

Methodological Aspects of Analyzing and Assessing the Per Capita Consumption of Fish and Seafood in the Russian Federation



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Abstract. Globalization of the economy and increased competition leads to the need to strengthen the functions of the Russian government to ensure food security of the country and, accordingly, the consolidation of mechanisms of state regulation of agricultural economy and food markets. The importance of solving the problems of information security, a high degree of reliability of the information provided by the Government of the relevant statistical authorities is growing. The relevance of obtaining high-quality statistical information for the adoption of timely and informed decisions by the government on the management of the national economy has increased significantly during the period of political and economic confrontation between Russia and the West in terms of sanctions and counter-sanctions. Taking fishing industry and its product – the water biological resources – as an example, the author of the present study carried out a structural analysis of the methodology for composing the balance of fish and fish products to determine the per capita level of consumption, described the different approaches to assessing the level of consumption of water biological resources, structured export indicators of water biological resources gathered from various official sources, on the basis of which the author revealed significant differences in the assessment of the situation. The subject of statistics as the problem was raised at the Presidium of the State Council from October 19, 2015 devoted to the development of the fishing industry of the Russian Federation and was reflected as a separate item in the Order of the President following the results of the State Council. Established by the Order of the Federal State Statistics Service dated October 21, 2013 No. 419, the new method of determining the level of per capita consumption of fish and fish products, based on the compilation of the balance of water biological resources, and composed after the requirements of

the UN Food and Agriculture Organization (FAO), has the potential for improvement from a practical point of view. The author proves the necessity of changing the existing method of statistical reporting and analysis in order to improve its reliability.

Key words: fishing industry, aquatic biological resources, per capita consumption, export, import, methodology, food security, total allowable catch, quota.

Food security in the Russian Federation is one of the main spheres of national security in the medium term, a factor in the preservation of statehood and sovereignty, the most important component of demographic policy and a prerequisite for the implementation of strategic national priority such as improvement of the quality of life of Russian citizens by ensuring high standards of living.

The Decree of the President of the Russian Federation “On the adoption of the Food Security Doctrine of the Russian Federation” dated January 10, 2010 No. 120 set out a strategic goal for food security – to provide Russians with safe agricultural products, fish and other products from aquatic bio-resources, and food. The achievement of this goal is guaranteed by the stability of domestic production, as well as availability of necessary reserves and stocks.

The aim of the present study is to make a theoretical overview of existing methodological approaches to the analysis and evaluation of per capita consumption of fish and seafood in Russia. The practical importance of the research consists in the possibility of using the proposed techniques of statistical accounting in determining the average per capita consumption of fish and seafood.

Russia’s food security reflects the state of its economy, which provides food independence, guarantees that citizens have physical and economic opportunity to

obtain food products that correspond to the requirements of the Russian legislation on technical regulation and in amounts not less than the rational norms of consumption of food necessary for active and healthy living.

Rational norms of food consumption form a set of products that consists of food products in amounts and ratios that meet modern scientific principles of optimal nutrition and take into account the current structure and eating habits of the majority of the population [14].

It is especially important to note that the Doctrine specifies the significance of the products made from aquatic biological resources that aim to ensure Russia’s food security.

Fish is a source of easily digestible and complete protein, the biological value of which is equal to that contained in meat protein. Fish protein contains some amino acids that the human organism does not synthesize. Cod-liver oil – a valuable fish product – consists of oleic acid (by more than 70%), palmitic acid (by almost 25%), polyunsaturated fatty acids omega-6 (by about 5%) and omega-3 [12]. Salmon is exceptionally valuable due to the fact that it contains omega-3 fatty acids, which produce an antioxidant effect on the human body, slow down the aging process and improve memory. Fatty fish species (salmon, herring, mackerel, halibut, etc.) are rich in vitamins A, D and E. Among B vitamins, it

is necessary to point out vitamin B₁₂ found only in foods of animal origin. Fish also contains minerals: potassium, magnesium, calcium, phosphorus, iron; microelements: selenium, zinc and iodine, which are lacking in the diet in many regions of the Russian Federation. Salmon meat is an effective remedy for the prevention of atherosclerosis and cardiovascular diseases; it also reduces the risk of cancer, and normalizes blood sugar level.

Seafood exerts point out the following useful effects: it normalizes blood clotting, lowers blood cholesterol, improves sight, normalizes the work of the nervous system, improves memory and sleep, reduces irritability, benefits the state of one's skin, hair, nails, bones and teeth, normalizes metabolism.

The state pays considerable attention to the development of the fisheries industry (FI). In 2007, Astrakhan hosted a meeting of the State Council Presidium on Effective Management of the Fishing Industry in Russia. Food security and availability of a wide range of high quality fish at affordable prices were named as fundamental principles of development of the fisheries complex.

As a result of the State Council session, the fisheries sector received the following incentives:

- opportunity of the wide usage of tax concession such as unified agricultural tax (UAT), which resulted in almost twofold tax savings;

- concessional rate on payment of the fee for the catch of aquatic biological resources (ABR) in the amount of 15% of the face rate; consequently, enterprises save over five billion rubles annually;

- consolidation of the “historical” principle of endowing fishing companies with the quotas of the total allowable catch (TAC) for 10 years, which provides an opportunity of planning the investments for quite a long period.

When adopting these preferences, the Government was counting on the inflow of investments, increase in labor productivity and in the output of products with high added value.

However, the country's accession to the WTO resulted in additional risks, particularly for the Northern and Arctic territories [3].

Moreover, it can be noted that neither the plans, nor the forecasts of the development of the fishing industry use the indicators that characterize the efficiency of processing of raw materials; and it is contrary to the objective of the transition of the fisheries sector from the export-raw material development to innovation development by 2020, which is envisaged by the Concept for development of fishery of the Russian Federation until 2020 and other forecast tools [1].

The session of the Presidium of the State Council for the Development of the Fisheries Complex held in Moscow on October 19, 2015 summed up the activities of the fisheries industry for the period from 2008 and identified significant problems and ways of their solution.

It is planned that a system of state priorities, their implementation mechanisms, federal laws and departmental orders will be adopted after the meeting [15].

An important measure is to upgrade the system of economic indicators, which helps assess objectively (reliably) the development dynamics of the fisheries sector. The

Government of the Russian Federation was to submit to the President of the Russian Federation in the period until February 01, 2016 the proposals concerning the improvement of statistical accounting in the fisheries industry of the Russian Federation.

The main indicators of fisheries sector development are the annual catch of aquatic biological resources (ABR) and the per capita consumption of fish and seafood. The latter indicator is the most important from the viewpoint of food security.

It should be noted that there are different approaches to assessing the level of consumption of aquatic biological resources. Statistics agencies of the USSR and, later, Russian Federation based their calculations of the per capita consumption of fish and seafood upon the sampling survey of household budgets, which is a method of state statistical observation of the standards of living in accordance with the approved methodology. Food consumption was calculated as the sum of the total amount of products purchased in the period of the survey (with the exception of those products that were given as food to livestock and pets), processed for long term storage, bought on margin, donated, sold or given away in exchange for other goods, the amount of products spent on personal consumption and received by the household without payment (in payment for labor, in the form of their own production or from self-made foodstuffs, in the form of gifts, in-kind aid, etc.), and the volume of products consumed during the accounting period and purchased before the survey [5].

Per capita consumption of basic food products was determined by dividing the total

volume of consumed food products by the number of persons actually present in the household.

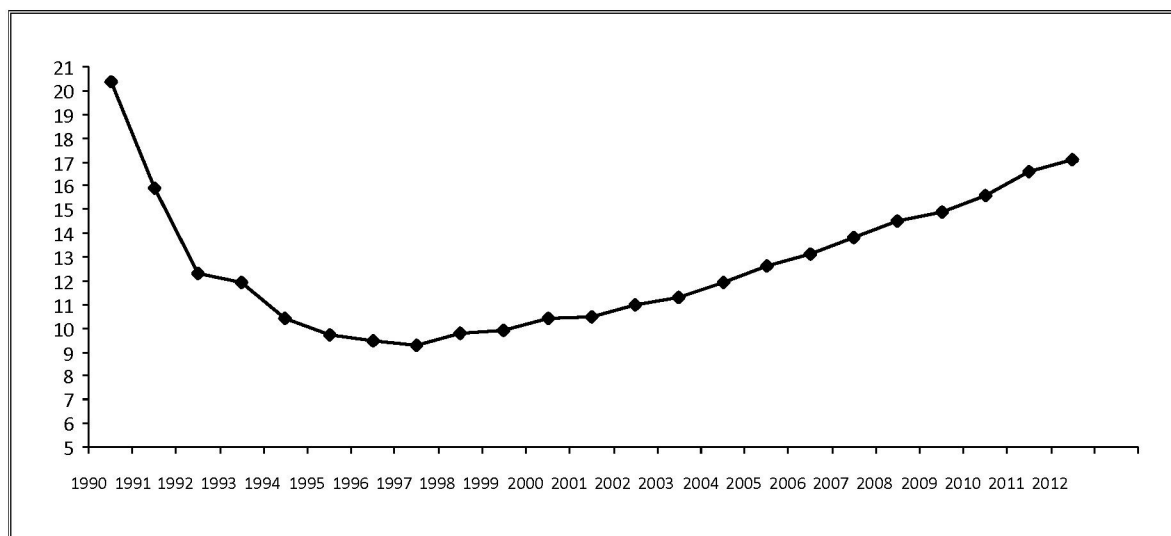
The Order of the Ministry of Healthcare and Social Development of the Russian Federation “On the approval of recommendations on rational norms of consumption of food products that meet modern requirements of healthy eating” dated August 02, 2010 No. 593n established the rational norms of consumption of fish and fish products in the amount of 18–22 kg per person per year [8]. According to *the figure*, at the present time, fish consumption in Russia is below the rational norms of consumption.

The Order of Rosstat “On the approval of the methodology for producing the balance of fish and fish products for the purpose of determining the per capita level of their consumption” dated October 21, 2013 No. 419 [4] changed the principle of calculation of ABR consumption that was used by state statistics bodies.

The methodology introduced by the order takes into consideration the recommendations of the FAO for the compilation of food resources balances [9], according to which the level of per capita consumption of fish and fish products is determined on the basis of the balance of supply and use of fish and fish products, formed in live weight (weight of raw fish). In this case the estimated per capita consumption increases significantly.

The balance of resources and utilization of fish and fish products in live weight (weight of raw fish) is a system of balanced data on the sources of fish, other aquatic biological resources, products of their processing and areas of their usage.

Consumption of fish and seafood in the Russian Federation in 1990–2012 [6]



Balance indicators help forecast the catch (harvesting), cultivation and export of fish and other aquatic biological resources and also assess the situation on the market, the need for imports, determine the fund of personal consumption and calculate the average per capita consumption of fish and fish products in live weight (weight of raw fish).

The balance of fish and fish products contains information on raw materials and products of their processing.

The balance is formed by Rosstat for Russia as a whole with the use of the data provided by Russia's Ministry of Agriculture and the Federal Agency for Fishery (Rosrybolovstvo) on a separate balance sheet for the calendar year in volume terms in live weight (weight of raw fish).

The balance is produced on the basis of federal statistical data, sample surveys of

household budgets, customs statistics and reporting on financial and economic performance of agricultural producers and other sources that characterize the generation of resources of fish and fish products and their use. In addition, when determining certain balance sheet items used the expert assessment and economic calculations [4].

The Rosstat methodology as of October 21, 2013 determines the following procedure of calculation: "The data on the catches of fish and harvest of other aquatic biological resources are formed by Rosrybolovstvo. The catch (harvest) includes all kinds of fish, crustaceans (crabs, crayfish, shrimps, etc.), mollusks (squids, mussels, oysters, scallops, etc.), algae (kelp, etc.), sea beasts and whales, recovered from the aquatic environment, but not yet subjected to the cooling process and other methods of preservation and processing".

Table 1 shows the Rosstat data on the consumption of fish and seafood according to the methodology approved by the Order of Rosstat dated October 21, 2013 No. 419.

The total catch also includes aquaculture: fish, crustaceans, mollusks and algae, grown and harvested in the seas and freshwater bodies (ponds, rivers, reservoirs, lakes, etc.) for the purpose of selling them in live condition subject to appropriate conservation conditions, as well as for producing food and non-food products.

Aquatic biological resources and aquaculture objects are presented in accordance with the national fisheries biological classification that serves as the basis for the statistical form No. 1-P (fish), the Foreign Economic Activity Commodity Nomenclature

of the Customs Union (FEACN CU) and the Russian National Classification of Products, which are, in general, comparable with the FAO Standard Statistical Classification of Aquatic Animals and Plants.

The catch of all aquatic biological resources is recorded in the raw weight of the uncut (not clean and cut open) raw fish (i.e. in live weight). Since the catch is not live fish but raw material intended for further processing (with the exception of aquaculture products sold alive), the term “live weight” means the weight of raw aquatic biological resources rather than live fish.

When calculating the balance of fish and fish products (tab. 2), the harvesting of mammals and algae is excluded from the catch [4].

Table 1. Resources and the use of fish and fish products in the Russian Federation (in live weight – weight of raw fish, thousand tons) [11]

Indicators	2011	2012	2013	2013 in % to 2012	Structure in % to the total	
					2012	2013
Resources						
Reserves as of the beginning of the year	652.2	723.6	846.4	117.0	10.0	11.3
Fish catch and the harvest of other aquatic resources	4,401.7	4,484.5	4,522.0	100.8	62.0	60.4
Import	1,889.2	2,020.5	2,120.4	104.9	28.0	28.3
Total resources	6,943.1	7,228.6	7,488.8	103.6	100	100
Use						
Processed for non-food purposes	401.7	389.5	423.8	108.8	5.4	5.7
Losses	34.6	35.5	36.0	101.3	0.5	0.5
Export	2,500.6	2,400.5	2,694.3	112.2	33.2	36.0
Personal consumption	3,282.6	3,556.7	3,557.8	100.0	49.2	47.5
Reserves as of the end of the year	723.6	846.4	776.9	91.8	11.7	10.3
For reference: consumption per capita, kg	23.0	24.8	24.8	100.0		

Table 2. Fish catch and the harvesting of other aquatic biological resources in the Russian Federation (according to the Federal Agency for Fishery), thousand tons [13]

Indicators	2011	2012	2013	2014
Fish catch and the harvest of other aquatic resources, total	4,275	4,271	4,309	4,235
including fish	4,120	4,110	4,135	4,017

If we compare the data on the catches of aquatic biological resources available at the official website of the Federal State Statistics Service to the data published by the Federal Agency for Fishery, we can see substantial difference.

Let us examine the effect of overstatement of the total catch on the per capita consumption of fish and seafood (*tab. 3*).

Thus, the fact that the statistical data on the volume of the catch was overrated by 4.3%

in the three years under consideration resulted in the formal increase in the per capita consumption of fish and seafood in Russia by 5.6%.

Next, we consider important components of the calculation such as import and export. The data on the import, apparently, are accurate, whereas the methodology for calculating the export of aquatic biological resources is an issue of concern (*tab. 4*).

Table 3. Comparison of the Rosstat and the Federal Agency for Fishery data on the harvesting of aquatic biological resources and consumption of fish and seafood per person in 2011–2012

Indicators	2011	2012	2013
Rosstat data (catch of aquatic and biological resources), thousand tons	4,402	4,485	4,522
Federal Agency for Fishery data (catch of aquatic and biological resources), thousand tons	4,275	4,272	4,309
Difference between the catches, thousand tons	127	213	213
Difference between the catches, %	3.0	5.0	4.9
Per capita consumption taking into account the Federal Agency for Fishery data, kg	22.1	23.3	23.3
Per capita consumption according to the Federal State Statistics Service data, kg	23.0	24.8	24.8

Source: the data were collected, structured and calculated by the author, who used official websites of the Federal Agency for Fishery (fish.gov.ru) [13], and the Federal State Statistics Service (gks.ru) [9].

Table 4. Export of fish, fish products and seafood from the Russian Federation in 2013 (according to the Federal Agency for Fishery), thousand tons

FEACN CU code	Product	Federal Customs Service of Russia	Form No. 8-EER-fish (urgent)	Total
03	Fish and crustaceans, molluscs	1507,01	351,55	1858,56
	out of which:			
0301	live fish	0,01	0,00	0,01
0302	fresh or chilled fish	1,00	0,00	1,00
0303	frozen fish	1372,80	326,90	1699,70
0304	fish fillet	70,90	23,90	94,80
0305	salted, dried fish	6,80	0,60	7,40
0306	crustaceans	36,40	0,10	36,50
0307	molluscs	10,10	0,04	10,14
0308	aquatic invertebrates	9,00	0,01	9,01
	Finished or preserved fish products	24,30	0,50	24,80
1604	Finished or preserved fish	23,10	0,50	23,60
1605	Finished or preserved crustaceans, molluscs	1,20	0,00	1,20
	Total	1531,31	352,05	1883,36

Source: Official website of the Federal Agency for Fishery. Available at: fish.gov.ru

The data on the amount of goods (in real terms – net) made of fish and other aquatic biological resources that entered Russia during the year in accordance with the customs regime of “import” and exported in accordance with the customs regime of “export” to other countries are aggregated by separate commodity positions in accordance with the codes of the Foreign Economic Activity Commodity Nomenclature of the Customs Union on the basis of customs statistics and the data on mutual trade with member states of the Customs Union formed on the basis of the statistical form of recording the movement of goods. The exports included products from fish and other aquatic biological resources, which were unloaded in foreign ports or transferred from Russian vessels to foreign ships at sea, i.e. which were sold outside the customs control zone, according to the data of the federal statistical observation form No. 8-EER (external economic relations) (fish). The volume of import and export (*tab. 4*) from the net weight are recalculated by the Federal Agency for Fishery with the use of coefficients of conversion in live weight (weight of raw material) on specific commodity headings in accordance with the codes of the Foreign Economic Activity Commodity Nomenclature of the Customs Union. The calculation uses the data on the number of products made of fish and other aquatic biological resources for food purposes.

However, the official website of the Barents-White Sea Territorial Administration of the Federal Agency for Fishery (BWSTA) contains the following information:

“The Barents-White Sea Territorial Administration of the Federal Agency for

Fishery, in an effort to strengthen the fight against illegal, unreported and unregulated fishing in the convention areas of the North-East Atlantic Fisheries Commission (NEAFC) and the Northwest Atlantic Fisheries Organization (NAFO), carries out state port control in relation to Russian vessels that intend to unload or transfer fish products in designated foreign ports.

Fish products made of fisheries resources harvested by Russian vessels in the NEAFC Convention Area and in the NAFO Regulatory Area in 2014 were unshipped (transshipped) in six countries. Like in previous years, the greatest number of landings was made by Norway – 331 Port State Control (PSC) form sheets (in 2013 – 287) and the Netherlands – 278 PSC form sheets (in 2013 – 271), the third position was occupied by the Faroe Islands – 188 PSC form sheets (in 2013 – 164). As before, fishing vessels were unloaded in Norwegian ports, where the volume of unloaded fish products amounted to 81.42 thousand tons (in 2013 – 74.12 thousand tons), and transport ships were unloaded mainly in Dutch ports – 110.45 thousand tons (in 2013 – 100.24 thousand tons). The Faroe Islands are leaders by the volume of fish products transferred from fishing vessels to transport ships – 246.18 thousand tons (in 2013 – 224.15 thousand tons). The total amount of fishery products claimed for unloading in 2014 in the framework of PSC amounted to 452 thousand tons, which exceeds by 37 thousand tons the indicators of 2013” [10].

If we approach the question formally, we will see that, according to the port supervision of the Barents-White Sea Territorial Administration, in the zones of the Western

and Eastern Atlantic alone, Russian enterprises unloaded in foreign ports or transhipped from its vessels to foreign vessels at sea 415 thousand tons of fish and seafood out of 352 thousand tons exported from all the basins (according to the form No. 8-EER) in 2013 – that in reality cannot be.

The form 8-EER-fish (urgent) “Information about the export (import) of fish, fish products and seafood” is submitted to the territorial body of Rosstat by all legal persons that are commercial organizations, including small businesses and non-profit organizations of all forms of ownership, which are residents of the Russian Federation and which have independently concluded contracts with foreign partners (non-residents) on the export of fish, fish products and seafood. The statistics report is submitted on a monthly basis.

As a rule, legal entities submit the specified form of the federal statistical observation at the place of their state registration, except for the cases when a legal entity registered on the territory of any subject of the Russian Federation does not carry out its activities on the territory of this subject of the Russian Federation. In this case the federal statistical observation form shall be submitted to the place of actual implementation of activities of this legal entity.

It should be noted that, with high probability, exporters underreport the statistical data. As for the Northern basin alone, the share of which in the overall catch in Russia is 29.7% (1 279,398 tons out of 4 309, 128 tons of the total catch in Russia), the export outside the customs control zone exceeds the total catch in Russia by 63.4 thousand tons (or

17.9%), according to the reports by the form No. 8-EER of the Federal Agency for Fishery.

Thus, the statistical data on exports provided to Rosstat by the Federal Agency for Fishery according to the reporting form No. 8-EER can and should be questioned because of their direct conflict with the data provided by the State Port Control.

The export of aquatic and biological resources from the customs territory of the Northern basin amounted to 105.5 thousand tons. Four hundred and fifteen thousand tons were unloaded in foreign ports and transhipped to transport vessels without going through customs control procedures; thus, the share of exports in the North basin outside the customs control zone in total exports amounted to 79.7%, whereas according to the official information available at the Federal Agency for Fishery website this share for all the basins is only 18.9%.

Thus, the Federal Agency for Fishery significantly underrates the data on the export of aquatic and biological resources; consequently, Rosstat overstates the per capita consumption of fish and seafood by the amount of export that is not reflected in the reports of enterprises according to form No. 8-EER (fish) outside the customs control, and divided by the number of population of the Russian Federation.

The volume of products reserves according to the methodology approved by the Rosstat Order dated October 21, 2013 No. 419 is calculated as follows:

– in the organizations engaged in processing of fish and other aquatic biological resources and wholesale and retail trade: it is defined by Rosstat according to the forms of

the Federal Statistical Observation (Form No. P-1 “Information on production and shipment of goods and services”) with the subsequent recalculation according to conversion factors into live weight (weight of raw material);

- in agricultural organizations: it is calculated by Russia’s Ministry of Agriculture on the basis of the reporting on financial and economic condition of agricultural commodity producers with the coverage of the full range of organizations and subsequent recalculation according to conversion factors into live weight (weight of raw material);

- in households: it is formed by Rosstat according to a sample survey of households’ budgets distributed to the entire population and subsequent recalculation according to conversion factors into live weight (weight of raw material).

Thus, there are both positive and negative sides in the fact of the change in the approach to assessing the level of consumption of aquatic biological resources in the Russian Federation, which was reflected in the adoption by the Federal State Statistics Service of the new methodology for calculating the per capita consumption of fish and seafood, approved by the Order of Rosstat dated October 21, 2013 No. 419.

Calculations made according to the above procedure developed taking into account the recommendations of the Food and Agriculture Organization of the UN (FAO) on the compilation of balances of food resources is comparable with foreign analogues and helps compare the per capita consumption of products in the Russian Federation and other countries within the framework of the same scale of coordinates.

It is necessary to note that foreign experience is not always possible to be adapted to modern Russian conditions.

World practice of statistical reporting involves accuracy of source information for the compilation of balances of food resources.

Let us highlight the following major factors that have significant impact on the final result in the form of the per capita consumption of the product:

1. To calculate the balance of fish and seafood per year, it is required to estimate the number of products made of aquatic and biological resources and stored in warehouses (on board ships) of Russian enterprises at the beginning and end of the year. Source data is taken from the statistical form No. P-1 that small enterprises do not fill in. In the fishery industry, their share in total revenue is 31.5%. In the fish processing industry, the concentration of capital is even smaller. According to our data, in the Vologda Oblast there are no medium and large enterprises of this industry, and, therefore, what remains in the region’s warehouses is not taken into account when calculating the national balance of fish and seafood.

2. The data on fish catches and harvesting of other aquatic biological resources are formed by the Federal Agency for Fishery. Comparison of the data on the catch of aquatic biological resources available at the official websites of the Federal Agency for Fishery and Federal State Statistics Service, revealed their significant discrepancy (up to 5.0% in 2012, which resulted in the overstatement of the per capita consumption of aquatic biological resources by 6.4%). A request submitted to the Federal State Statistics Service did not

help specify the reason for such a significant difference.

3. A significant error in the calculation of the balance of aquatic and biological resources is introduced by indicators of exports of fish and seafood harvested outside the zone of customs control. The calculation of such exports is made on the basis of the data of statistical reporting forms No. 8-EER-fish (urgent) "Information about the export (import) of fish, fish products and seafood" collected from subordinate enterprises by the Federal Agency for Fishery. The Agency has the opportunity to compare the data obtained by the form No. 8-EER-fish, in particular, for the Northern basin to the information of the State Port Control in relation to Russian vessels intending to unload or transfer fish products in designated foreign ports. However, the amount of export outside the customs control zone, according to the State Port Control, for the Northern basin alone exceeds Russia's national export according to the form No. 8-EER-fish by 63 thousand tons. The share of the Northern basin in the catch of all Russian enterprises is 29.7%.

The aforementioned second and third factors have a significant impact on the overstatement of the final figure of the per capita consumption of fish and seafood.

The previous methodology for calculating the average per capita consumption of fish and seafood used in the Soviet time considered aquatic and biological resources in the form of the finished product rather than raw fish. Given the rather high coefficients of processing of raw materials into a finished product (for example, the manufacture of 1 kg of frozen cod requires 1.52 kg of raw fish)

[2], it is possible to improve significantly the "indicators" of consumption by applying the Methodology of Rosstat of October 21, 2013.

It is logical to assume that one of the main objectives of introducing the new methodology was to embellish the existing the current situation and, even in case of the decrease in the consumption of aquatic and biological resources in Russia, to declare its growth, to show that the consumption of ABR in the country corresponds to the rational norms of consumption of fish and fish products.

Recognizing the methodology of Rosstat dated October 21, 2013 as complying with the requirements of the Food and Agriculture Organization of the UN (FAO), we believe it is possible to propose the following:

1. The Federal State Statistic Service should carry out necessary procedures in order to use the data on the annual catch of aquatic biological resources by fisheries enterprises of the Russian Federation agreed with the Federal Agency for Fishery for the purpose of calculating the per capita consumption of fish and seafood

2. When calculating the export outside the customs control zone, the Federal Agency for Fishery should use the data provided by the Port State Control that are more reliable than the data provided by the form No. 8-EER-fish.

3. The Ministry of Health and Social Development of the Russian Federation should bring the Order dated August 2, 2010 No. 593n (its part that concerns the establishment of rational norms of consumption of fish and fish products) into conformity with the existing Methodology of Rosstat; namely, to recalculate the norm of consumption with regard to raw fish rather than finished

product; this will make the indicators of the Methodology and the established norms comparable.

If the above recommendations are applied, it will increase the accuracy of calculation of the per capita consumption of fish and fish

products by the population. If the figures reflect the real picture of providing the population with aquatic and biological resources, then the relevant state authorities can adopt decisions that will help choose the correct strategy for the development of the fisheries sector.

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