

## Human dimensions in the Russian Federation – Effectiveness of ecosystem governance related to fishing

by Ekaterina Kurilova

Effective ecosystem governance is based on a balance between ecosystem sustainability, water bioresources conservation and at the same time economic, cultural, and spiritual satisfaction of the community. To maintain this balance requires an integrated understanding of how ecosystem changes affect human social systems, and how humans impact ecosystems.

Such things as expectations, needs and satisfaction level from ecosystem services of human communities should be taken into consideration. Social status and distance of communities from the ocean are just two of the important factors related to ecosystem services values.

One of the main difficulties is how to evaluate community expectations and demands from ecosystem services in large countries like the Russian Federation where different communities have various expectations and historical-cultural experiences.

The Russian Far East coast is mostly occupied by small cities and settlements, with the majority of the population in these settlements engaged in fisheries. These people and small ethnic groups historically consider the ocean and its products as a source for provision and survival, as fishing is an essential part of people's daily life. Conversely, people residing in big cities far from the coast are generally more concerned, and value more the tendencies in the economy, such as the development of the fishing industry, and coastal recreational and cultural services. People with higher education level have higher expectations. However, both coastal and inland communities are dependent upon conservation of marine biodiversity and an opportunity to obtain marine ecosystem products.



Fishermen in Aldoma Bay (photo courtesy of Okhotsk laboratory).

### *Main concepts of the fisheries legislation system in the Russian Federation*

Water bioresources (e.g., harvestable biomass) are regarded as a basic component of human well-being. Therefore, fisheries regulation is produced with the recognition that natural resources are an essential component and the basis of human activities and at the same time as an object of private ownership. Priority is given to the conservation and rational use of water bioresources. Thus, water bioresources can be used if human activity (harvest of living marine resources) does not damage the environment and water bioresources status.

The principle and practice of the fisheries regulation system in the Russian Federation is *to invite representatives of coastal communities and fisheries associations* to participate in the decision-making process if the decision might influence the status of water bioresources. Needs of the local and native population in the areas, where subsistence fishing is the means of securing the necessities of life, is taken into consideration. It is a priority to provide the natives with access to water bioresources fishing.

### *Fisheries legislation*

Fisheries legislation system is rather complicated in the Russian Federation. Fisheries in the country is mainly regulated by federal fisheries legislation (laws) describing the general regulation. All the laws of the Russian Federation that regulate fishing activities in the Russian EEZ comply with international legislative acts and agreements, in particular, the UN Convention on the Law of the Sea (December 10, 1982), relating to the conservation and management of straddling (transboundary) fish stocks and highly migratory fish stocks.

All fishery regulation laws are published in the media and available to all citizens. The central administrative authority for fisheries management in the Russian Federation is the Federal Agency for Fisheries. Its main functions are: governmental control and supervision in fields of fisheries and conservation of marine biological resources in the inland waters of the Russian Federation (with the exception of inland marine waters), state supervision of merchant shipping in terms of ensuring the navigation safety of fishing vessels in the fishing areas, public services and management of the state property in the fields of fisheries, monitoring, sustainable usage, studies, conservation, and reproduction of aquatic biological resources and their habitats, as well as aquaculture (fish farming), processing of fish and other

aquatic biological resources, production operations aboard the fishing fleet and seaports within the marine terminals for fishing vessels servicing.

On the basis of the Federal laws the subject executive bodies can issue legal texts on fisheries regulation and water bioresources conservation. At the regional level legislative councils may pass their own laws regulating relations between local authorities and fishing companies. However, regional laws and their provisions are developed in accordance with the Federal law on fisheries.

Detailed information on fishing gear requirements, fishing restrictions concerning spawning periods and special conservation areas are presented in Fishing Regulation documents issued for each fisheries basin. There are eight fisheries basins in the Russian Federation whose boundaries include watersheds located on the land territories of several regions – republics, oblasts, kraia, etc. (“oblast” and “krai” are analogs of the term “state”), adjacent territorial and inner marine waters, and EEZ areas. The Baikal fisheries basin includes freshwater bodies only. Fishing Regulation documents are elaborated in accordance with a particular fisheries basin peculiarities, taking into account the needs of the local populations. This document is also approved by the Federal Government, but its content is discussed at the Fishery Research Councils of the subjects of Russian Federation. Amendments to this document can be proposed by any citizen. They are collected by the branches of Federal Agency for Fisheries and discussed by the scientific research organizations and state authorities. These amendments are approved by the science councils of the territory institutes and Russian Federal Research Institute of Fisheries and Oceanography. After the amendments have been approved by these Councils, the Federal Government issues the Fishing Regulation Document. The primary aim of this document is conservation and management of water bioresources.

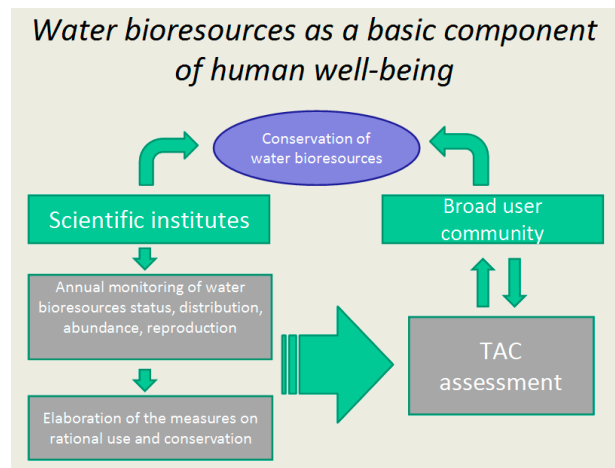
Fishery Research Councils (FRC) are established for each fisheries basin. Their main task is to elaborate the recommendations and proposals on conservation and rational use of the water bioresources. These councils are composed of the representatives of federal executive bodies, executive bodies of the subjects of Russian Federation, scientific research organizations, Fishery Basin Institutions for the conservation and restoration, and representatives of non-governmental organizations, including small ethnic communities of the North, Siberia and the Far East. Decisions of the Council are advisory. Management of the FRC facilitates the transparency of decision-making in the field of fishery regulation, amendments to the fishery legislation and development of broader discussions.

**TAC determination**

Total allowable catch (TAC) volume distribution is estimated in accordance with ecological, social and economic

factors. Two year forecasts and TAC are applied to the most valuable commercial water bioresources. For under-caught and little used species, so-called Permissible Catch is developed. However, some important fisheries, such as salmon, do not have a TAC estimate. The reason is that salmon returns are difficult to predict and often require adjustment of the catch depending on actual run returns. Increase or change in a TAC requires a series of formal procedures which may take up to several months. For salmon runs, the correction in allowed capture may need to be approved in a matter of days, before the massive run of salmon ends. Thus, it was decided to apply “Permissible Catch” regulation to salmon fisheries.

Information enabling total allowable catch volume estimation is developed by scientific research organizations, which conduct annual monitoring of water bioresources status. The evidence is discussed at organized public meetings with representatives of the community, fisheries associations and authorities. After being approved, the evidentiary materials are passed to the State Expert Commission for ecological examination. The Federal Agency for Fisheries then prepares the order on TAC followed by the order on quota allocation by different fisheries types.



*Engagement of communities into developing total allowable catch (TAC) levels of water bioresources, which include marine fisheries. (from a presentation by the author in S3 at the FUTURE OSM, April 2014).*

**Quota allocation**

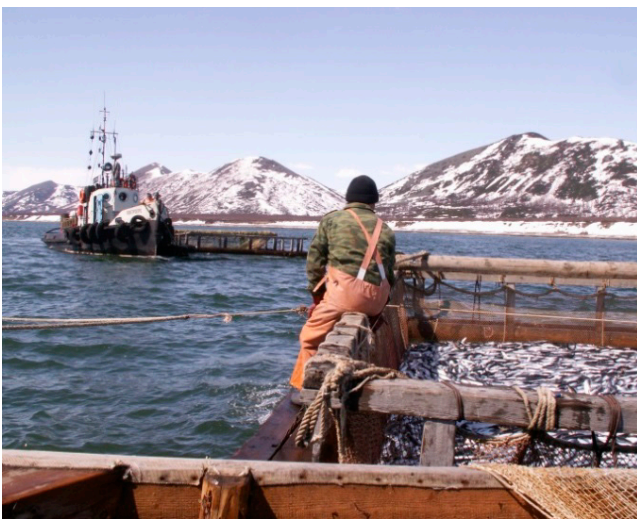
Salmon quotas are allocated among the companies with agreements for fishery plots (for 20 years). The catch volume (%) of quota allocated to the company in the previous years and economic indicators (such as taxes) are also taken into account. The catch share of the quota depends on the fishery plots. Allocation is made by the regional Commissions on regulation of harvesting the anadromous fish, which are composed of the representatives of fisheries enforcement organizations, fisheries associations, research institutes, and territorial administration officers. Preference is given to companies

that have proved successful in the past, as well as providing more jobs for local people.

Fishery plot allocations used to be provided for a 10 year period; now they are provided for 20 years. Fishery plots are allocated by the results of an auction. Applicants pay a fee, which remains in the budget of the region. In addition to considering a company's financial contribution, priority depends also on the performance characteristics of the company – employment of the local population, fishery capacity, bid size and development of the quotas allocated to the company for the past 4 years. If a specific fishery plot has not been used by a company for two years, or the quota was less than 50 % fulfilled, the government has the right to revoke the contract and put it up for auction.

This system encourages sustainable use of biological resources, because the company which has been allocated a fishery plot for 20 years is interested in the long-term sustainability of the fishery in this plot, compliance with environmental legislation, and developing positive outcomes of the company in order to continue getting quotas and fishery plots. However, in this approach to quota allocation, a new user (company) without a work history has almost no chance of getting commercial quotas. The system is designed to limit the number of users.

For salmonids, there are no fishing areas in offshore sea, only in the fresh and inshore waters. Auctions are used to allocate quotas on marine and fresh water species to which TAC is applied. The main criteria considered in allocating quotas are the history of the company, especially the amount of quota developed in the past. For non-anadromous species to which Permissible Catch rules apply, quotas are allocated by the State Commission according by applications, but they cannot exceed the Permissible Catch (volume). At reaching of the Permissible Catch limit, fishing is closed or catch limits may be increased.



*Fish transportation near Plosky Cape. (Photo courtesy of Okhotsk laboratory.)*

## ***Fisheries***

Fishing can be produced only for species whose catch is not prohibited. All species in general have allowable fishing, except species which are protected (e.g., species in the International Union for Conservation of Nature (IUCN) and Russian Red lists). The list of species for commercial and coastal fishing is elaborated by the federal executive body. The same legislative body adopts the list of the valuable and the most valuable species. Special permission (or license) issued in accordance with Fishing Regulation is generally needed to harvest fish (with the exception for recreational fishing by rod but not for all species, plots and periods). The license contains the list of allowed species and catch volume for fishing. Red list species, or species not allowed for catch (e.g., sturgeons), when captured in bycatch must be released. The following types of fisheries are distinguished.

### *Commercial fisheries*

It is a business activity on water bioresources fishing, processing, transportation, conservation and fish production. Fish products are to be delivered to the seaports in the Russian Federation or other ports defined by the Russian Federation Government. Allocation of quota shares is given to companies that historically fulfilled their prior quota agreements.

### *Coastal fisheries*

Coastal fisheries can be conducted on the fishery plots. It differs from the commercial fisheries by the coastal regional authorities' involvement in the fishery management including establishment of fishery areas and list of species for catch trans-shipment, landings and at-sea processing.

### *Fisheries for scientific and research purposes*

This type of fishery has the purpose of study and conservation of water bioresources. Scientific research organizations are allocated fishing quota on the basis of annual research plans. A special license is needed. The catch volume is determined in accordance with needs for a research purpose. All water bioresources caught by a scientific organization are to be used only for scientific purposes and should be released afterwards. If water bioresources are used for bioanalysis, they must be ground up afterwards. If scientific research is conducted on the vessel, fish production process is prohibited. Fisheries conducted for scientific and research purposes are regulated by the Federal laws.

### *Fisheries for educational and cultural purposes*

This type of fishery has the purpose of education and cultural activity. Research and educational organizations are allocated fishing quota on the basis of annual educational plans. The catch volume is determined in accordance with needs for these purposes. Water bioresources are to be used for educational purposes, such



as for displays at zoo exhibits and aquaparks. Fishery for educational and cultural purposes is regulated by the Federal laws.

#### *Fisheries for reproduction and naturalization purposes*

This type of fishery has the purpose of water bioresources conservation, aquaculture development, reproduction and naturalization. Fishing quotas are distributed in accordance with needs for these particular purposes on the basis of programs on artificial reproduction and naturalization activity.

#### *Recreational and sport fisheries*

Citizens are allowed to fish for free if it is not under the restrictions in accordance with Fishing Regulation Document. Captured organisms can either be released or not. Special permission is needed to fish in a water reservoir located on private property. Some areas are given to entrepreneurs or organizations in order to organize a sport fishing there. Recreational and sport fishing in some areas operated by entrepreneurs or organizations require paid licenses.

#### *Fisheries as the means of securing the necessities of life of native small ethnic communities*

Members of small ethnic communities may fish without a license or allocated fisheries plot as a means of securing the necessities of life.

#### **Conservation and management measures**

State monitoring is a system of regular observations on status, distribution, abundance, reproduction, fishery and conservation of water bioresources. Fisheries and conservation are important components of these observations. The data obtained during the monitoring are applied to the assessment of biological status and abundance of water bioresources, and for elaboration of the measures on rational use and conservation of water bioresources, including elaboration of the fishery restrictions.

Monitoring of water bioresources and fishing vessels is done by the Center for Fishery Monitoring and Communications, which collects, analyzes, stores and transmits data on location of fishing and research vessels (both Russian and foreign), provides satellite positioning control of fishing vessels, and submits information to federal authorities.

Russia has no state integrated programs based on social and economic studies directly related to marine ecosystem management, such as IFRAME (Korea) or IEA (USA) and PNCIMA (Canada). Scientific research fisheries institutes in Russia estimate the potential loss of economic value of ecosystem resources as a result of anthropogenic activity (e.g., construction of seaports, bridges, pipelines, etc.). Integrated analysis is needed to better understand social-cultural and economical issues of society and how these can be used to implement more effective management of marine ecosystem resources.

There is not a long history in the Russian Federation of conducting social surveys as a means of obtaining socio-economic data. In the last years the number of websites where you can express your opinion is increasing. An online survey of Russian residents using a site popular with fisherman ([www.fishnews.ru](http://www.fishnews.ru)) was conducted to inquire about key fisheries management and ecosystem issues. The results of the online survey of Russian residents indicated concern about the effectiveness of fisheries, including unlawful poaching of fish, and difficulty getting legally captured fish to markets and sold. Additional fish marketing might be suggested, as well as improvements in access to potential customers for fish.

#### **Conclusions**

The fisheries regulation system in the Russian Federation has many advantages, but also some disadvantages. The most obvious advantage is the combination of fish quotas, catch shares and 20 year fishery area allocations. This process provides favorable conditions for investments into the fishery sector and encourages quota users to be more responsible in relation to water bioresources and environmental legislation, because they are interested in long-term cooperation and sustainable fish resources in the allocated plots. At the same time, fishery sector on the most valuable commercial species are effectively closed (limited entry) to companies without a prior and long fishery history, as the past performance at meeting quota levels is one of the most important considerations in a quota distribution auction on TAC species. Users without a fishery history are welcome to participate in non-anadromous fisheries that are managed using the Permissible Catch criterion.

Aquaculture of marine species has not been properly regulated in the country and therefore was not very popular. Russia was not one of the top 15 producers of the 38 million tonnes of aquaculture fish in 2012 (SOFIA-2014, The State of World Fisheries and Aquaculture report). Not long ago, the Law on Aquaculture in the Russian Federation was established, and is expected to become the basis for aquaculture development in the country.

A disadvantage of the fishery legislation system in the Russian Federation is the rather complicated procedure for amending the law; that requires too much time for decision-making. It is almost impossible to alter TAC, for example, because of the complexity of the TAC approval process. That is why salmonid species were included in the Permissible Catch regulation. It was done for better fishery regulation of these commercially valuable species. Fisheries Regulation Documents that are issued for the eight fisheries basins lack flexibility. For instance, there is no mechanism to temporarily suspend implemented legislative acts.

While flexibility in management is a concern at the basin level, there are some examples of effective local fishing

regulation policy being implemented. For much of the coastal populations in the Okhotsk Sea area, fishing, especially on herring in coastal areas, is the only source of income. Heavy ice conditions in coastal areas in 2008 prevented access to the traditional and regulated fishing grounds, and herring catches plummeted. Only the estuarine

regions were sufficiently ice free to catch spawning herring, but these regions under existing regulations were not open to herring fishing. Through the joint effort of local communities, scientists and government, the regulations were changed to permit herring to be fished in the estuary since 2009, restoring basic income to local residents.



*Ekaterina P. Kurilova (katy\_k07@mail.ru) is a linguist and an assistant director in the Khabarovsk branch of TINRO-Center, Russian Federation. She works in an administrative department and deals with international cooperation of the Institute. Her particular interests focus on intercultural communication aspects, as well as the process of communication in general. She studies the problem of influencing public opinion via mass media, communicating science and social impacts of fisheries management in Russia. Since 2012, she has been a member of the PICES Section on Human Dimensions of Marine Systems.*