Aquaculture

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2. Metadata update	
2.1. Metadata last certified	July 11, 2025
2.2. Metadata last posted	July 11, 2025
2.3. Metadata last update	July 11, 2025

3. Statistical presentation

3.1. Data description

Survey of Aquaculture Holdings is the main source of data on aquaculture. Final outputs of the survey in line to area of waterbodies for aquaculture, fish production, fish in waterbodies by the end of year, farm gate price of fish.

- Area of waterbodies of aquaculture – implies data on area of waterbodies for aquaculture and it includes as total area (pond, pool, lake/part of lake, part of river, part of sea), as well as by types of waterbodies. Noteworthy, information on ponds and pools can be disaggregated by country and regional level.
- Fish production – implies information on fish production both total and by fish family (Salmonidae, Cyprinidae, Sturgeon, Siluridae, etc.). It includes data on large scale production fish species such as rainbow trout, common carp, mirror carp, grass carp, silver carp and bighead carp, etc. Overall information on fish of which salmonidae, cyprinidae, and some of species (rainbow trout, common carp, mirror carp, grass carp, silver carp and bighead carp) can be obtained as country as regional level.
- Fish in waterbodies – implies information on amount of fish in waterbodies both total and by fish family (Salmonidae, Cyprinidae, Sturgeon, Siluridae, etc). It includes data on large scale fish species such as rainbow trout, common carp, mirror carp, grass carp, silver carp and bighead carp, etc. Overall information on fish of which rainbow trout, common and mirror carp, grass carp, silver carp and bighead carp can be obtained as country as regional level.
- Farm gate price of fish – implies prices per fish species: rainbow trout, common and mirror carp, grass carp, silver carp and bighead carp, russian sturgeon and siberian sturgeon, wels catfish.

3.2. Classification system

3A Species Codes (ASFIS):
http://www.fao.org/cwp-on-fishery-statistics/handbook/general-concepts/identifiers-for-aquatic-animals-and-plants/en/

3.3. Sector coverage

Aquaculture holdings.

3.4. Statistical concepts and definitions

Waterbodies for aquaculture – waterbodies used for breeding of aquatic species. Types of reservoire are: pool, pond, lake, part of lake, part of reservoire, part of river and part of sea.
Pool – water accumulated in constructed tranches or in reservoirs, made with construction materials.
Pond – water accumulated in natural tranches. It can be artificial or natural accumulation.
Lake – water accumulated in natural reservoir (cavern).
Reservoir – water accumulated for distinct reasons as naturally, as artificially (irrigation, hydroenergetic, etc.).
Fish production – volume of produced fish extracted from waterbodies intending for sale, feeding, recycling, feeding of domestic animals and poultry, etc.

3.5. Statistical unit

Aquaculture holding – economic entity whose economic activity in line to aquaculture in spite of its size, legal status,

ownership type and purpose of production.

3.6. Statistical population

Survey sampling frame includes aquaculture holdings operated in country. Sources of the sampling frame are agriculture census and statistical business register. Sampling frame is updated on a regular basis through the Survey of Agricultural Holdings and administrative sources.

3.7. Reference area

Entire country (Georgia), excluding occupied regions.

3.8. Time coverage

Since 2017.

3.9. Base period

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4. Unit of measure

- Hectare (area of waterbodies for aquaculture);
- Tons (fish production, fish in waterbodies);
- Georgian Lari (GEL) (fish prices).

5. Reference period

Year.

6. Institutional mandate

6.1. Legal acts and other agreements

The Law of Georgia on Official Statistics;
https://www.geostat.ge/media/56202/The-Law-of-Georgia-on-Official-Statistics.pdf
Statistical Work Programme (annual);
https://www.geostat.ge/en/modules/categories/307/statistical-work-programme
Charter of the National Statistics Office of Georgia.
https://www.geostat.ge/media/67749/New-Chapter-eng-upd.pdf

6.2. Data sharing

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7. Confidentiality

7.1. Confidentiality – policy

1. The Law of Georgia on Official Statistics:
   - According to the article 5 of the law Statistical confidentiality and exclusive use for statistical purposes – individual data collected or received by the producer of official statistics, relating to natural or legal persons, must be strictly confidential and used only for statistical purposes.
   - According to the article 34 (Observing Confidentiality of Statistical Data) of the law 1. Data collected, processed, and stored to produce official statistics are confidential if they enable the direct or indirect identification of a statistical unit. In addition, aggregated data are subject to statistical confidentiality: a) Aggregates composed of 1 to 3 units, when the unit is a natural or legal person if one of these units could be identified indirectly, thereby disclosing individual data about this unit. Aggregates composed of more than 3 units may be declared confidential by the Executive Director if required to ensure statistical confidentiality; b) Information declares as a state secret on the basis of the „Law of Georgia on State Secrets". 2. Confidential data shall be used exclusively for the purposes of producing statistics in accordance with this law. 3. Statistical data about the administrative body cannot be considered confidential information, except for the information determined by the Law of Georgia „On State Secrets". 4. Individual data obtained from publicly available sources, which are defined as public information in accordance with the legislation of Georgia, shall not be considered confidential information. 5. Confidential (individual) data may be published if there is written consent from the statistical unit regarding the publication of such data. 6. It is not allowed to disseminate and distribute confidential data or use it for non-statistical purposes.
   - According to the article 38 (Confidentiality commitments) of the law the confidential statistical data collected and processed for statistical purposes shall not be used or disseminated either for personal, academic, research

or any other activities, by the employees of the producers of Official Statistics.
https://www.geostat.ge/media/56202/The-Law-of-Georgia-on-Official-Statistics.pdf

2. Data Confidentiality Policy at Geostat
https://www.geostat.ge/media/20860/Data-Confidentiality-Policy-at-Geostat_En.pdf
3. Procedure for providing access to confidential data for research purposes
https://www.geostat.ge/media/61533/Rule-on-Access-to-Confidential-Data-for-Scientific-and-Research-Purposes....pdf
4. The Law of Georgia on Personal Data Protection
https://matsne.gov.ge/en/document/view/1561437?publication=9

7.2. Confidentiality – data treatment

- Confidentiality guidelines.
- Written undertakings by an employee of Geostat on ensuring confidentiality of gained/collected data as a result of official duties.

8. Release policy

8.1. Release calendar

Data dissemination dates are defined by the calendar developed on the basis of the Statistical Work Programme, which is published on the website of Geostat and is publicly available.

8.2. Release calendar access

https://www.geostat.ge/en/calendar

8.3. User access

All users have the equal access to the statistical data simultaneously.

9. Frequency of dissemination

Annual.

10. Accessibility and clarity

10.1. News release

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10.2. Publications

Aquaculture statistics data are available in following publications:
https://www.geostat.ge/en/single-categories/128/aquaculture-in-georgia

10.3. On-line database

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10.4. Micro-data access

Rule on Access to Confidential Data for Scientific and Research Purposes:
https://www.geostat.ge/media/61533/Rule-on-Access-to-Confidential-Data-for-Scientific-and-Research-Purposes....pdf

10.5. Other

Statistical data on Aquaculture additionally are disseminated using social network (Facebook).

10.6. Documentation on methodology

„Guidelines to Enhance Fisheries and Aquaculture Statistics through a Census Framework". Food and Agriculture Organization of the United Nations. 2015:
https://www.fao.org/3/ca6405en/ca6405en.pdf

10.7. Quality documentation

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11. Quality management

11.1. Quality assurance

To ensure the quality of the statistical processes and products Geostat follows Chapter 10 – Quality of official statistics – of the Law of Georgia on Official Statistics, as well as the European Statistics Code of Practice, the UN Fundamental Principles of Official Statistics and Quality Assurance Framework of the European Statistical System (ESS QAF).

11.2. Quality assessment

Methodology and Quality Management Division of Geostat, along with the sectoral departments, is responsible for the

quality of the produced statistical products and processes. The Division carries out quality audit, self-assessment of statistical processes and assesses the risks for the quality of statistical processes and products. Geostat has developed policy documents, guidelines and standard routine descriptions. These documents ensure the standardization of statistical processes and products and the establishment of a unified quality assurance system.
Quality policy is available on the following link:
https://www.geostat.ge/media/44380/QP_Geostat_EN.pdf

12. Relevance

12.1. User needs

The main stakeholders of data on aquaculture are: governmental institutions, educational institutions, scientific institutions, different business sector representatives, researchers and students, international organizations, media outlets, etc.
They need these data to carry out different types of statistical analysis, to plan a marketing strategy or to evaluate and study the economic situation.

12.2. User satisfaction

In 2023 user satisfaction survey was conducted, the target of the survey was to analyze the assessment of quality of statistical data by users and explore ways to improve user services. The survey report is available on the website of Geostat:
https://www.geostat.ge/en/page/customer-service

12.3. Completeness

The data are comparable to international standards.

13. Accuracy and reliability

13.1. Overall accuracy

Data accuracy is ensured by comparability of survey and calculation methods to international methodology.

13.2. Sampling error

Sampling error of main indicators do not exceed 5% for a country level and 10% for a regional level.

13.3. Non-sampling error

Non-sampling error examples during the Survey of Aquaculture holdings are: errors made during a data collection by an interviewer, non-response, under coverage and over coverage, errors during an imputation and data processing.

14. Timeliness and punctuality

14.1. Timeliness

Data is disseminated in July after the reference year.

14.2. Punctuality

The data is published according to the date specified in the statistical work program. There has not been any violation of publication dates.

15. Coherence and comparability

15.1. Comparability – geographical

The same methodological approaches are used for all regions of Georgia and they are comparable to international standards.

15.2. Comparability – over time

Data are comparable.

15.3. Coherence – cross domain

The data is coherent.

15.4. Coherence – internal

The data is coherent.

16. Cost and burden

The total budget of the Survey of Aquaculture holdings has been amounted 8.2 thousand in 2024. Survey data are collected using android based tablets, via CAPI method. Adaptation this method significantly shorts time spent for the filling of questionnaire and decreases respondent burden.

17. Data revision

17.1. Data revision – policy

Statistical data revision policy is available on the website of Geostat:
https://www.geostat.ge/media/59824/Data-Revision-Policy-and-Error_Correction-at-Geostat_Eng.pdf

17.2. Data revision – practice

The statistical data revisions and adjustments are made on a regular basis rely on relevant sources. In addition, a large-scale revision is performed once a year to obtain verified data. Main purpose of this procedures to obtain statistically valid data.

18. Statistical processing

18.1. Source data

Primary data are obtained from the Survey of Aquaculture Holdings.

18.2. Frequency of data collection

Annual.

18.3. Data collection

Since 2017 survey data are collected via tablet based computer-assisted personal interviewing (CAPI) methods. Such method is used both household and enterprise surveying.

18.4. Data validation

The primary logical controls are made by algorithms implemented in android based tablets, which notifies an interviewer on logical errors or mismatching of obtained information. Questionnaires filled by interviewers are sent to field work supervisors in order to retrieve and check data errors or arithmetical mistakes. If such cases will be occurred, field supervisors send the questionnaires back to interviewers for farther correction or adjustment. The final data cleaning and harmonization are made by staff of Agriculture and Environment Statistics department of GEOSTAT. During this process the dubious data and outliers are retrieved, checked and adjusted. For the data validation strongly used comparison of obtained data to previous time series on a micro data level or other valid sources. In case of significant outliers, the main reason of it should be detected and analyzed.

18.5. Data compilation

After data cleaning and statistical weight calculation, indicators are calculated using weighted data. For the calculation of area of water bodies for aquaculture, fish production, fish in water bodies at the end of year, the following formula is used:

$$\sum_{i=1}^{n} W_i \cdot X_i$$

Where, n is number of surveyed holdings, W_i – i- holding weight, while X_i – area of waterbodies operated by holding/fish production/fish in waterbodies within i aquaculture holding.

Fish price is calculated using following formula:

$$\frac{\sum_{i=1}^{n} W_i \cdot I_i}{\sum_{i=1}^{n} W_i \cdot P_i}$$

where, n is number of surveyed holdings, W_i – i- holding weight, I_i – income obtained from sale fish by i holding, while P_i – volume of fish sold by i holding.

18.6. Adjustment

Not applicable.

19. Comment

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