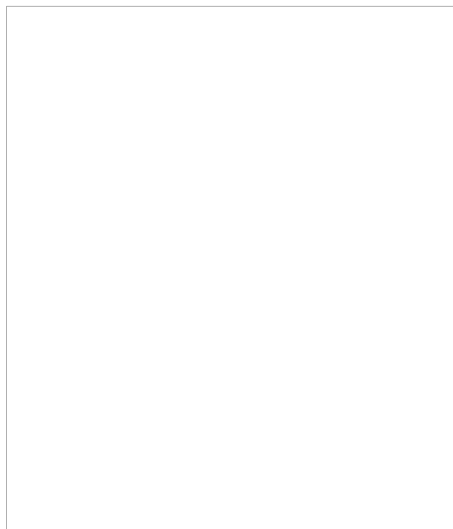


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Why No Fish?

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The problem of the present state of USSR fish production can only be explained satisfactorily if we first examine the past.

The Far East basin has always been of prime importance in the Russian fish industry, for the Okhotsk and Japan Seas abound in fish. The fish industry there has been retarded by three main ^{causes} ~~reasons~~: a) the remoteness of the area, b) the sparse population, and c) the absence of salt.

More favorable economic conditions were found in the Caspian Sea, where fish were abundant, and in this respect the Caspian was unequalled. Among fish found there were beluga (great sturgeon), sevryuga (acipenser stellatus), sturgeon, herring, Caspian roach, pike perch, carp, and bream. This abundance of fish was due to the rivers which run into the Caspian, mainly the Volga. According to the Academy of Science the Volga annually brought millions of tons of organic matter into the Caspian, including hundreds of thousands of tons of nitrogen, thousands of tons of phosphorous, and other elements which served as primary food for fish. The Caspian has many advantages as a spawning ground; the waters near the shore are shallow and therefore suitable for spawning. Fish industries of the Caspian were provided with high quality salt from the Baskunchak salt lakes. Large markets in Central Russia were also relatively close at hand.

The Azov-Black Sea basin was of great importance in the fish industry. Especially valuable fish such as vimba ^{and} Kerch herring are found in the Azov Sea. The Azov Sea was equal to the Caspian as a spawning ground.

The Baltic Sea was also important as a source of fish. There used to be sprat, Clupea ^{and} sprattus, sardines, and Kungka. The well-organized fish-canning industry of the Baltic exported canned fish, thus providing the Russian Treasury much income.

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In addition to the above areas, the Barents Sea, Lake Balkhas, Lakes Lovdoga, Onega and Chulyu, the mouths of the Ob' and Yenisey rivers, etc., were of great significance.

In 1913 the catch from all the above sources totaled 18,300,000 centners, which provided 107.6 centners of fish per thousand persons. The 1913 fish catch was equivalent to the slaughter weight of 11 million head of cattle produced that year.

The above fish catch from government reserves was stable, and supervised by well-organized government inspection techniques which made sure that the fishing areas were correctly exploited.

The Present Condition of the Fishing Industry

Collectivization was instituted/ after the liquidation of private farming and individual fishing was united into huge state "farms," under a special Ministry of Fish Industry.

The fish industry is well-equipped, and has over 7,000 motor fishing boats, more than 100 trawlers, many refrigerated cargo boats and towboats; it has its own radio network, airplanes for observing shoals of fish, fish canneries and other enterprises for the catching and processing of fish.

Good fishing equipment, however, did not guarantee a rise in the fish catch in the socialist economy; the fish catch not only is not rising, but is dropping year by year. Thus, only 15,000,000 centners of fish were caught in 1938, which means there were only 88.4 centners per thousand (persons) of population. The 1940 take of fish was even lower than in 1938, and this situation is continuing in the post-war years. We may therefore conclude that the fish catch for 1948 barely reached 12,000,000 centners, providing only 60.9 centners per thousand persons. The lowering trend was not stopped in 1949. According to data published by Gosplan USSR, fish production in 1949 was only 97 percent of plan for the first quarter, 85 percent of plan for the second quarter, and 91 percent of plan for the third quarter, or 95 percent of plan for the whole year.

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The results of the fish catch in home waters gives the following picture:

	<u>1913:</u>	<u>1938:</u>	<u>1948:</u>
Fish Catch in USSR (in millions of centners)	18.3	15.0	12.0
Amount available per 1,000 population (centners)	107.6	88.4	60.9
Catch Index	100.0	82.0	65.6
Consumption Index	100.0	82.2	56.5

In order to picture more fully the general condition of the meat supply in Russia we must observe the drop in livestock-raising.

Per One Thousand Population:

<u>Kinds of Livestock:</u>	<u>1916</u>	<u>1938</u>	<u>1945</u>	<u>1945 (in % of 1916)</u>
Cattle	647	372	248	53.0
Sheep and goats	880	600	364	40.2
Hogs	160	185	57	35.7

With such a drop in the fish catch and in livestock, it is natural that the meat supply for the population diminished.

As mentioned above, the Caspian was the main region for the fish industry up to 1930. Now the fish industry has moved to the East and North, with the main regions in the Far East being the Okhotsk and Japan Sea basins. The Far East supplies 25 percent, and the Caspian only 20 percent, of the fish catch, with the Barents Sea taking third place.

The decline in the fish catch is due to the following reasons:

1) The catastrophic drop in the Caspian fish catch was brought on by too intensive fishing. Results of intensive timber cutting in the basins of the rivers which run into the Caspian (the Volga with its tributaries and the Ural) immediately affected the inflowing fresh water and

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the food matter it carries. Thus, the water level of the Caspian, which was always subject to fluctuation, began to drop. According to Academy of Science data the water level dropped 50 centimeters during the past two decades, and the forage base for fish was reduced several times during that period.

The rapacious exploitation of fish is continuing together with the salination of the most productive area of the North Caspian. In the pre-Soviet period the state prevented intensive exploitation, but under the Soviets those interested in the prevention of exploitation of the fish reserves are in conflict with those desiring exploitation in the Soviet government. This situation has led to the intensive exploitation of all of the country's fish reserves; the results were less noticeable in those areas opening on oceans than in enclosed waters, such as the Caspian, Azov, and Aral Seas and the large lakes. These seas and lakes have become salty through constant exploitation, a condition difficult to remedy.

The fishing industry in the remaining enclosed seas (Black, Baltic, and White Seas) is in the same state as the Caspian.

The Outlook for the Fish Industry

After the Second World War the Soviet government attempted to restore the fishing industry to its earlier status by moving the center of operations to the Far East, e.g., to the Okhotsk and Japan Seas, especially since Japan is no longer a competitor in these rich waters.

The more productive of the two seas in the Soviet Far East is the Sea of Okhotsk, which is bounded by Kamchatka and the Mouth of the Amur River. The most important fish there are herring, gorbusha (humped-back salmon), and Siberian salmon.

Until recently the unloading and transport of the fish catch to fish plants was carried on in a very primitive manner; however, this region has been industrialized within the past few years. On the coast

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there is a network of mechanized plants. The entire coast, from Nikolaevsk on the Amur River to Penzhinsk Bay (Guba Penzhinskaya) and Ust'-Bolsheretsk is girdled by a chain of fishing kolkhozes which are well-equipped for fishing and transportation. We may judge the stage of mechanization reached by these fishing kolkhozes by taking one of them, the Northern Dawn (Rassvet Severa) Kolkhoz, located near Okhotsk; it has water-troughs, conveyor-belts, elevators, hoses, and is equipped to unload and transport freshly-caught fish. The kolkhoz also has a large fishing fleet.

The arid coast along the Sea of Okhotsk has very recently been changed into an industrialized fishing area. The labor problem has been solved by establishing concentration camps on Kamchatka and all along the Okhotsk coast and also by recruiting successful fishermen from the old fishing areas of the Caspian, Azov, and White Seas. Experienced fishermen were recruited from these areas and brought to the Far East for one or two seasons. They were then obliged to remain there "of their own free will" until the end of the current Five-Year Plan; many are thrown into the concentration camps for slight offenses. In this way tens of thousands of seasonal workers are assured for work in the Far East industries and kolkhozes.

One of the most difficult problems for the development of a large fishing industry for the Sea of ^(Okhotsk - that) ~~Okhotsk~~ of settling the Okhotsk coast, has been solved. Solved, but the price was the lives of many tens of thousands of Russian people who died and are perishing in the concentration camps from the severe climate, bad local conditions, and the excessively hard and dangerous work on the waters of the capricious Sea of Okhotsk.

The salt-supply problem is especially difficult and complicated for the Far East fish industry. In contrast to the Caspian and Azov fish industries which are located very near to the cheap and high grade salt of the Baskunchak Salt Lakes, the Far East does not have local salt,

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but must import it from European Russia. It is transported to the Far East by rail through the whole of Siberia, or from the Black Sea by ship around the continent of Asia. The distance over which the salt must be transported, and the same distance the fish products must be carried back (from the borders of Russia to the center) makes Far East fish excessively expensive on the domestic market.

Even with the fish industry's big fleet, its own planes, radio system and etc., production in the industry is dropping from year to year. Fish is appearing less and less on the domestic market. Once the most common and cheap food product of the population, it has become an expensive "deficit product." It is obvious that no matter how high machine production may be under free labor, when they are worked by forced labor as in the case in the fishing kolkhozes, they become much less productive and cannot be fully utilized. Fishing in Russian waters will regain its former place only when slave labor disappears in Russia and its place is taken by free labor.

Together with the (attempt to) revive the Caspian by diverting the Amu-Dar'ya into it, other methods have been proposed to revive both the Caspian and Azov Seas. The projects now under way which will provide shelter belts and reservoirs in the Volga, Don, and Ural basins are indirectly connected with the fish industry. The realization of this project, however, would require the expenditure of enormous sums over a long period of time. The shelter belt project will take fifteen years, and the doubtful results will probably not be felt for thirty to forty years. But it will be impossible to wait such a long time because of the increasing salination of the Caspian and the corresponding decrease in food matter for the fish. The Scientific Research Institute for the Sea Fishing Industry is at present trying to save the fishing industry by introducing new fauna to the region which would be suitable for Caspian fish. The institute has found a polychaeta nereyis worm with a

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high caloric value which is eaten by valuable fish in other seas. This worm was first brought to the Caspian in 1939-1941, during which time 63,000 nereyis worms were deposited at four points in the Caspian where they flourished. These worms were found in the stomachs of sturgeon as early as 1944, and by 1948 specialists found that they inhabited many thousands of square kilometers, according to the Soviet press the nereyis has become a permanent food for all benthic fish in the Caspian.

Another task which the Scientific Research Institute for the Fishing Industry USSR has undertaken consists in increasing the biological productivity of the reservoir. It has been observed that the larva of sturgeon perish en masse and only a few reach marketable age. In order to prevent this the Institute recommends that fishing enterprises build artificial reservoirs for two and three-month old sturgeon. The recommended food for them is small worms and crawfish. Soviet scientists have also been working on problems of the hybridization of fish. The Research Institute is also working on the breeding of new kinds of sturgeon adaptable for reproduction under new conditions.

The task of producing supplies of volba, bream, and pike perch was considered necessary by the Research Institute and is being carried out by the establishment of a special type of fishing on the river deltas. Predatory and waste fish must be kept out of the reservoirs by means of embankments and sluices. The very process of fish breeding is based on putting one or a few kinds of non-competitive fish together. This experiment, not generally practiced elsewhere, produced very good results. The number of young fish was thus increased by 5-6 times as compared with ordinary spawning grounds. The extent of this type of fishing in the North Caspian is not great, since they take up only about 1 percent of all the spawning grounds of the Volga delta.

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Such a situation exists more or less in organization of the fish industry on the Azov and Baltic seas.

By such means the Soviets are attempting to stop the drop in fish production and to restore supplies of fish in Soviet seas. I think, however, that unless the Soviets set up hydraulic works on a grand scale, they will not be able to remedy the situation by building a few reservoirs nor to restore the Caspian and Azov to their former position. Of course, the directors of Soviet fish industry have also come to this conclusion. In the USSR work has now been started on improving conditions of the water in the Caspian. The main job in this sphere is to change the course of the Amu-Dar'ya so it will run into the Caspian; work is being carried on in the Kara-Kum (desert) much of which has passed to the practical stage. The realization of the Amu-Dar'ya project not only presents great interest for the fish industry, but it also will integrate the Amu-Dar'ya into the river network of USSR, and will open up many new areas for cotton.

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