ABOUT THE NECESSITY OF IMPLEMENTATION OF A REPRODUCTION STRATEGY OF VALUABLE MARKETABLE FISH SPECIES IN BASHKORTOSTAN

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Solution of the problem of adequate food supply of citizens of our country assumes development of the fish industry. The article gives the results of study of consumer demand for fish and fish products in the Republic of Bashkortostan, which allows us to prove the necessity for rapid implementation of a reproduction strategy of valuable marketable fish species in the republic.

Currently the solution of the problem of adequate quantity of food supply acquires vital importance for the Russian economy.[1] This increases significance of marketable fish reproduction, including valuable species. The poor condition of enterprises in this sphere becomes complicated due to instability of the environment: conditions become more unusual and unfamiliar, the rate of changes increases, which significantly surpasses the speed of the reaction of enterprises; the number unexpected events grows as well as sudden changes. In such conditions it becomes impossible to conduct management by way of reaction to arising problems from the position of the past experience or its extrapolation. Foreseeing, research and creativity are necessary for timely and effective reply reaction. It is these methods that should lie at the foundation of models and instruments of strategic management.[2]

Success of any undertaking becomes the result of its efforts only thanks to the study of consumers. It is not enough to know who the main consumer is, it is necessary to understand what kind of products the consumer expects from the enterprise.[3] With this aim we conducted research of consumer satisfaction with the fish and fish products, available at the regional market.

For the implementation of a research plan a questionnaire was worked out. When defining the volume of exception two conditions were taken into consideration: first, it should be "statistically significant", to get as reliable as possible information; second, it should be sufficiently economical, so as not to increase the cost of market research and terms of its conduct.

The volume of excerption totality is defined with the help of empirical formula of calculation of the excerption volume[4]:

$$n = \frac{t^2 \cdot \sigma^2 \cdot N}{t^2 \cdot \sigma^2 \cdot \Delta^2 \cdot N},$$

where t - is the trust coefficient, which depends on the possibility of statement, that the top error of choice does not exceed a t-fold average error (more often $t = 2$); y^2 - disperse of the studied sign, which is defined on the basis of experiment; " - utmost (assigned) excerption error; N - number of units in the general totality.

For calculation of the studied sign dispersion (y^2) the average size of a purchase was defined, for which an experiment was carried out — piloting research, which included observation and oral interrogation of the control group from 64 customers.

On the basis of the received results was calculated dispersion of the average purchase according to the formula:

$$\sigma^2 = \frac{\sum_{i}^{n} (x_i - \overline{x})^2}{n} = 185609,$$

where $\overline{x}$ - is the average size of a purchase; x_i - is the size of the i customer; n - is the number of surveyed customers.

As the research was conducted on the territory of the Republic of Bashkortostan, where the inhabitants are fish buyers and population of the region in 2006 constituted 4063409 people, the given figure can be taken for the volume of general totality. For all that the utmost (assigned) error has the meaning of 44 rubles (10%), so the quantity of excerption n equals to 383 people.

$$n = \frac{2^2 \cdot 185609 \cdot 4063409}{(2^2 \cdot 185609) + (44^2 \cdot 4063409)} = 383.$$

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For the estimation of result error was used the index of common reliability, where the choice error in the limits of 3-10% is possible.

Market research was held in the shops of retail network ("Matrix", "Pyaterochka", "Monetka"), in trade and service complexes ("Golden Fish", "Guryevskaya" and others), in specialized markets, which sell fresh frozen fish ("Kolkhozniy Market", "Central Market"), in unwarranted outlets selling fresh and frozen fish in the period of February, March, April 2007. Altogether 385 questionnaires of consumers were collected, 44 of them were considered defective. Thus, 341 questionnaires were analyzed.

Simple grouping and classification of consumers according to social and demographic signs regulated the results of questioning. So, the basic exception consisted of 47.2% of women and 52.8% of men. Meanwhile, the general survey consisted of 46.9% of men and 53.1% of women. It is not difficult to believe, that among the buyers of fish and fish products women made the majority. Respondents of the ages of 30-39 years old (24.6%) and 25-29 years old (23.8%) constituted more representative age groups. Further followed three age groups: 40-49 years old (17.3%), 55 years old and older (17.3%), under 24 years old (16.2%). 11.5% of the consumers were people with the monthly income more than 10 000 rubles, 61.7% - with the income of 7 000 — 10 000 rubles, under 7 000 rubles — 26.8%. 74% of the interrogated people have families.

Comparison of all the indexes allows us to assume that the majority of the surveyed people can be referred to the "middle class". Data analysis of secondary sources of information also confirm fact.

Cross grouping of interrogation data (cross tabulation) was conducted to define stable relations between social and demographic signs. For all that we used one of the main signs of segmentation — monthly level of income.

The most numerous first segment constituted consumers with the income of 7 000 — 10 000 rubles (61.7% of the total excerption volume). Here women of 25-29 years old (23%) prevailed; their occupations are accountants and economists (5.8%); highly skilled workers (3.5%) and workers of average qualification (3.1%). Men constituted 4.6%; their age was

25-29 years old. Those were entrepreneurs (4.2%), engineers (3.5%), military personnel and policemen, also workers of average qualification (3.2%).

This group of consumers usually buys halibut, sea perch, plaice, mackerel, smelt, herring, salmon, trout, frozen shrimps, squid, fish fingers, fish meat, carp. Frequency of fish purchases — several times a month. When visiting trading places they pay attention to the quality of products, choice possibility, work of assistants. Quality, producing country, trademark were the main criteria of product choice. Price in this segment had greater importance than in the third segment.

Consumers with an income of less than 7 000 rubles (26.8%) can be referred to the second segment. Here also prevailed women of 40-49 years old (14.6%), their main occupations being in general teachers, doctors (2.7%), workers of average qualification (3.5%) and trade workers (service sphere) — 2.2%, pensioners — 2.0%. In this group 3.4% were men. They usually buy putassu, navaga, haddock, perch, herring, carp, crucian, etc. When choosing the month of purchase great significance had the price and quality of the offered products. Price was the main estimating criterion when choosing fish and fish products.

The third segment was formed from the customers with the income of more than 41 000 rubles (11.5%). Here the correlation of men and women was approximately equal (5.3% and 6.2% accordingly), consumer age constituted 25-29 years old, 30-39 years old and older than 50. The kind of occupations, characteristic of this segment was: entrepreneurs (1.9%), accountants and economists (2.3%), housewives (1.3%). Usually they buy fish delicatessen, halibut, sea perch, plaice, mackerel, smelt, white sturgeon, salmon, etc.

As "very important" the respondents defined the following criteria of purchase choice (in the order of significance decrease): product quality, great choice, atmosphere in the shop, convenience of location. The price didn't play an important role.

Thus, analysis of consumer behavior in the process of market choice allowed us to conclude that the population had great demand for fish and fish products, which calls for necessity of development of fish industry. In connection

with, this special significance acquires the increase of the amount and restoration of population of extinct fish species in reservoirs of the Republic of Bashkortostan.

The solution of this problem in modern conditions is possible only by way of artificial reproduction of fish. With the aim of creation in reservoirs of the republic of genetic fund of valuable fish species it is necessary to form their mother herd and introduce technologies for artificial reproduction. To conduct this work in the republic there is enough intellectual and scientific potential, which is concentrated in the acting specialized fish enterprises. This potential will be used for reproduction of fish supply in natural reservoirs and also for liquidation of ligulosis of carp species of fish in Aslykul and Kandrykul lakes.

The above mentioned problems have the character common for all the reservoirs of the republic and can be solved by program aimed methods. It is necessary to start strategic implementation of valuable fish species reproduction in the Republic of Bashkortostan as soon as possible. This will allow to solve a whole complex of problems: to eliminate overgrowing with hard and soft vegetation of reservoirs; to increase natural fish reproduction in reservoirs by means of introducing young valuable fish species; to meet the demand in fish material for the needs of melioration of overgrowing reservoirs of complex purpose; to create stable pop-ulation of sturgeon fish species (starlet, Russian sturgeon) in the rivers of Kama river basin; to make healthy the lakes which are infected by ligulosis by means of introducing there young sig fish species.

Economic efficiency of these measures (from sales of additional volumes of fish in the quantity of 1 300 tons) will be more than 50 million rubles. Fish rearing in reservoirs of complex assignment will allow the creation of up to 1 000 jobs, will promote development of local fishing, tourism and sport fishing.

Ecological efficiency of melioration works consists of reservoir ennobling, in reproduction increase of fish supply in natural reservoirs. Economic efficiency of this work constitutes 2-3 rubles from every invested ruble.

Thus, implementation of this strategy will allow us to solve not only economic but also ecological and social problems.

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Recived for edition 20.03.2009