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- USSR -

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FISH FARMING--AN IMPORTANT SOURCE FOR INCREASING FOOD RESOURCES

- USSR -

[Following is a translation of an article by S. Alekseyev, Deputy Minister of Trade USSR, in the Russian-language periodical Sovetskaya torgovlya (Soviet Trade), Moscow, No. 8, August 1958, pages 12-15.]

In a statement addressed to the agricultural workers, the Central Committee of the Communist Party of the USSR and the Council of Ministers USSR have pointed out that pond fishing in kolkhozes and sovkhozes can become a vital source of supplementing the resources of our country; that, if properly organized, this branch of agriculture can bring considerable income at small labor expenditure.

Fish flesh has a high food value, is assimilable and nutritious. It contains proteins, fats, minerals, and vitamins. But mainly, fish flesh is one of the richest sources of high-grade protein which is assimilated by an organism almost wholly, and much easier than are animal proteins.

Cod-liver oil is also assimilated by a human being much more easily and completely than is animal fat.

Fish flesh contains many minerals essential to man.

It is quite natural that the sharp decrease of fish resources during recent years in the southern basins of our country, particularly in the Azov Sea, is cause for alarm. This decrease is explained by the deterioration of hydrological conditions, the changed nature of natural reproduction, the decreasing of spawning and breeding grounds, and the pollution of reservoirs by the sewage of industrial plants.

In many cases the condition of fish resources has also been due to inefficient fishery and the violation of fishing regulations by individual fishing organizations.

As a consequence, the fishing industry began to move into open seas. The inland reservoirs of the country yield less valuable fish, while the demand for fish, particularly live fish, used for the more nourishing and delicious dishes, is very great.

The southern reservoirs year after year yield less live fish. Thus, in 1955 they yielded 1,300 tons, in 1956 1,100 tons, and in 1957 only 800 tons.

In its efforts to increase the catch of fish, the Gosplan USSR [State Planning Commission] directs the agricultural soviets toward the so-called active catch, on the open seas. At the same time, unexcusably little attention is being given to the important live fish supply from lakes and ponds. Even the old and tested fishing basin in Astrakhan supplied only 613 tons of live fish in 1957.

The present task is to organize the breeding and catching of fish in the ponds of state fishing farms and kolkhozes, at the same time increasing the catch in the seas and inland reservoirs.

Unfortunately, from the total area of 8,000,000 hectares of water resources at the disposal of the kolkhozes and sovkhoses of the USSR, including more than 1.5 million hectares of ponds and pond-type reservoirs, only 2-3% of the area is being used for fishing. Ponds and small lakes, suitable for fish breeding, can yield up to one million centners of fish. However, even after stocking, the reservoirs remain without supervision and the fish without any care. The productive capacity of these reservoirs is very low; it constitutes 1-1.5 centners per hectare, while with normal care it could reach 15-20 centners.

In 1957, for instance, the kolkhozes and sovkhoses of the RSFSR stocked 68,300 hectares with fish, but caught only 89,100 centners of carp, which is just 1.3 centner per hectare. At the same time, some kolkhozes in the Kursk and Kiyevsk oblasts caught up to 20 centners of fish per hectare in individual ponds (which of course does not constitute a limit). With intensive fish farming the general yield of a pond can reach 35-45 centners per hectare.

Many countries of Europe and Asia have well-developed fish farming. In China, for instance, they grow and catch about 3 million centners of fish in the inland reservoirs. Large-scale pond farming also exists in such countries as Czechoslovakia, Poland, France and others.

The practice shows that fisheries, kolkhozes, and sovkhoses having well-organized fish farming derive high incomes from these operations (up to 300,000-400,000 rubles per annum).

It should be mentioned that our kolkhozes and sovkhoses are still getting from the industries year-old fingerlings, weighing 15-20 grams, for stocking purposes. These fishes are destroyed in large numbers by predatory creatures. Besides at the end of the season the caught fishes weigh only 250-350 grams. This is unprofitable and complicates the transporting of live fish.

In order to create an interest in breeding pond fish among the kolkhoz members, the reservoirs should be stocked with 2-year-old carps weighing up to 300 grams.

The pond fish farming practice shows that, stocked in breeding ponds under crowded conditions in May, such carps will weigh 1.2 kilograms by early August, and 1.8 kilograms by early September. Such fast growth is profitable and the farm supplies a product of high quality.

Stocking ponds with 2-year-old carp will make it possible to sell to the population of our country live pond fish 2 months earlier, viz., in August and September, than the usual October and November market, when the ponds are stocked with one-year-old fish.

The country has swampy areas, overgrown with shrubbery and tough plants, which cannot be turned into pastures without great expenditures. The reclamation of such lands costs much more than turning them into lakes and ponds by flooding.

According to the All-Russian Scientific-Research Institute for Pond Fish Farming, pastures of various types during the season yield 40-70 kilograms of beef per hectare, while one hectare of pond yields an average of 250-300 kilograms of fish by means of natural feed alone. Consequently the flooding of such areas is economically feasible, not to mention the improved climatic conditions of the locality and a better-looking landscape.

Also interesting are the data of the All-Russian Scientific-Research Institute for Pond Fish Farming showing the cost per centner of pork as compared to that per centner of fish caught in ponds.

The labor expenditures and costs per centner of pork and per centner of carp respectively in 1956 are shown in the following table (rubles):

Sovkhozes	Pork		Pond farms	Carp	
	cost per centner	including wages		cost per centner	including wages
Krasnodarsk Kray..	779.0	176.9	<u>Moscow Oblast</u>		
Kamensk Oblast...	926.0	209.5	Nara.....	402.8	53.6
Rostov Oblast....	671.7	157.6	Osenka.....	363.5	24.9
Stavropol' Kray..	727.5	156.4	Zagorskiy.....	538.0	88.6
Stalingrad			Gzhelka.....	420.1	50.7
Oblast.....	1,139.5	202.8			
Voronezhsk			<u>Belgorodsk Oblast</u>		
Oblast.....	337.0	153.2	Klyuchiki.....	228.0	36.6
Orlovsk Oblast..	969.2	167.7	Oktyabr'.....	249.0	37.2
Tul'sk Oblast..	1,366.7	202.8			
Chkalovsk			<u>Tambovsk Oblast</u>		
Oblast.....	1,199.0	195.4	Dvurech'ye.....	315.0	51.0
			<u>Velikoluksk Oblast</u>		
			Velikoluksk.	462.0	72.0

The figures show that the cost per centner of carp, grown in the state pond farms in the RSFSR, is several times cheaper than the cost per centner of pork. The wages included in the cost of pork are considerably higher than those in carp breeding.

The experience of the foremost pond fish farms show that fish farming is highly profitable. The "Bolshevik" Kolkhoz (Lenin Rayon, Moscow Oblast) is annually breeding about 30 centners of fish per hectare of pond. It derives an income of more than 200,000 rubles each year from this branch. The costs of building the kolkhoz pond were repaid in one year. The "Para" Fish Farm in Ryazan' Oblast is breeding 14 centners of fish per hectare. In 1957 this farm bred 7,600 centners of edible fish and 2,200,000 stocking fishes, the total of which yielded over 3,000,000 rubles in net income for the farm. Examples of the profitability of fish farming can also be found in other oblasts and rayons.

Nevertheless, the local soviets and agricultural organs in many republics, krais, and oblasts are not taking the necessary steps for the development of pond fish farming.

The number of large water reservoirs in the country will be increasing year by year. These will be capable of yielding hundreds of thousands of centners of fine live and fresh fish. It is essential that the correct stocking of water reservoirs with fish, and the correct management of fish farming, be put under the permanent and assiduous control of local soviets and party organs.

The behavior of the Ministry of the River Fleet RSFSR can serve as an example of a careless attitude toward supplying customers with fresh fish. A large number of the Ministry's river boats carry passengers on all the rivers of the Soviet Union. Many vacationists and tourists spend their holidays on the boats of the fleet. Despite the fact that the rivers have plenty of fish, the menus on the river boats do not include fish dishes; and when they are included, the fish has usually been brought from afar in salted or frozen form.

Until now none of the river boat companies has established live fish tanks so that fresh fish can be provided in the dining rooms on the boats.

The Ministries of Trade in the republics, the workers of the public catering service, and leaders of local trade organizations are not devoting sufficient attention to the production of and trade in live fish. Also, the leaders of soviets in the economic administrative areas do not show any initiative in this vital matter.

In the past few years the supply of live fish from the state pond farms has decreased. For instance, in the RSFSR in 1957 it was planned to breed 55,500 centners of fish, but actually only 37,600 centners were delivered to the state, including 5,600 centners of sub-standard fishes weighing less than 250 grams.

If these sub-standard fishes had been delivered to kolkhozes for stocking ponds, lakes, and reservoirs, then in August 1958 the population would have had 22,000-25,000 centners more high grade live fish i.e., 5 times more.

The breeding of pond fish is done mainly in the RSFSR, and in the Ukrainian and Belorussian SSR's. But even in these republics the increase is meager, although there are very good possibilities. Thus in 1940 the RSFSR produced 2,500 tons of pond fish, and in 1957, 5,500 tons. During the corresponding years the Ukrainian SSR produced 4,400 and 8,300 tons; the Belorussian SSR, 1,500 and 1,900 tons.

The area of stocking is virtually not increasing at all. No winter tanks for keeping live fish are being built.

Simultaneously with the decrease of yield, the weight and quality of fish has also dropped. If in 1955 the average weight of the fish brought to Moscow was 475 grams, in 1956 it was 410 grams; and in 1957 it dropped to 365 grams. In 1957, 1,600 centners of pond carp was brought to Moscow; 40% of this weighed only 250-300 grams.

A considerable amount of carp weighing less than 250 grams is being sold through the trade network.

In 1954 the minimum weight of edible carp was considered to be 450 grams. According to the regulations of the former Ministry for the Fishing Industry, the required weight was reduced to 350 grams. Fishing enterprises began to increase the stocking limits per hectare instead of enlarging the breeding areas. The result was a low feeding capacity of the ponds: the plans began to lag, and there were large quantities of carp weighing 300, 250, and even 200 grams.

The pond fish farms, kolkhozes, and sovkhozes continue breeding only carp despite the fact that, besides carp, speckled trout, ide, silver carp, rainbow trout, sterlet, and other types of fish can be bred in large quantities. The technique of the combined breeding of these valuable species was long ago worked out by the All-Russian Scientific-Research Institute for Pond Fish Farming.

The breeding of sterlet and trout in ponds is done on large experimental farms which do not supply fish for the market. In the past 15-20 years no live fish such as trout, sterlet, ide, and speckled trout was supplied to the market.

Dishes prepared from live fish of the above species belong to the category of highly valuable dietetic products, especially recommended for persons suffering blood-vessel disorders and high blood pressure.

Besides breeding carp and other valuable fishes, it is also possible to breed water fowl, such as ducks. The practice of duck breeding shows that joint duck and fish breeding increases the farming profits. The mineral salts entering the ponds with duck droppings increase the productivity of the ponds by 30-40%, without special fertilization.

The breeding and fattening of fish can be done in rice paddies and network and irrigation canals. The practice of combined carp-and-rice growing has acquitted itself in Indonesia and Southern China.

The combined rice-and-carp farming in Southern China is resulting in a 10% increase in rice yields. The carp in rice paddies feeds on the larvae of various insects, particularly the malaria-carrying mosquito. The carp loosen the soil, resulting in better aeration of roots; carp excrement is an added fertilizer for the rice plants.

In the Chinese People's Republic one hectare of rice paddies yields 25-35 centners of carp weighing 1.5-1.8 kilograms.

In the Central Asian republics, particularly in the Uzbek SSR, there is a large network of canals and rice plantations which could produce plenty of fish.

Fish breeding on rice plantations should also be carried out in other republics.

In order to highly develop pond fish farming it seems to us practical that the Gosplan USSR, as well as the planning commissions of the Soviet Republics, commit the national economic councils of economic administrative areas to work out and submit suggestions for organizing large-scale fish farming for the needs of the market; and that the Ministry of Agriculture USSR carry out in 1958 a blanket census of water resources in kolkhozes and sovkhozes for the purpose of evaluating prospects for using them for fish farming and determining additional areas fit for the construction of ponds and fish hatcheries.

The All-Russian Scientific Research Institute for Pond Fish Farming must more intensively treat the scientific problems connected with the expansion of the development of pond fish farming and research on the biotechnics and organization of strongly profitable farms. This Institute should set up a laboratory for kolkhoz fish farming.

In order to provide an incentive for pond fish farming, we consider it practical and economically justifiable to permit the kolkhozes to include the fish grown and caught by them in the total sum of meat production per 100 hectares of farmland, at appropriate weight equivalents.

It is essential that the councils of ministers of the various republics discuss the problems of growing and selling live fish and the development of pond fish farming; that they outline concrete measures for breeding live fish in the coming years, so that every reservoir in our country can be used for fish breeding.