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Research Article

Monitoring the Fisheries Sector in the Republic of Moldova

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Abstract

The sustainable development of fishing activities requires surveillance and control measures on the part of the authorities, to monitor endangered species and to reduce the negative impact of risk factors. A presentation of the institutions responsible for fisheries management, the official regulations, the controls performed and the results obtained were made. The analysis of the natural fishery fund in the republic has taken into account the ichtyofauna of the main river basins and the effects of factors with negative influence on ecosystems. Overfishing and illegal methods, failure zones or periods of fishing have reduced the quantity and value of fish catches. On the background of the multiplication of fraud cases in recent years, control measures taken by the National Fisheries Service have led to an increase in the number of sanctions granted to offenders. The conservation of natural biological aquatic resources requires the adoption of unitary national strategies, the development of aquaculture and the continuation of monitoring and control measures for the regulation of the moldovan fisheries sector.

Keywords: Fisheries sector, fish fauna, monitoring, Moldavia

Introduction

Research over the last decade has highlighted new processes and trends in changes that occur in natural ecosystems. The main aquatic bodies where commercial fishing is practiced in the Republic of Moldavia are the cross-border rivers Prut and Nistru. These rivers are characterized by a diversified fish fauna, being fished about 30 tons of fish annually, except in 2016, when the Ministry of the

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Environment did not approve fishing quotas for scientific reasons.

Ensuring the protection of biological resources and regulation of fishing in the natural aquatic objectives of the Republic of Moldavia is the responsibility of the Fisheries Service, the Environmental Protection Inspectorate, the Public Control Units, and the institutions with attributions in the field, according to the law. Representatives of the responsible authorities implement and supervise fishing regulation actions, combat illegal fishing, include joint controls; the issue of regularization / decolonization / reprofile the riverbed that affects fish populations; and conduct scientific research to determine fish stocks. The Fisheries Service has specific responsibilities to ensure the protection of biological resources and the

Short Literature Review

Information on the activities of national bodies in the field of combating poaching and illegal fishing in the territorial waters of the Republic of Moldavia is quite brief and incomplete. There are some references, but these appear mainly in the internal documents of the State Fisheries Service, in the media or in some legislative papers. The Archives of the Fisheries Service, as well as the National Archive of the Republic of Moldavia, did not keep documents regarding the activity of the service during the years 1974-1991.

Official reports issued by the State Fisheries Service show that following the inspections carried out on the rivers, ponds and lakes in the Republic of Moldavia, specialized inspectors frequently detected people involved in illegal fish poaching. According to Article 114 (1) of the Code of Contravention, fines were imposed and the fish was recovered (Fisheries Service, 2018).

Legislative regulation to support the protection of aquatic fauna suggests that any way of translocating living aquatic organisms is out of the law. According to Bulat (2017), the regulation should be complemented by the introduction into the legislation of the provision that fish can be

regulation of fishing in natural water areas. The Environmental Protection Inspectorate may inspect, control fishing authorizations and penalize contraventions.

The right to carry out controls on the protection and rational use of aquatic biological resources may also have public control authorities.

Fisheries controls in border areas may also be the attribute of border police, in partnership with the Fisheries Service and partners of cross-border cooperation agreements.

For the authorization of aquatic basins, the marketing of live fish and fishery products in markets and the control tasks are assigned to the National Agency for Food Safety.

considered legally caught by rope fishers only when he has grasped the hook. In addition to the general fishing rules, illustrated species of fish species protected and prohibited for fishing, including sports, should be attached. Using these laws can protect rare species against errors. A relevant example is, for example, that plaque is much like the bat, and the law specifies the sizes that can be fished between the two species (minimum 30 cm plate and 15 cm minimum bat). Unlike these differences, the fisherman risks significant contraventions for each individual specimen.

Aspects regarding the protection of fishery resources and the regulation of fishing in the border areas are also proposed in the Romania - Moldavia cooperation agreements (National Agency for Fisheries and Aquaculture, 2016). At the intergovernmental level, common measures have been established for actions for the protection of fishery resources and the preservation of the equilibrium of the aquatic ecosystems in the Prut River and Stânca-Costesti Lake, as well as the implementation of the inspection and control actions during the period 2012-2016. Creation of some bilateral work groups to assess the fishing situation on the Prut and Accumulating Ponds, the holding of a 2016 meeting to discuss fishing quotas for 2017, the exchange of data and regular

information on fisheries and aquaculture legislation, and inspection and enforcement actions; control in these areas, and regular joint inspections may reduce poaching and protect the wildlife of the border area.

Toderaş et al. (2014) mention that the migration of the fish species between the Prut River and the adjacent lakes has been severely compromised lately, due to the fact that in the Prut riverbed, there was frequent use of electric fishing and other unacceptable processes. According to the author, the improvement in the situation found in recent years has been made

Materials and Methods

The information on combating poaching was collected from the Fisheries Service website and the Ministry of the Environment. The information regarding the researches carried out for the purpose of developing fish farming in the Republic of Moldavia was obtained from specialized materials. For the legislative field, the official information base of the Moldavian Government was consulted. In some cases, media data, specialized publications, or official press reports were used for additional data. The collected data were ordered, processed and presented graphically. The results obtained were compared with other data from the literature for an appropriate interpretation.

Legislation and official bodies in the fisheries sector in the Republic of Moldavia

The legal framework for the regulation of the Fisheries Fund, Fisheries and Fish culture is formed by the Constitution of the Republic of Moldavia, the laws, the resolutions of the Parliament, the decrees of the President of the Republic of Moldavia, the ordinances and decisions of the Government, the international treaties to which the Republic of Moldavia is a party, 149/2006, and other normative acts in the field. The legal framework on biodiversity conservation complements specific fisheries legislation.

The main legal regulation of the Republic of Moldavia on the fisheries sector is Law no. 149 of 08.06. 2006 on the Fisheries Fund, Fisheries and Fish culture. The law establishes the legal framework in the field of fisheries fund, fisheries and Fish culture, regulating the way and the conditions of creation and protection of the fishery fund, reproduction, growth and acquisition of hydrobionets, improvement of the aquatic fishery objectives and development of fish farming. This legal provision establishes the principles of the activity of the central and local public authorities empowered with the management of aquatic biological resources, the scientific cooperation with the Academy of Sciences of Moldavia and with the specialized institutions. There are also mentioned aspects regarding industrial and amateur fishing, protected areas, state bodies authorized to monitor and control the national fisheries sector (Parliament of the Republic of Moldavia, 2006).

In the framework of the pre-accession negotiations with the European Union, the harmonization of the national legislation also includes the correlation between the rules specific to the national fisheries sector and the European one (Center for Harmonization of Legislation, 2010). At the same time, the association agreement between the Republic of Moldavia and the European Union has created prerequisites for cooperation in various fields and allows connecting the political, economic and ecological systems of the Republic of Moldavia to the values and standards of the European Union.

In 1995, the Republic of Moldavia ratified the Convention on Biological Diversity, possible through the inspections of fishery inspectors who have been empowered since 2013 to apply preventive, control and sanction measures to counteract poaching.

Bulat et al (2014), note that the diversity and integrity of national aquatic ecosystems are seriously affected by overexploitation of fisheries resources as a result of illegal (poaching), undeclared (where catches are deliberately diminished and non-taxed) and unregulated (given the progress of the market of gear of fishing).

which aims at preserving biological diversity, the sustainable use of its elements and the fair and equitable sharing of benefits arising from the use of, and access to, genetic resources, taking into account all rights on those resources and through adequate funding for biodiversity conservation measures.

In cross-border areas (Prut and Nistru rivers), cross-border agreements on the protection of fishery resources are also applicable. Thus, the Cooperation Agreement to Ensure Environmental Protection and Rational Use of Fishery Resources and Regulation of Fishing in the Prut River, signed in 1 August 2003 by the Governments of Romania and the Republic of Moldavia, regulates the protection of fishery resources on the border areas (the Prut River and Costeşti Stânca reservoir). At the border with Ukraine, the fish stocks in the Nistru are permanently diminishing due to the regularization of the course through the construction of the Nistrean hydropower complex. Although the Agreement between the Government of the Republic of Moldavia and the Cabinet of Ministers of Ukraine on cooperation in the field of sustainable protection and development of the Nistru River Basin was signed in Rome as early as 29 November 2012, so far it has not entered into force because it has not been ratified by the Ukrainian side.

The Red Book of the Republic of Moldavia at the disposal of scientific circles, environmental decision makers, practitioners and public opinion present a basic document for deep biodiversity studies and development of actions for its restoration and preservation. The document, developed for the first time in 1978, consisted of 26 plant species and 29 endangered and critically endangered animal species on the territory of the republic. The latest edition of 2015 includes 180 plant species, 28 mushrooms and 219 species of animals (80 insects). In the field of aquatic resources, three species of endangered molluscs are mentioned, belonging to the Cuciurgan refring lake and the Lower Nistru river; a species of crustaceans found on the Lower Nistru and Cahul Lake; a species of Cystostomate, 13 species of fish, of the Prut and Nistru hydrographic basins; and sporadic specimens of the Amphibians in the Nistru and Prut valleys (Red Book of the Republic of Moldavia, 3rd Edition, 2015).

Short History of the Fisheries Service of the Republic of Moldavia

The Fisheries Service has begun to operate since 1918, but the Fisheries Archives and the National Archives of the Republic of Moldavia do not have documents reflecting its full activity.

The lack of interest in the development of this body led in the period 1918-2018 the successive passing of the service under the subordination of various Ministries and State Departments. Thus, in April 2018, the Republic of Moldavia activated a Directorate dealing with fish farming. According to the legislation of the Romanian Government, practicing fish farming in the basins of Basarabia was regulated on 24.07.1919 on the basis of a Royal Decree, which established the Basarabia Fisheries Directorate, subordinated to the Romanian Fisheries Directorate, with attributions regional control that operated until 1944.

The communist period led to the formation of a new body with attributions in the fisheries sector. „Совнаркомулуй" of RSSM and CC of CCP Moldavia (July 25, 1944), led to the establishment of the State Fisheries Watch, subordinated to the Ministry of Food Industry of the RMM. Since October 1953, the institution has been included in the Ministry of Food Industry of the MSSD. The provision of the Council of Ministers of MSS No.797 to the State Fisheries Pact (August 1956) laid the foundations of the Moldavian State Inspectorate for the Protection of Fishery Resources and Regulation of Fishing in the Waters of the RMM ("Moldgosrîbinspecţia") which, until 1957, has worked in the Ministry of Industry and Food of the RMM. From October 24, 1957 until March 22, 1961, "Moldgosrîbinspecţia" was part of the

Romanian Ministry of Agriculture, after which it was transferred to the State Committee of the Council of Ministers of RMM for the management and protection of water resources. Since 1964, "Moldgosrîbinspecţia" has been subordinated to the Fisheries Directorate to the Council of Ministers of the RMM until 1974, when it was subordinated to the Main Directorate for the Protection, Breeding and Regulation of Fisheries in the Eastern Black Sea Basin, headquartered in Odessa and directly coordinated by Moscow. After the dissolution of the Soviet Union, in 1991, the "Specialized State Fisheries Inspection" was included in the State Department for Environmental Protection and Natural Resources of the Republic of Moldavia, after which it became subordinated to the State Ecological Inspectorate under the name "Inspectorate Fisheries Service Ecological State", where it worked until 2009. From December 18, 2009, by the Government Decision no.847, the Fisheries Service was subordinated to the State Ecological Inspectorate, subordinated to the Ministry of Environment.

At present, the Fisheries Service is the specialized body of the Ministry of Environment, which, according to the Law no.149 of 08.06.2006 on the Fisheries Fund, Fisheries and Piciculture, exercises state supervision over compliance with the present law and other normative acts regulating fisheries, ensures the protection of resources fishery and fish breeding measures, combating poaching in the natural fishery aquatic objectives of the Republic of Moldavia.

The Ministry of Environment sets annually the periods of prohibition of fishing, at the proposal of the State Fisheries Service of the Republic of Moldavia. The order is valid for all species of hydrobion and is issued at least 5 days before the beginning of the prohibited period. Depending on hydrometeorological conditions, periods of prohibition may be modified by the Scientific Institutes and the Fisheries Service 20 days earlier or 20 days later.

The Environmental Protection Inspectorate, scheduled to be created in the next period by the Government of the Republic of Moldavia through the merger of the State Ecological Inspectorate and the Fisheries Service, will take over the control functions related to the protection of the environment and the use of natural resources from the State Ecological Inspectorate, the Fisheries Service and the Agency for Geology and Mineral Resources.

In order to ensure and protect the natural fishery resources, inspection actions are carried out on the banks of rivers, ponds and reservoirs in different localities of the country. The Fisheries Inspection, Regulation and Authorization Directorate consists of Fisheries Inspectorates established in different localities of the country (Table 1).

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Table 1: Disclosed Fisheries Inspections in different localities of the country

Piscicola Inspection - the Briceni-Edineț Sector	2 units
Piscicola Inspection - the Leova-Cantemir Sector	1 unit
Piscicola Inspection - Cahul Sector	1 unit
Piscicola Inspection - Soroca - Floresti Sector	1 unit
Piscicola Inspection - Cauşeni Sector - Stefan Voda	1 unit
Piscicola Inspection - Rîşcani Glodeni Sector	2 units
Piscicola Inspection - Nisporeni - Hînceşti Sector	1 unit
Piscicola Inspection - sector Şoldăneşti - Rezina	1 unit
Piscicola Inspection - Orhei - Criuleni Sector	2 units

Source: Authors, Data processed from the Ministry of Environment of the Republic of Moldavia, Fisheries Service (2016).

Fishing in natural water fishing grounds shall be granted to persons holding the fishing quota and fishing permit certificates issued by the issuing authority. The right to fishing is necessary to be limited to ensure the protection of the environment, including aquatic biological resources, especially during the period of reproduction and acclimatization of hydrobionets. For sporting and recreational fishing, rivers, ponds, reservoirs are allowed to fish only from the shore and in winter on the ice. Fishing for scientific, research and control purposes shall be permitted at any time of the year, anywhere, including the prohibition period, except for state-protected natural areas and prohibited areas for any fishery.

Control of fishing is done to determine the quantitative and qualitative composition of the fish population, the sanitary-epidemiological status of the fish and the purpose of regulating the fishery.

Zones and fisheries prohibited for fishing in the Republic of Moldavia

The total area of the state-funded nature reserves is 1894 thousand ha (5.61% of the national territory) and includes 312 objects and complexes. Protected areas, through their natural value and the low degree of human intervention on their territory, are the best examples and models for natural and semi-natural ecological systems. The legal framework for the Fisheries Fund, Fisheries and Fish culture in the Republic of Moldavia differentiates fishery protection areas according to their specifics: protection of reproduction; to protect the diversity of fish species reunified in an aquatic ecosystem and to protect fish in winter. For certain periods, fishing of certain fish species and other aquatic organisms may be restricted or prohibited in fishery protection areas which may prevent migration, reproduction or endanger the existence of fish stocks or which have the effect of restricting / barring the water course (cutting and harvesting plants, mud, sand and gravel extraction, ice collection) or river works, including cutting trees and shrubs. An accurate assessment of the sector must take into consideration its complex role for the national system, because of the potential food resources available to the public, the environmental values created, the generation and maintenance of wetlands and the biodiversity of fish, birds and fauna. The research shows that there are favorable conditions for increasing the national consumption of fish and for developing the domestic production, given the consumer preferences for indigenous fish species.

According to the decision of the Government of the Republic of Moldavia, the Registry of Protected Areas will be

developed for the record of the status of the protected areas, covering all areas within the river basin district for which special protection is required in accordance with legislation on the protection of surface water and groundwater, habitats and species that depend directly on water. Zones declared to be prohibited for fishing throughout the year, declared by legislative regulation for protection areas for aquatic resources are presented in Table 2.

Table 2: Prohibited areas for fishermen fishing throughout the year

No	Hydrographic basin	Limitations
1.	Nistru River, Prut River	500 m upstream and downstream
2.	The mouth of the spilling in the Prut River of the tributaries Larga, Vilia, Camenca, Delia, Răuț, Ichel, Bîc, Botna, Lăpuşna, Ciuhur	1 km on both sides of the mouth of the river
3.	The Turunciuc arm	On the water course, 5 km from the branch
4.	Nistru River (Naslavcea)	10 km downstream
5.	The dam of Dubăsari reservoir	Until the Chișinău-Poltava Bridge
6.	Cuciurgan reservoir lake	500 m N and S confluence and 300 m wide lake
7.	Prut River (Dubăsari Hydropower Plant Dam)	Upstream 380 km
8.	Danube river	Within the territory of the Republic of Moldova
9.	Beleu Lake	Forbidden across the entire surface
10.	Goieni Bay	Forbidden across the entire surface

Source: Authors, Data Processed from Fisheries Service, Fisheries Protection, Prohibited Areas/Periods (2016)

The legal framework of protection is represented by Law no. 1538 of 25.02.1998 on the state of natural protected areas. Legislative provisions do not extend to private ponds, local government or park lakes.

Protected Fish Species at National Level

More than 90 fish species are met in the Republic of Moldavia. Of the total fish species, the Red Book of the Republic of Moldavia accommodates 13 species of fish in the category of rare, vulnerable and endangered animals at national level, increasing by a species compared to the 2001 census. The digging of the Nistru River and the Prut River led to the destruction of the areas reproductive systems for some species of aquatic biological resources.

The accumulation basin at Novodnestrovsk seriously affects the fishery resources in the Nistru, causing the reduction of the fish populations of valuable species, especially of the reophyll, with the disappearance of worms, sturgeons, eels, gypsies and other species (Table 3).

Table 3: Aquatic species endangered at national level

No	Family	Species	Hydrographic basin
Fish			
1.	*Petromyzontiformes*	*Lampetra mariae*	Nistru
2.	*Salmonoformes*	*Hucho hucho L*	Prut
3.	*Umbridae*	*Umbra krameri Walbaum*	Nistru
4.	*Cyprinidae*	*Rutilus frisii Nordmann*	Nistru
		Leuciscus idus L.	Nistru, Prut
		Barbus barbus borysthenicus L.	Nistru
		Barbus meridionalis petenyi A. Risso	Nistru, Prut
5.	*Percidae*	*Zingel zingel L.*	Nistru, Prut
		Zingel streber Siebold	Prut
6.	*Lotidae*	*Lota lota L.*	Nistru, Prut
7.	*Acipenseridae*	*Huso huso L.*	Nistru
		Acipenser guldenstadti colchicus Brandt & Ratzeburg,	Nistru
		Acipenser stellatus Pallas	Nistru, Prut
Molluscs			
8.	*Veneridae*	*Hypanis laeviuscula fragillis Milachewitch*	Lower course of Nistru, Cuciurgan Refrigent Lake
		Hypanis colorata Eichwald	Cuciurgan Refrigent Lake
		Hypanis pontica Eichwald	Cuciurgan Refrigent Lake Lower course of Nistru
Crustaceans			
9.	*Mysidae*	*Paramysis baeri bispinosa Martynov*	Lower course of the Prut River
Cyclostomatae			
10.	*Petromyzontidae*	*Lampetra mariae Berg*	The tributaries of the upper and lower course of the Nistru River, Higher course at Prut
Amphibians			
11.	*Pelobatidae*	*Pelobates fuscus L.*	Sporadic in the Nistru and Prut valleys

Source: Author, Data Processed from the Red Book, 2015

According to statements by officials from the Ministry of Environment, national fisheries resources have fallen by about 90% over the past 10 years. The main causes of this decline are illegal fishing, irrational use of fish stocks, and pollution of aquatic basins, sand and gravel extraction, water pumping for different purposes, non-adoption or poor implementation of amelioration-fisheries measures.

Controlling reproduction and acclimatization of hydrobionets in the Republic of Moldavia

Artificial reproduction of hydrobionets is performed in order to restore endangered or rare species to natural aquatic ecosystems. These procedures are funded from ecological funds or from their own financial means. Acclimatization of hydrobionets is carried out by the scientific research institutes according to the legislation.

The network of aquaculture centers in Central and Eastern Europe (CEE) currently consists of 38 research institutions from 15 countries, of which 2 research institutions are from Moldavia (Zoology Institute of the Moldavian Academy of Sciences and Branch Chişinău and the State Enterprise for Research and Production of Biological Water

Aquaculture). The main goals of the network are to facilitate the transfer of research and the development of national fish farming; i.e. integration into the European Research Area. The Republic of Moldavia has considerable opportunities to cooperate with other countries, with the potential to develop the fisheries sector within the European and Neighborhood partnerships. The Republic is eligible for a number of transnational and cross-border programs: Joint Operational Program Romania - Ukraine - Republic of Moldavia (www.ro-ua-md.net); Transnational Cooperation Program in SE Europe (www.southeasteurope.net); Joint Operational Program, Black Sea Basin (www.blacksea-cbc.net).

In the Republic of Moldavia, the juvenile fish stock is not imported. The breeds and new lines are researched and created in the country and fully meet the needs of the Republic of Moldavia with fish stock. In this direction, economic contracts were concluded with the specialized units, with 20 documented recommendations on natural reproduction, cultivation of pure breeds, and growth of poppy material, industrial hybridization (Figure 1).

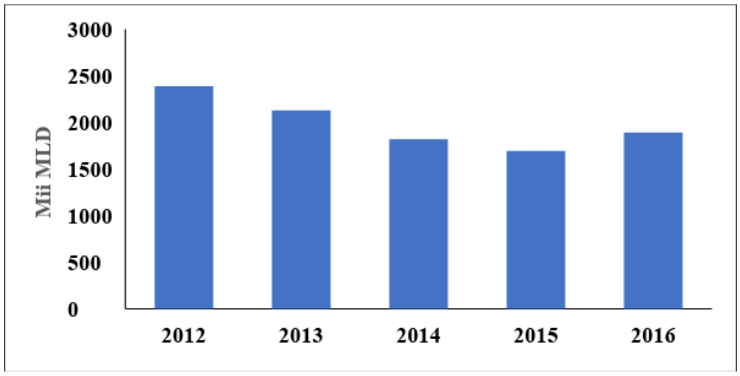

Fig.1: Dynamics of funding scientific research in fisheries (2012-2016)

Source: Author, Data Processed from Report on Scientific and Innovation Activity, 2016

In order to restore the population, popular fish species populating in the main hydrographic basins are periodically made, and they are suitable for these actions - the Dubăsari and Stânca – Costeşti Lakes, made by the State Fisheries Service. The project was funded by the FEN National Environmental Fund. A total of 1,290,000 MLD was allocated to run this project in 2016. The Dubăsari reservoir (Nistru river basin) was populated, with 11.3 tons of summer juveniles, contracted in advance from SA "Piscicola Gura Bîcului" and the lake Accumulation of the Costeşti-Stânca (Prut hydrographic basin) by the National Agency for Fisheries and Aquaculture Regional Branch of Moldavia with 2 million embryonic caviar from the genetic pool of Razelm Lake, Tulcea County.

Table 4: Popular fish stocks in the main natural water basins (2016)

No.	Species	The amount (Kg)	Specimens (Pcs)
1.	Carp	3,113	182,780
2.	Silver carp	2,310	140,512
3.	Bighead carp	2,265	135,606

Source: Authors, Data processed from the Ministry of Environment of the Republic of Moldavia, Fisheries Service (2016).

Combating poaching in the Republic of Moldavia

Currently, there are restrictions on industrial fishing on the Nistru River and the Prut River (including Costești-Stânca Lake). An alternative solution for fishing would be selective industrial exploitation, the capture of Asian cyprinidae for limited periods of time and only on the accumulation lakes Costești-Stânca and Dubăsari. As there are systematic poppy populations in these regions, a number of benefits can be gained over time in generating high quality fish production, biological ecosystem improvement, or effective regulation of the fish population. The argument can be supported by the fact that species such as novak, bloom and moth, although not targeted by ameliorative fishing, are characterized by high demand in the food market. Fishing for small-scale fish species (bleak, roch, bream) can cause negative consequences on the natural ecosystem resulting in the disappearance of juveniles and economically valuable fish species dependent on small-species food. The opinion of the specialists is that rational regulation of the fish stocks through the restructuring and optimization of the trophic networks is the reason why the repopulations of the affected areas were frequently carried out with species of raptors. With all the restrictions imposed, there are violations by economic agents or individuals, which can lead to major imbalances in natural ecosystems. The Fisheries Inspectorate, together with the Border Police, sanctioned several cases of fish poaching, inspecting the main river basins in the country, where people who have breached rules for the protection of fishery and fisheries resources have been frequently detected.

Statistics of the Fisheries Service contain data on the inspections carried out by the specialized inspectors since 2008. The most frequent deviations found, which led to the application of sanctions to the persons who have violated the law that went from fine to criminal files were the use of electricity for catching fish, use of monofilament nets or inappropriate sizes, and fishing in protected natural areas or forbidden periods (Table 5).

Table 5: Different fishery infringement during 2009-2012

Infringements	2009	2010	2011	2012
Electric fishing	20	20	40	20
Using prohibited nets	0	10	10	100
Fishing in protected areas	0	20	250	240
Pollution of domestic waste water	-	-	-	90
Fishing during prohibition	-	-	-	180
Nistru River Basin **Prut**	20 -	10 40	50 260	290 250
Total	20	50	310	540

Source Author, Data Processed from the Fisheries Service (2009-2012)

The dynamics of the checks made show the increase in the number of contraventions or the number of inspections carried out by the specialized inspectors during the analyzed period. Recently, controls have also addressed new issues related to surface water pollution by discharging household waste or the environment. Most offenses from the 1428 controls carried out in 2014 identified the main offense of fishing without a license (959 cases), and the use of prohibited nets (659 cases), reducing the incidence of using electricity for catching fish (13).

Due to the vigilance of the inspectors, the vast majority of the authors were caught at the scene (1281 cases) (Figure 2)

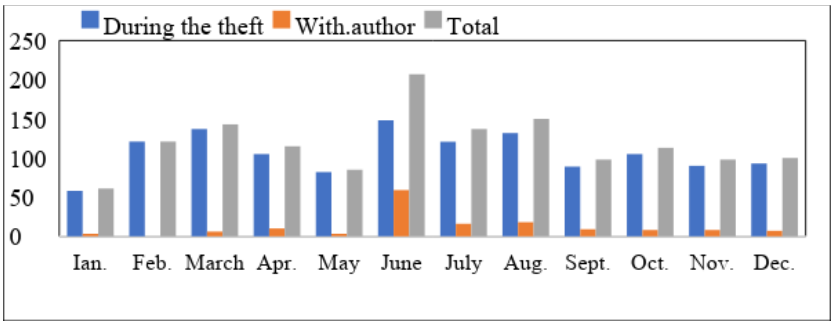

Fig. 2: the dynamics of controls carried out in 2014 by the State Fisheries Service

Source Authors, using Fishery Service Data (2015)

The year 2016 led to an increased activity of Fisheries Inspectors who acted in the main river basins (Table 6).

Table 6: Cases of fish poaching in the localities of the Republic of Moldavia (2016)

No.	Unit	Fisheries area	Contravention
1.	Slobozia Mare	Beleu Lake	6 mono filament nets with fish
2.	Anenii Noi – Dubăsari, Marcăuți	Nistru River	Nets
3.	Molovata	Nistru River	8 mono filament nets (500m)
4.	Cahul	Prut River	15 nets and fragments of nets
5.	Soroca-Florești, Briceni-Edineț, Rîșcani-Glodeni	Costești-Stânca Lake	Mono filament nets (800m) No allowances
6.	Șoldănești-Rezina, Orhei-Criuleni/ Anenii Noi, Căușeni-Ștefan Vodă	Nistru River	7 mono filament nets (500 m) 7 set-backs
7.	Criuleni	Nistru River	A monofilament net
8.	Dubăsari-Molovata	Nistru River (Dubăsari hydropower dam)	12 mono filament nets
9.	Raionul Orhei	Nistru River	42 set-backs, 4 mono filament fishing nets
10.	Raionul Rezina, Saharna/ Țipova Lalova	Nistru River (the Dubăsari reservoir)	64 set-baks
11.	Holercani, Vîșcăuți, Lopatna /Jora de Sus, Jora de Jos	Nistru River (the Dubăsari reservoir)	12 mono filament nets, 22 sail fishing, 4 rails, 2 bottom hooks with 20 hooks each.

Source: Author, Data Processed from the Fisheries Service (2017-2018)

In order to solve the problems in the field of protection of aquatic resources, a Strategy on Biological Diversity of the Republic of Moldavia was adopted and the amendment and supplementation of the Code of Conduct and of the Criminal Code on the tightening of fines and sanctions for the violation of the legislation in the field will be used. Border measures and mapping of boisterous, wintering pits of fish in natural aquatic objectives and their recording for appropriate monitoring will be carried out.

Conclusions

Due to illegal fishing, and in forbidden periods, the number of fish species has declined, and aquatic ecosystems have suffered. The protection of aquatic biological resources requires strict monitoring of fishing and strengthening existing sanctions for identified offenses. Fish populations in fish- breeding basins (Dubăsari, Costești-Stînca) with ameliorative purposes may have important effects on natural ecosystems. Education of citizens not to violate rules and laws

imposed by decisions and better cooperation between the regulatory bodies can foster sustainable development and conservation of aquatic biological resources.

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