



WAYS TO INCREASE THE EFFICIENCY OF POND FISH CULTURE BASED ON INTENSIFICATION OF PRODUCTION

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ABSTRACT

The purpose of the study was to economically assess the fishery significance of cluster groups of reservoirs with new methods of their exploitation. To achieve this goal, the following tasks were formulated and solved: to identify the main aspects of the economic development of pond fish farming and the effective functioning of the aquaculture subcomplex; conduct a systematic analysis of the current state of pond fish farming in the region and identify the reasons hindering the increase in fish production volumes; from an economic point of view, assess the fishery significance of cluster groups of reservoirs that influence the efficiency of production and sale of marketable fish in the republic; analyze the degree of use of the available pond stock and factors influencing fish productivity during the formation of clusters; identify ways to increase the economic efficiency of commercial pond fish farming; to develop a scientifically based system for the formation of clusters and priority directions for increasing the level of intensification in pond fish farming, to develop practical recommendations for improving the technology and organization of production in the industry and increasing the volume of fish production.

KEY WORDS : *pond fish farming, ways to increase efficiency, intensify production*

INTRODUCTION

The relevance of the research topic is due to the need for in-depth analysis and consideration of theoretical, methodological and practical problems in the development of fish farming caused by the negative consequences of agrarian reform. It should be noted that the formation and development of market structures in the agricultural sector continues today without sufficient scientific and theoretical justification, detailed elaboration of conceptual provisions that take into account the specifics of various industries, their interrelations, and interdependencies. Over the past fifteen years, reforms in the agricultural sector of Uzbekistan have led to a halving of fish catches. The significance of developing theoretical principles for the development of fish farming is confirmed by the fact that there is no stabilization in the industry. This is due to a number of social and economic reasons that require special scientific research. Among them, first of all, the scientific foundations of clustering and its impact on the methodology for the restoration and development of fish farming in market conditions remain insufficiently studied. Therefore, the study of the potential capabilities of economic entities of various forms of ownership in the production of fish products, their rational relationship and specialization, issues of the specifics of organization and production management, the study of the economic foundations of fish farming clustering in market conditions, along with the development and implementation of new production methods and technologies in the industry, seems quite relevant task.

In the global economy, fish farming is the fastest growing food-producing sector. Having appeared in the 1950s, aquaculture (fish farming) has already become the largest supplier of animal proteins to the table of mankind since the mid-2000s, surpassing livestock and poultry farming.

And in our country, the fishing industry is one of the most promising areas in the economy of Uzbekistan. However, despite the presence of vast water resources (ponds, reservoirs, lakes, rivers, canals, etc.), fish production and the implementation of scientific work on fish farming was slow.

In order to improve the organization of fish farming, increase the volume of industrial production of fish products, rational use of water resources and taking into account the importance of the fishing industry in providing the population with high-protein food products, the country has adopted a number of legislative acts, including Resolution of the President of the Republic of Uzbekistan No. PP-2939 dated May 1 2017 “On measures to improve the management system of the fishing industry” and No. PP-4005 dated November 6, 2018 “On additional measures for the further development of the fish farming industry” .



Table 1. Forecast parameters of fish farming in the Republic of Karakalpakstan and regions in 2024 (tonn)

T/r	The name of the areas	Total Fishing	From this:						Closed Water Circulation System
			In Artificial Water Bodies	In Natural Water Bodies and reservoirs	In a Cage (Sadok) Device	in intensive water bodies			
						Semi-Intensive	Intensive Small Water Bodies	Households	
1.	Republic of Karakalpakstan	45,000	2 430	2,000		29 850	9 500	820	400
2.	Andijan	80,000	3,050			63,800	12,000	700	450
3.	Bukhara	40,000	100	1 500	120	17 250	19 410	770	850
4.	Jizzakh	90,000	2 500	13,000	2 500	67,000	3 600	650	750
5.	Kashkadarya	40,000	300	1,550	2 300	24,000	9 870	1,080	900
6.	Navoi	45,000	1,050	7 500	3,000	20 500	10,050	1 300	1 600
7.	Namangan	90,000	6 140	710	1,515	72 700	6,040	1 100	1,795
8.	Samarkand	40,000	210	1,050	920	23,000	10,768	2 266	1,786
9.	Surkhandarya	35,000	362	735	1,050	12 680	17 640	791	1,742
10.	Syrdarya	110,000	20 750	150		83,000	5 100	700	300
11.	Tashkent	90,000	6 200	300	1 640	71,000	6,670	1 300	2,890
12.	Ferghana	95,000	3,000	1 215	2 175	79,000	8 252	1 100	258
13.	Khorezm	100,000	6,500	1 150	80	81,000	10,000	1 000	270
Total		900,000	52 592	30 860	15 300	644 780	128 900	13,577	13,991

In order to support the fishing industry of the republic, increase the efficiency of fish farming and fishing farms, as well as the rational and efficient use of land and water resources, ensure the widespread introduction of intensive technologies in this area.

Table 2. Forecast parameters for the intensification of artificial water bodies in 2024

T/r	The name of the areas	Intensification	
		Area (hectares)	fish farming press (ton)
1.	Republic of Karakalpakstan	1 700	25 500
2.	Andijan	3 400	51,000
3.	Bukhara	740	11 100
4.	Jizzakh	3 800	57,000
5.	Kashkadarya	1 000	15,000
6.	Navoi	700	10 500
7.	Namangan	4 200	63,000
8.	Samarkand	1 000	15,000
9.	Surkhandarya	500	22,500
10.	Syrdarya	5,000	52,500
11.	Tashkent	4,000	52,500
12.	Ferghana	4 500	67,500
13.	Khorezm	4 700	70 500
Total		35 240	513 600

Currently, there are fish farms in Uzbekistan with different levels of intensification of pond polyculture. Therefore, it is necessary to develop recommendations for drawing up biological standards for growing fish seed and



marketable fish. Why is it necessary to carry out a scientific and biological substantiation of each reservoir (artificial or natural), as well as the introduction of scientifically based methods and intensive technologies for growing fish, which entrepreneurs are already trying to implement, but without preliminary scientific research. And according to the Presidential Decree mentioned above, the dynamic development of the fishing industry is entrusted to the Uzbekaliksanoat Association, which implies participation in the development of biostandards for all categories of fish farming, as well as a regulatory framework that ensures the rational use of resources of natural and artificial reservoirs, the introduction of incentive mechanisms development of aquaculture in the republic.

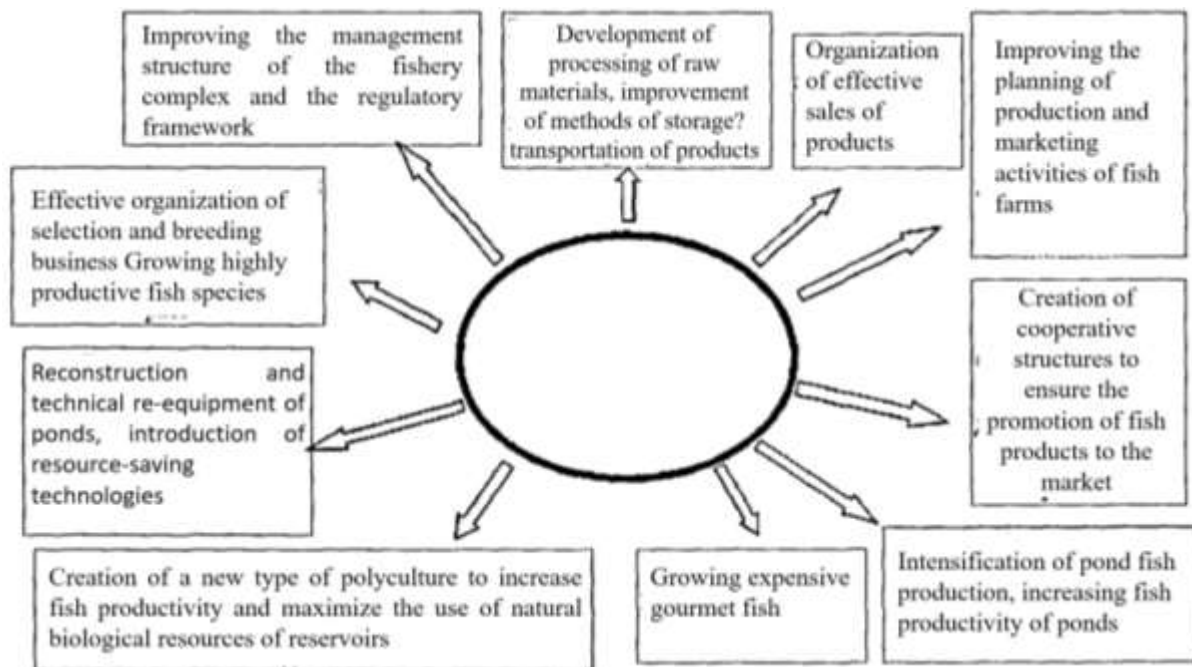
Table 4. Forecast Parameters for the Introduction of Intensive Fish Farming in households in 2024

T/r	The name of the areas	Fish Farming in Households	
		Population (People)	Volume of Fish Farming (Tons)
1.	The name of the areas	500	650
2.	Andijon region	600	750
3.	Republic of Karakalpakstan	500	650
4.	Andijan	490	630
5.	Bukhara	540	600
6.	Jizzakh	1 100	1 300
7.	Kashkadarya	940	1 210
8.	Navoi	1,030	1 200
9.	Namangan	400	500
10.	Samarkand	600	750
11.	Surkhandarya	800	950
12.	Syrdarya	900	1,050
13.	Tashkent	600	750
Total		9,000	10 900

In order to further develop the fishing industry, increase the types of fish products, increase export potential, effectively use the capabilities of existing basins, increase the volume of fish farming based on intensive technologies

MATERIALS AND METHODS

The research examines the theoretical, methodological and practical aspects of the development of pond fish farming. The effectiveness of pond fish farming is characterized by the ratio of costs and results of the production activities of fish farming enterprises, the achievement of maximum income from the production and sale of products. Study of the works of many scientists, literary sources, the management structure of the fishery complex, legislation regulating the functioning fishing industry, allows us to conclude that a systematic approach to studying the effectiveness of pond fish farming is to consider the industry as an important component of the Russian fisheries complex, taking into account the role and place of pond fish farming in the development of the economy and social sphere of the country, in ensuring food security. The studies examined possible directions for increasing the efficiency of pond fish farming, presented in Fig. 1.



Rice. 1. Directions for increasing the efficiency of pond fish farming

The paper formulates the methodological basis for studying the effectiveness of pond fish farming. To achieve objective, reliable results, it is necessary to be guided by the methodological principles of research (objectivity, evolutionism, systematicity, innovation), use a set of research methods, apply criteria and indicators for assessing the effectiveness of pond fish farming, and take into account the specific features and patterns of development of the industry. In the process of the research, three directions for increasing the efficiency of pond fish farming were substantiated and developed: the creation of cooperative structures that ensure the promotion of products to the market, the intensification of pond fish production, and the improvement of planning of production and marketing activities of fish farming enterprises.

The formation and development of fishery clusters in pond fish farming is hampered by the existing management structure, insufficient independence and interest of specific performers in the results of labor, and the complete alienation of producers from the results of the process of processing and selling products. In turn, the absence of a system of regional wholesale markets does not allow fish farms to be equal participants in the regulation of the fishery market. A comparative assessment of the efficiency of fish production, taking into account economic and climatic conditions, showed the need for zonal specialization .

CONCLUSIONS

In order to saturate the food market with fish products, it is necessary to develop a unified state (national) program to support aquatic producers , aimed at stimulating the sale of products to federal and regional funds, as well as the formation of a market for domestic products. To increase the efficiency of pond fish farming, it is necessary to create a system of targeted credit financing for the production, processing, storage and sale of competitive products through regional wholesale markets, based on which, to develop a procedure for preferential taxation, a mechanism for subsidies and compensation, ensuring, on the one hand, the availability of purchasing fish products in volumes that guarantee the preservation of public health, and on the other hand, the material interest of producers, the competitiveness of products of the required volume and range. The work substantiates the methodological basis for increasing the efficiency of pond fish farming. It is proposed to use an increase in the efficiency of production and sale of pond fish as a criterion for assessing the effectiveness of pond fish farming. Specific features of pond fish farming are revealed, such as rapid growth of fish, low feed costs, short shelf life and sale of products, etc. The studies formulate patterns of effective development of the industry, consisting in the placement of production in accordance with the geographical location of ponds and markets for products, division of labor and cooperation, etc.



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