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FISH MARKETING AND CONSUMPTION SURVEY IN THE KYRGYZ REPUBLIC

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Cover photograph: (1) *A pond fish farm in Issyk-Kul,* (2) *Issyk-Kul Lake,* (3) *trout cage farm in Issyk-Kul Lake,* (4) *roadside processed fish stall in Issyk-Kul,* (5) *fish specialty shop in Bishkek,* (6) *fish stall in the market in Bishkek* (courtesy of FAO/Sunil Siriwardena).

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FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS
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PREPARATION OF THIS DOCUMENT

This document has been prepared by the FAO Project "Support to Fishery and Aquaculture Management in the Kyrgyz Republic" (GCP/KYR/003/FIN). It is based on the data and information collected from a countrywide survey on fish marketing and fish consumption in the Kyrgyz Republic carried out by the project to contribute towards Project Output 1.1: "People have daily access to safe and high quality fish and learn the health benefits through larger fish consumption", under Outcome 1: "Improved fish processing and marketing in the Kyrgyz Republic". Under this outcome, the project also launched a fish consumption promotion campaign and created small-scale primary fish processing units. This report presents the key outcomes of the above survey.

The countrywide survey was conducted, and the first draft of the report prepared, by the El-Pikir Centre for Public Opinion and Forecasting of the Kyrgyz Republic, based on a contract awarded by FAO via a competitive bidding process. The data and information presented are intended to assist with consideration of issues related to improving and implementing further activities to develop fish markets and the marketing and consumption of fish in the Kyrgyz Republic.

Ilibezova, E., Sharafutdinova, M., Kerimbekov, A., Invei, Y., Tenizbaeva, J., Ilibezova, L. and Siriwardena, S.N. 2013. *Fish marketing and consumption survey in the Kyrgyz Republic.* FAO Fisheries and Aquaculture Circular No. 1087. Rome, FAO. 65 pp.

ABSTRACT

A countrywide survey was carried out to assess the status, trends and issues related to fish production, marketing and consumption in the Kyrgyz Republic. The methodology adopted was a combination of structured questionnaires and one-to-one interviews that collected data from 1 167 respondents, who included fish farmers, key informants, and vendors/sellers and consumers of fish and fish products. The trends and issues that emerged from the survey results are presented and interpreted under the headings of fish production, trade and consumption. Since the country's independence, fish production in the Kyrgyz Republic has not realized its full potential owing to knowledge gaps in innovative technology and in good management practices in aquaculture and fisheries. The main constraints have been an inconsistent supply of quality fish seed, a lack of access to fish feeds and credit, and the absence of state support services. Farmers see opportunities to develop recreational fisheries in their aquaculture ponds. The main constraints to a developed marketing of fish are related to infrastructure and institutional management. Most markets are poor in terms of basic infrastructure and services for food handling. Other constraints in fish marketing are: a knowledge deficit in terms of modern sanitation techniques and quality control; management of hygiene among fish handlers; and markets being distant from fishers. A vigorous attempt to improve the system should begin by a thorough evaluation of the problems in the market and marketing system. The quality of unprocessed fish during transit from harvest to the consumer cannot be assured as the present system of inspection and quality control is restricted mainly to processed fish products. The price of fish is influenced by the price at which the intermediaries/wholesalers buy their fish and the amount of profit they intend to gain, and it is fixed through supply and demand interaction. The marketing inefficiencies also contribute to unregulated price margins. In relation to other commodities, fish prices have recently increased, and this is discouraging increased per capita fish consumption. The share of fish in the food basket offered by catering entities averages 19 percent, while the share of fish and fish products in the total food basket of a household amounts to less than 9.7 percent. The indications are that, to increase this share, fish prices must go down. The fish selling business is dominated by females, mainly in the post-harvest sector owing to their involvement in household-based small-scale fish processing. Exporters perceive low-interest credit and improved legislation to streamline export procedures, the elimination of corruption, and greater access to information (particularly on pricing policies, quality standards, and forecasted fish consumption and demand) as key to improving the export industry. The document includes a set of recommendations to address the issues that emerged from the survey related to fish production, marketing and consumption.

ACKNOWLEDGEMENTS

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This circular was edited by J. Richard Arthur for linguistic quality and technical content. For consistency and conformity, scientific and English common names of fish species were used from FishBase (www.fishbase.org/search.php).

For their active support throughout the process leading to this publication, the project further gratefully acknowledges: Dorjee Kinlay, FAO Representative, Kyrgyz Republic; Mohammad R. Hasan, Aquaculture Officer (FIRA) and Lead Technical Officer of the project; Dinara Rakhmanova, Assistant FAO Representative in the Kyrgyz Republic, and Samarbek Kuchukov, Director, Department of Fisheries, Ministry of Agriculture and Melioration. The publishing and distribution of the document were undertaken by FAO, Rome. Ms Tina Farmer and Ms Marianne Guyonnet assisted in quality control and FAO house style, and Ms Danielle Rizcallah assisted in formatting and in the final layout of the document.

EXECUTIVE SUMMARY

A countrywide survey was carried out to assess the status, trends and issues related to fish production, marketing and consumption in the Kyrgyz Republic. It employed structured questionnaires and interviewed 1 167 respondents who included fish farmers, fish and fishery product exporters and importers, fish and fishery product sellers, household and institutional consumers, and key informants. The survey outcome provides guidance to improve the marketing of fish both locally and for exportation, as well as to promote fish consumption in the Kyrgyz Republic. The survey also generated a database based on the information collected.

PRODUCTION OF FISH AND FISH PRODUCTS

The active phase of fish farm development in the Kyrgyz Republic occurred in 1996–2002 and 2005-2011 in Chui and Issyk-Kul Oblasts (provinces), respectively, but with little development elsewhere. Fish farms are operated by: (i) small-scale fish farmers who own or rent ponds and who sometimes also engage in small-scale processing of fish for sale, mainly in the local market; (ii) large-scale fish farmers that own ponds and process fish for export; and (iii) fish farmers with non-operational ponds who engage in the processing of fish that they buy elsewhere.

Between 80 and 90 percent of fish farm employees in the country are males, and the average number of workers is 6–7 on small-scale farms and 10 on large-scale farms. An average of 6 and 10 additional temporary workers are hired seasonally by small- and large-scale farms, respectively. The wages of fish farm workers vary by region, being highest in Chui Oblast and lowest in Talas and Naryn Oblasts. The wage of a permanent worker does not exceed KGS4 198,[1] and for a temporary worker it is KGS3 528.

The total number of fish species cultured on all fish farms is 13, and on any one farm it could vary from 1 to 4. Common carp and silver carp are the most commonly grown species in extensive practice, followed by grass carp, rainbow trout, whitefish and peled. According to the respondents, the criteria for selection of fish species for farming varies from fast-growing species (31 percent) to species able to withstand local environmental conditions (13 percent). Only 5 percent farmers are guided by profit in the selection of fish species. The annual production capacity of pond farms is 1–11 tonnes of fresh fish per year, while cage farms produce about 70 tonnes. Some 41 percent of fish farmers are affiliated with associations or cooperatives, this trend being highest in Issyk-Kul Oblast. Except for cage-fish culture farmers, most farmers do not use fish feeds manufactured based on a nutritionally balanced formula, and the feed used is largely dependent on the available feed ingredients, such as agricultural by-products.

Overall, 18 percent of farmers also engage in fish-processing activities, such as curing and drying (50 percent of such farmers), smoking (20 percent) and salting and marinating (10 percent). However, 42 percent of farmers do not have the basic equipment required for processing activities, such as tubs to store fish or freezers.

Of the fish produced, 82 percent goes out for sale, 8.6 percent is consumed by the fish farm household, and the rest is used to make payments in kind. The fish sales mainly take place at the farmgate to wholesale buyers (61 percent), and 27 percent of fish farmers sell fish in public places or to fish stores or wholesale points. The average selling price of fish by farmers is KGS90–266 per kilogram, with trout fetching the highest price, and European perch fetching the lowest. In the last three years, the price of fish has increased four to five times from farmgate to the final consumer. Some 91 percent of fish farmers believe they could increase their production provided that basic inputs are locally available.

Farmers believe that the government should provide support and specialized services to improve their production capacity and business sustainability. They also identify the need for a consistent supply of quality fish seed, nutritionally balanced fish feeds and access to soft loans.

[1] The Kyrgyz som (KGS) is the national currency of the Kyrgyz Republic. During the study year, the average conversion ratio was KGS47 to USD1.

TRADE

Export of fish and fishery products and inter-oblast trade

Export of fish and fishery products is in the hands of a few large fish farms and fish processors, which buy fish from wholesale traders. Fish is primarily exported to Kazakhstan. Most of the exported fish are in chilled or frozen form, while distribution within the country mostly involves frozen, salted, chilled, marinated or canned product.

On average, exporters employ 10–20 workers, two-thirds of whom are males. In additional, temporary staff can vary from 10 to 40 workers. The wages of permanent workers make up to about 50 percent of the cost of production, and the wages of temporary staff can be up to KGS5 000 per month per person. Exporters are generally equipped with refrigerated rooms, refrigerated showcases, freezers, storing tubs and special trucks for transportation of fish.

Some exporters also distribute fish within and outside their oblasts in the Kyrgyz Republic. Exporting and distribution within the country of fish and fishery products takes place 2–7 times per week, with quantities ranging from 0.2 to 15 tonnes of chilled fish and/or 25 tonnes of frozen fish. Supply of fish and fishery products within the country is mainly to specialized stores, large wholesale buyers, government entities, large trade centres, major grocery stores, retail outlets and markets. Major constraints faced by exporters include high taxes, lack of credit availability with affordable interest rates, and corrupt practices. Exporters perceive that low-interest credit and improved legislation to streamline export procedures, the elimination of corruption and increased access to information, particularly on pricing policies, quality standards, and forecasted fish consumption and demand, are key to improving the export industry.

Import of fish and fishery products

The few importers that exist in the country import fish mainly from the Russia Federation, with smaller volumes from Kazakhstan and China. Imports are mainly in frozen form (80 percent), with smaller volumes in salted, smoked and canned forms. Imports could reach 10 tonnes per month. Most of the fish imported into the country are Atlantic herring and walleye pollock. Almost all importers engage in fish processing, mostly salting, smoking or marinating. Importers employ 3–10 full-time workers, 60-80 percent of whom are males, while temporary workers range from 1 to 10 (all males or up to 50 percent females). Wages for workers are not related to gender or full-time or temporary status and reach up to KGS5 000 per month. Selection of fish suppliers by large importers is based on reputation, quality certification and ecologically friendly produce. Nevertheless, the small importers go by low prices and reputation, as well as by the quality of the fish as determined by colour and smell, and the availability of the option to return unsold fish. The price of imported fish fluctuates seasonally, being highest in July and lowest in November.

Large importers distribute products to all available outlets, including large and small buyers, as well as to wholesale buyers and households. Small importers mainly sell their products to specialized stores, shops and markets. Large importers have not observed any change in the business environment in the past year, while small importers have felt a deterioration in the business environment. All importers claim to abide by local product quality standards and are not aware of required international standards. As reported in the case of exporters, the main constraints for importers are the high rate of taxation and the unavailability of credit at low interest rates to invest in improvement of facilities and enhancement of the business.

Sellers of fish and fish products

One-third of sellers operate as small vendor stands or kiosks in markets, and 58 percent of them are in Bishkek and Issyk-Kul Oblasts. Some 93 percent of sellers are small enterprises with fewer than 10 workers, with 60 percent of the permanent workers being women. Women are paid 6 percent more than men. They also sell other food items in addition to fish. The sellers[2] sell various types of fish products, these being dominated by frozen (70 percent of sellers), salted (61 percent) and chilled fish (47 percent). Cured (36 percent), smoked (34 percent) and live/fresh fish (27 percent) are less often sold.

By percentage of sellers, the share of fresh and live fish in the fish assortment is 73.2 percent, followed by frozen fish (31.4 percent), and smoked, cured and chilled fish (21–16.3 percent). The share of fillet, minced meat, marinated fish and caviar does not exceed 9 percent. An assortment is typically limited to six species of fish; however, a greater number of species in an assortment is found in the city of Bishkek and in Chui Oblast, which have main large markets and fish shops. The most popular species of fish marketed are Atlantic herring (17 percent), common carp (14 percent), bream (9 percent), walleye pollock (8 percent), and pike-perch and rainbow trout (7 percent each). Other kinds of fish (more than 20 types) account for 38 percent of the market. In the past five years, the prices of all kinds of fish have increased annually, with catfish topping the list with an average price increase of 280.8 percent. The average price per kilogram of bream has increased in the past five years by 180.2 percent, while those fish species risen by from 137.4 to 156.1 percent. Sellers use refrigerated showcases (37 percent), freezers (23 percent) and walk-in refrigerators (20 percent) to store their products.

Fish sellers do not monitor or evaluate their business environment and, hence, do not notice any differences in the business environment compared with previous years. As a result, they are unaware of the competition that exists around them. Sellers use business stimulation methods such as discounts to frequent buyers, wholesale discounts and seasonal discounts. Other forms of incentive include selling products with the right to return unsold products, and provision of packaging and delivery services.

Up to 80 percent of sellers do not receive any marketing information and are not aware of any standards that must be maintained. They expressed their desire to receive information on competitors' pricing policies, market prices, crediting, taxation, and place and time of fish sale, as well as forecasted fish consumption and government policy on fish trade.

Buyers (institutional consumers)

All institutional buyers of fish and fish products are catering institutions (cafes, canteens and restaurants, kindergartens and boarding schools). The main fish product types bought by them are frozen (27 percent), live (14 percent), canned (13 percent) and chilled (10 percent), and the most popular fish are rainbow trout (16 percent), common carp (13 percent), and walleye pollock (11 percent). The share of fish in the food offered by these catering entities averages 19 percent.

As in the case of sellers, buyers do not monitor market prices of fish and fish products. Some 46 percent of institutional buyers expressed a willingness to increase procurement of fish and fish products if prices go down. Institutional buyers often face problems[3] with high wholesale prices (50 percent), poor quality of fish (35 percent), limited assortment (23 percent) and poor sanitation in sales outlets (8 percent).

Household buyers

The average number of members per household is 5.1, and the main sources of income in the households surveyed are agriculture (19 percent), civil service (17 percent), trade (13 percent) and pensions (10 percent).

Overall, 16 percent of households do not use refrigerators, and the average frequency of purchase of fish or fish products is once every 24 days. The average monthly income in the surveyed households is

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[2] Most sellers sell more than one type of fish product, and hence the total percentage of fish products adds up to more than 100 percent.

[3] Respondent buyers may face more than one problem and, hence, the total percentage adds up to more than 100 percent.

KGS10 833.6, and they spend on average KGS288 for each purchase of fish. The share of fish and fish products in the total food basket amounts to less than 9.7 percent. The level of fish consumption is as low as the consumption of pork (most people in the country do not consume pork for cultural and religious reasons). Household buyers prefer canned, live, chilled, frozen and salted fish. Most often, households buy common carp, herring and trout. Some 46 percent of households buy fish and fish products at a local market; 21 percent buy fish at a specialized outlet, 12 percent at a supermarket, and 10 percent at a specialized fish store.

Household buyers perceive fresh and live fish as a commodity that is inconvenient to prepare, and that chilled and frozen fish have a poor taste and high price.

FISH CONSUMPTION

Respondents agree that fish and fish products are good for their health (93 percent) and easy to digest (36 percent). Some recognize that fish is quick to prepare (30 percent) and has nutritional value (24 percent). Women, more often than men, perceive fish as a healthy and nutritious food. However, men perceive it as a commodity that can be prepared easily. There is an age-dependent preference for fish type. Common carp is preferred by all age groups, while silver carp, herring and trout are preferred by younger and middle age groups. Fish consumers tend to eat fish outside their homes in restaurants, cafes and canteens. Fried fish is preferred to fish salads, appetizers, and steamed and baked fish. There is a gender preference as to product type, with women preferring cooked fresh and live fish (39 percent) and men preferring canned (19 percent), salted (16 percent) or smoked fish (13 percent). According to respondents (41 percent), children prefer canned fish. The main reasons given for the low preference for dried, cured and salted fish are "hard texture", "no nutritious value" and "not healthy", and for frozen fish, "poor quality", "poor taste" and "additional time to defrost".

Consumers of fresh/live fish buy 2.4 kg per month, while chilled and frozen fish amount to 2.2–2.3 kg. According to the survey, the average per capita consumption by type of product varies from 0.47 kg for fresh and live fish to 0.04 kg for canned, fillet, minced and caviar. As women prefer fresh and live fish, this difference in consumption implies that women may consume more fish than men.

The number of respondents who noted increased consumption of fish and fish products was very small. However, 68 percent expressed a willingness to increase consumption of fish and fish products if the price is reduced. It also emerged that insufficient consumption of fish and fish products is primarily related to a lack of awareness of the benefits of consuming fish. Thus, there is a need for an awareness campaign to promote fish consumption.

RECOMMENDATIONS

The Department of Fisheries and Institute of Biology of the National Academy of Science should take the lead in closing the knowledge gaps in innovative technology and good management practices in aquaculture and fisheries to boost fish production to ease the prices of fish and encourage fish consumption.

The State should encourage potential entrepreneurs with an incentive package across the whole supply chain, including tax relief, duty-free import of equipment and inputs, and soft loans to enter into public-private partnerships to address the constraints in market structure, as this will improve the marketing efficiency and help regulate prices.

However, a thorough evaluation of the problems in the market and marketing system should be undertaken before any attempt to improve the system.

Strengthening fisheries associations and community organizations with market information (including price trends and pricing policies), and building their confidence in marketing management should be adopted as a long-term solution for price issues.

The present inspection and quality control system should be improved to international standards and should not be restricted to processed fish products but extended to transit from harvest to the consumer in order to ensure the quality of fish.

Considering the health benefits of fish consumption, the Health Promotion Centre of the Ministry of Health should launch a countrywide campaign to promote fish consumption and healthy ways of preparing fish for consumption. The Ministry of Education should include the health benefits of fish consumption in school curricula as a means of targeting parents to promote household fish consumption. In this regard, the government should also seek donor support to launch a suitable fish consumption promotion campaign.

To provide a conducive legal environment that will assist and protect stakeholders in the fish supply and marketing chain, the Department of Fisheries should assess the gaps in the relevant legislation and take action to remedy them.

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1. INTRODUCTION

The project "Support to Fishery and Aquaculture Management in the Kyrgyz Republic" (GCP/KYR/003/FIN) was launched with the financial assistance of the Government of Finland at the request of the Government of the Kyrgyz Republic and with support from FAO in the form of technical assistance. The project is based upon the justification that the drastic fall in fish production and consumption in the Kyrgyz Republic following the break-up of the Union of Soviet Socialist Republics has had a negative impact on poverty alleviation and food and nutritional security, and thus deserves special attention for priority development interventions, including appropriate policy and legal and institutional frameworks to revive and develop the sector and a demand-driven aquaculture production and marketing system, while ensuring the sustainable management of fisheries resources. The project aims, *inter alia*, to promote improvements in the market supply chain and processing of fishery products and to ensure the safety and quality of these products. Another project output related to the above goal is that: "People have daily access to safe and high quality fish and learn the health benefits through larger fish consumption". The present study was conducted to collect information, identify trends and issues, and provide recommendations and insights to improve the fish marketing system, the fish processing industry and national fish consumption in the Kyrgyz Republic.