obtained directly from survey
OPERATING COSTS	Feed costs	Costs of feed used for aquaculture production during the year.		Obtained directly from survey
OPERATING COSTS	Repair and maintenance	The regular maintenance and repair of fixed assets used in production (items not treated as gross capital formation)		Obtained directly from survey
OPERATING COSTS	Other operating costs	Other operating costs should comprise outsourcing costs, property or equipment rental charges, the cost of raw materials and supplies that cannot be held in the inventory and have not been already specified (i.e. water, small items of equipment, administrative supplies, etc.), insurance premiums, studies and research costs, external personnel charges, fees		Obtained directly from survey

VARIABLE GROUP	Variable	Definition	PGECON advice	Methodology used
		payable to intermediaries and professional expenses, advertising costs, transportation charges, travel expenses, the costs of meetings and receptions, postal charges, bank charges (but not interest on bank loans) and other items of expenditure. On the Structural Business Statistics is included inside 13 11 0 "Total purchases of goods and services".		
CAPITAL COSTS	Consumption of fixed capital	Decline in value of fixed assets, as a result of normal wear and tear and obsolescence. The estimate of decline in value includes a provision for losses of fixed assets as a result of accidental damage which can be insured against. = DCF Depreciation of capital		Obtained directly from survey Represents the reduction in the value of the fixed assets used in production during the accounting period resulting from physical deterioration, normal obsolescence or normal accidental damage (EC study No. FISH/2005/03).
INVESTMENTS	Investments in tangible assets	Net Investments "Purchase and sale of assets during the year" Gross investment in tangible and intangible goods minus sales of tangible and intangible investment goods.		Obtained directly from survey "Purchase and sale of assets during the year" Investment during the reference period in all tangible goods. Included are new and existing tangible capital goods, whether bought from third parties, acquired under a financial lease contract (i.e. the right to use a durable good in exchange for rental payments over a predetermined and protracted term) or produced for own use (i.e. Capitalised production of tangible capital goods), having a useful life of more than one year including non-produced tangible goods such as land. The threshold for the useful life of a good that can be capitalised may be increased according to company

VARIABLE GROUP	Variable	Definition	PGECON advice	Methodology used
				accounting practices where these practices require a greater expected useful life than the 1 year threshold indicated above.
				All investments are valued prior to (i.e. gross of) value adjustments, and before the deduction of income from disposals. Purchased goods are valued at purchase price, i.e. transport and installation charges, fees, taxes and other costs of ownership transfer are included. The value of goods acquired via financial lease corresponds to the market value of the good if it had been purchased in the year of acquisition only. This value is in principle known in the contract or can be estimated by summing-up the part of the instalments that cover the capital reimbursement. The part of instalments corresponding to the interest payments are to be excluded. Own produced tangible goods are valued at production cost. Goods acquired through restructuration (such as mergers, take-overs, break-ups, split-off) are excluded. Purchases of small tools which are not capitalised are included under current expenditure.
				Sales of tangible goods includes the value of existing tangible capital goods, sold to third parties. Sales of tangible capital goods are valued at the price actually received (excluding VAT), and not at book value, after deducting any costs of ownership transfer incurred by the seller. Value adjustments and disposals other than by sale are excluded

VARIABLE GROUP	Variable	Definition	PGECON advice	Methodology used
FINANCIAL RESULTS	Financial income	Income from investments and loans forming part of the fixed assets, and other interest receivable. Financial costs, net = Financial expenditures – Financial income		Obtained directly from survey Consider: Income from participating interests, with a separate indication of that derived from affiliated undertakings. Income from other investments and loans forming part of the fixed assets, with a separate indication of that derived from affiliated undertakings. Other interest receivable and similar income, with a separate indication of that derived from affiliated undertakings.
	Financial expenditures	Interest payable and similar charges. Financial costs, net = Financial expenditures – Financial income		Obtained directly from survey Considers the Interest payable and similar charges, with a separate indication of those concerning affiliated undertakings.
FINANCIAL POSITION	Total assets	An economic asset is a store of value representing the benefits accruing to the economic owner by holding or using the entity over a period of time. It is a means of carrying forward value from one accounting period to another. = DCF Total value of assets		Obtained directly from survey
	Gross Debt	Amount of money borrowed to be used to finance activities of the aquaculture enterprise.		Obtained directly from survey

VARIABLE GROUP	Variable	Definition	PGECON advice	Methodology used
RAW MATERIAL WEIGHT	Livestock used	Weight of purchased livestock that is meant for production, includes purchase of breeding stocks. Livestock refers to all fish and aquatic species kept or reared in captivity mainly for aqua cultural purposes. = DCF Raw material volume: Livestock		Obtained directly from survey
	Fish Feed used	Quantities of feed used for fish and other aquatic species for aquaculture production. = DCF Raw material volume: Feed		Obtained directly from survey
WEIGHT OF SALES	Weight of sales per species	Volume of output from aquaculture sold during the year, including production from hatcheries and nurseries offered for sale = DCF Total sales volume		Derived from administrative source The data source is the official national statistics on sales – sales notes.
	Paid labour	Total number of persons who have worked in the enterprise, irrespective of the total number of hours. Total employees = Persons employed + unpaid labour		Obtained directly from survey
EMPLOYMENT	Unpaid labour	Number of persons who have worked for the enterprise that have not received compensation in the form of wages, salaries, fees, gratuities, piecework pay or remuneration in kind. Total employees = Persons employed + unpaid labour		Obtained directly from survey

VARIABLE GROUP	Variable	Definition	PGECON advice	Methodology used
EMPLOYMENT	Full-time equivalent (FTE)	Unit expressing the number of employees into full-time workers (usually defined in the national law) Total FTE = Persons employed (FTE) + unpaid labour (FTE)		Obtained directly from survey
	Unpaid labour (FTE)	Number of persons who have worked for the enterprise that have not received compensation in the form of wages, salaries, fees, gratuities, piecework pay or remuneration in kind.		Obtained directly from survey
EMPLOYMENT	Number of hours worked by employees and unpaid workers (optional)	The aggregate number of hours worked (by total employees) during the reference period.		Obtained directly from survey
NUMBER OF ENTERPRISES	Number of enterprises ((by size category)	Number of aquaculture enterprises in each size category (≤5; 6-10 and >10 in terms of number of persons employed).		Derived from official Administrative sources (license list exist in EAFA)

VARIABLE GROUP	Variable	Definition	PGECON advice	Methodology used
	Employment by gender	Total employment (paid labour and unpaid labour) as defined for the fleet, aquaculture and processing sector economic variables by gender	 Data should be raised to the total population. Employment data reported in the social data calls should be consistent with the data reported under the Fleet and Aquaculture 	Obtained directly from survey PGECON recommends to follow Eurostat practice and separate social variable "Employment by gender" in the following groups: - "Male"; - "Female"; - "Unknown" (only if needed).
SOCIAL VARIABLES	FTE by gender	The number of employees converted into full time equivalent jobs (FTE). Fleet: People working only onshore and paid from vessels should be included if their activity has a direct link with the fishing operations. Employment on shore should include those activities, which directly related to small-scale fisheries and mostly carried out by fishers and their family members, but not entirely related to other economic sectors and specialties.	data calls. 3. PGECON recommends to stratify employment data for the social data call related to the EU fleet by supra region, geo-indicator, fishing activity (SCF, LSF and DWF) and main fleet segments, when possible. It is suggested to follow main AER group definitions as close as possible. For the employment data for the social data call related to the EU aquaculture sector, it is recommended to follow the same segmentation as for the aquaculture data call when possible, or at least to disaggregate by marine (finfish), freshwater	Obtained directly from survey PGECON recommends to follow Eurostat practice and separate social variable "Employment by gender" in the following groups: - "Male"; - "Female"; - "Unknown" (only if needed). Figures for the number of persons working less than the standard working time of a full-year full-time worker, should be converted into full time equivalents, with regard to the working time of a full-time full-year employee in the unit. It is the total hours worked divided by the average annual number of hours worked in full-time jobs within the economic territory. Since the length of a full-time job has changed through time and differs between industries, methods which establish the average proportion and average hours of less than

VARIABLE GROUP	Variable	Definition	PGECON advice	Methodology used
			(finfish) and shellfish. 4. It needs to be further investigated the trade-offs of providing the data for a particular date in the year so that duplications are avoided (e.g. when fishers are moving from one vessel to another during the year) or cover the whole year to include seasonal patterns.	full-time jobs in each job group have to be used. A normal full-time week must first be estimated in each job group. If possible, a job group can be defined, inside an industry, according to sex and (or) kind of work of people. Hours contractually agreed upon can constitute for employee jobs, the appropriate criteria for determining those figures. Full-time equivalent is calculated separately in each job group, then summed. Included in this category are people working less than a standard working day, less than the standard number of working days in the week, or less than the standard number of weeks/months in the year. The conversion should be carried out on the basis of the number of hours, days, weeks or months worked.
	Unpaid labour by gender	Unpaid labour, as defined for the fleet, aquaculture and processing sector economic variables by gender		Obtained directly from survey PGECON recommends to follow Eurostat practice and separate social variable "Employment by gender" in the following groups: - "Male"; - "Female"; - "Unknown" (only if needed).

VARIABLE GROUP	Variable	Definition	PGECON advice	Methodology used
	Employment by age	Total employment (paid labour and unpaid labour) as defined for the fleet, aquaculture and processing sector economic variables in the various age classes: <=14; 15-24; 25-39; 40-54; 55-64; >=65; Unknown		Obtained directly from survey
	Employment by level of education	Total employment (paid labour and unpaid labour) as defined for the fleet, aquaculture and processing sector economic variables in the various education levels: - Low for education levels 0-2 (ISCED2011 and ISCED1997); - Medium for education levels 3-4 (ISCED2011 and ISCED1997); - High for education levels 5-8 (ISCED2011), levels 5-6 (ISCED1997); - "Unknown"		Obtained directly from survey

VARIABLE GROUP	Variable	Definition	PGECON advice	Methodology used
	Employment by nationality	Total employment (paid labour and unpaid labour) as defined for the fleet and aquaculture and processing sector economic variables in the various nationality categories: National; EU; EEA; Non-EU/EEA; "Unknown".		Obtained directly from survey
	Employment by employment status	Total employment (paid labour and unpaid labour) as defined for the fleet and aquaculture sector economic variables in the various employment status categories: - Owner (vessel owner involved in vessel activity/operation); - Employee (all engaged workers onboard, excluding owners). - Unknown.		Obtained directly from survey

6. Data storage and Confidentiality

All data from questionnaires is entered and stored in the electronic record-keeping system of the Agency.

The raw and disaggregated data is treated as confidential as well as all personal data according to REGULATION (EU) 2016/679 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data, and repealing Directive 95/46/EC (General Data Protection Regulation).

By Order, No RD-212/27.05.2020 of the executive director of EAFA an information security management system was approved. The security management system consists of 21 documents, which are not published online due to security reasons, but all the employees in the agency are obliged to follow them. Within the documentation, protocols to enforce confidentiality are available.