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Corruption in the Management of Natural Resources (On the Example of Fish Resources)

Iana Savtcova [α] & Andrey Nikiforov [σ]

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I. Introduction

Recently modern Russian and international scientists have started to develop an understanding of how corruption in state structures interferes with law enforcement activities in natural resource management [8]. According to article 9 of the Constitution of the Russian Federation [13], "land and other natural resources may be in private, state, municipal and other forms of ownership." Therefore, the problem in question involves the role of the state as an important player in the management of natural resources.[4] Besides, several studies have shown that resource-rich countries, which economies are dominated by the resource sector, are generally characterized by the inefficient use of their natural resources, weak economic policies, maintaining undemocratic regimes, and corrupt economies.[13] [11] [14] The inability of such countries to sustainably manage their abundant natural to develop the country successfully and achieve achieving a high level of welfare for the population has been called a "Resource Curse." At the same time, many authors state that the level of corruption in countries with an undeveloped civil society and a weak political structure increases sharply.

The object of this research is fish resources that belong to the category of "the commons," as well as common pastures, forests, irrigation systems, etc. Thus, to restrict access to these resources is possible but quite complicated and the use of the asset by one individual (a resident of one village catches a dozen fish daily from a specific lake) excludes other individuals from using the same resource (no one else can get this particular dozen fish). The main difficulty in managing common resources is that in the majority of cases, the users cannot agree among themselves on the rules for using a shared resource, which leads to its overexploitation and imminent degradation. This problem is called the "tragedy of the commons."

The concept of the "tragedy of the commons" was created in 1968 by Garrett Hardin and was first published in the article in the journal "Science." He wrote about the dilemma that occurs when a group of users owns a limited resource. [3] Imagine fishers, each of whom catches a certain amount of fish from a single lake every day. One day, one fisherman decides that he is going to catch more fish to sell it and make more profit. Other fishers also come to a similar decision. After some time, the fishermen noticed that the fish stock was decreasing, and now each of them can not catch even the amount of fish that he used to have in the beginning. But, although all fishermen notice this, none of them is ready to reduce the catch, because everyone wants to get the highest possible profit. Acting this way fishers continue to damage the common resource until it is completely depleted. Thus, there is a conflict between individual and collective rationality, which is closely related to three crucial economic aspects: the "prisoner's dilemma" (the fundamental problem of choosing the best strategy in the game theory), the logic of collective action, and the "free-rider problem" (one person cannot be excluded from using the useful products that others create. In this case, everyone is tempted not to participate in creating the common good but only use it. [6].

Since the fishermen see only short-term benefits (increased profit), they consider it a rational strategy to catch as many fish as possible. But in the long run, it leads to the degradation of the resource, or the "tragedy of the commons." Nowadays, this problem is becoming more and more urgent, since the world's population is steadily growing, and our planet has its limits.

This problem is complex, indeed, but solvable. The winner of the 2009 Nobel prize in Economics E. Ostrom offered an innovative approach to this problem. She believed that the best way to preserve a shared resource is to entrust its management to users themselves in so-called collaborative community management [6]. Also, there are two traditional solutions to the problem - privatization and state regulation. However, O. Young, in his work, notes that state governments, in this case, are not perfect for several reasons [10]. First of all, the irrelevance of the selected policy in a particular situation. The second issue is the "institutional arthritis" - the inability of the state to react to

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the emerging situation calls because of bureaucratic procedures can last for months. And, finally, corruption and lobbying of the interests of specific groups is a challenge which affects the governments of many countries of the world.

According to the Corruption perception Index - 2017, 71% of the world's countries do not get even half of the points (0% is the highest level of corruption perception, 100% is the lowest). The first positions often take the countries with significant reserves of natural resources, including oil and gas. [1] (Fig. 1).

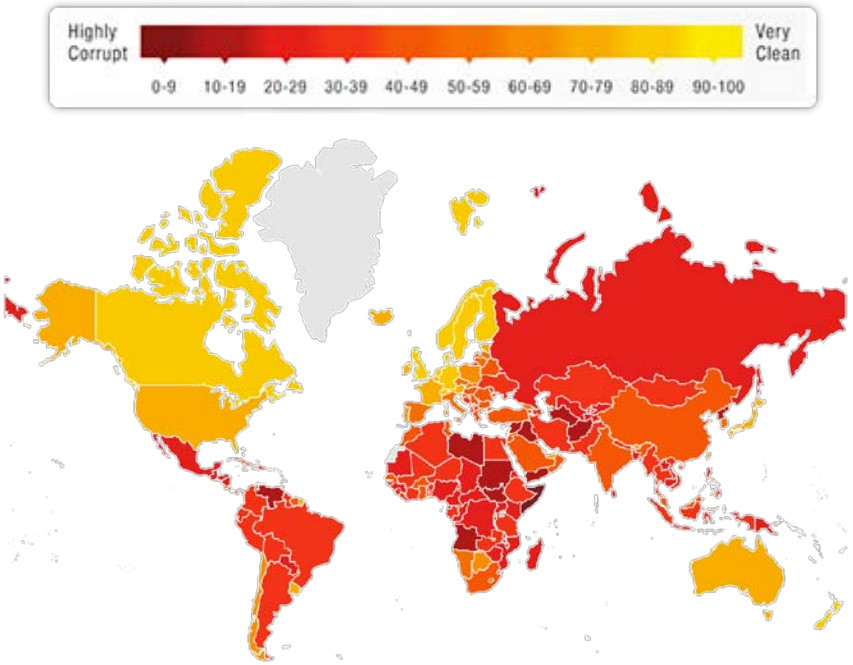


Figure 1: Corruption perception Index for 2017, *[2]*

The research interest in studying the relationships between society, power, corruption, and environment" is growing annually. However, it is quite complicated since corrupt transactions, by definition, are not registered in available databases [5]. Nevertheless, existing data provided by several anonymous interviews helps researchers to get nearer to explaining the phenomenon of corruption. The main questions here are: what is corruption? Is it an exception to the rule or a failure in the public administration system? Is it a cultural norm of some societies?

We chose fisheries as a vital resource for many developing countries and countries with economies in transition. In such states, fish is often known to be a main source of animal protein for low-income groups. However, the growing popularity of fish in countries with developed and rapidly developing economies (for example, the EU, the US, China, and Japan) creates an increased demand that fish stocks in these countries' waters cannot meet. As a result, growing markets are increasingly provided with fish imported from developing countries. In its turn, it leads to the fact that more intensive fishing is conducted by foreign and export-oriented domestic fishing fleets. Then, small-scale fishing, which has traditionally supplied seafood to rural communities, is forced to compete with export-oriented industrial fishing organizations without much support from their governments. Accordingly, we are talking about the competitive use of a common resource – fish which are subject to be extracted by local communities, private entrepreneurs as well as the state. [7].

The global trend reflecting the dynamics of marine fish stocks is the following: the number of sustainably used fish stocks increased from 50% to 60% (maximally sustainably fished) from 1974 to 2015, the number of underfished fish decreased from 40% to 7% (underfished), and overfishing increased from 10 to 33% (overfished) in different areas of the World ocean. (Fig. 2).

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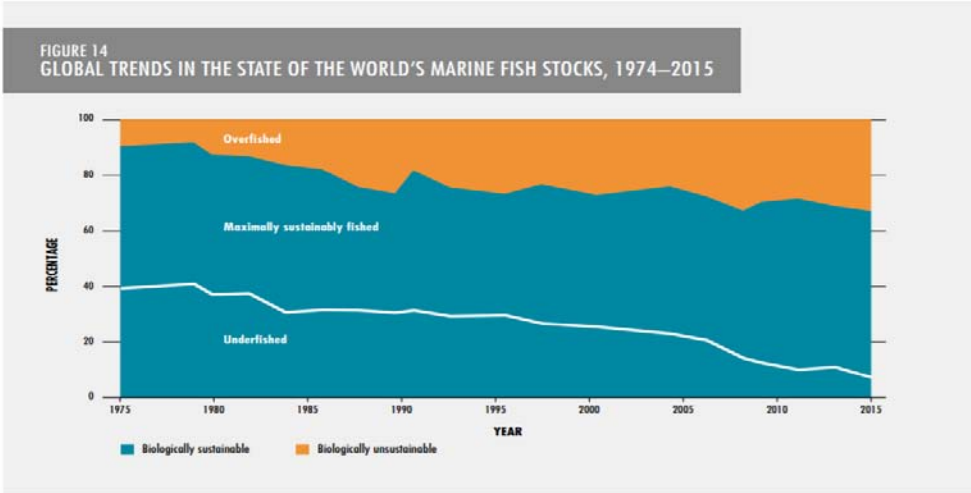


Figure 2: The ratio of fish resources according to the criterion of the intensity of use [2].

The statistics suggest the rules of fishing are not currently observed in one-third of cases (33%), which leads to a steady degradation of fish resource.

As a local example, let us consider a study conducted by a Swedish scientist, A. Sundström based on data from anonymous interviews with law enforcement officials in South Africa [9]. A. Sundström makes several critical comments on the problem of corrupted relations in the field of natural resources management. Firstly, connections between users of a natural resource and inspectors can be formed based on bribery: monetary and food. Secondly, one of the reasons for such illegal actions is the preexisting relationships between users and inspectors (for example, neighborhood or family connections). Ultimately, it becomes a prerequisite for the inspectors to perform their duties inadequately or even take part in illegal forms of fishing.

In this scenario, corruption becomes a part of a general social and legal system and turns into an informal but well-functioning institution: fishers pay bribes or use existing connections with police officers and the court to get removed of fines or to avoid punishment. Then corruption in the controlling organization becomes a norm, and those who control the work of inspectors support corrupt inspectors because they benefit from it. As a result, the employees trying to inform their chiefs about violations or bribe transactions of their subordinates turn out to be "whistle-blowers" themselves in their eyes. [9] Their "correct" behavior and their desire to report bribery from a formally functioning institution turns out to be "wrong" and harms their further professional career (Fig. 3).

De jure institutes	De facto institutions
Inspectors ensure compliance with rules and regulations	Inspectors are "blind" and corrupt. They receive bribes in the form of money, food, or "connections", so they react improperly to violations of nature-users, share information with them (for example, about the upcoming inspection), or participate in illegal fishing themselves
Fines are collected and remain in the enforcement system	Fines are "lost" in the form of bribes to judges and inspectors
Informing about illegal behavior of participants-inspectors or nature-users is taken seriously and does not involve a risk to the career of the person who informs	Informing about participants ' illegal behavior is ineffective and risky for the informant's career (and sometimes health)
Illegal actions of inspectors lead to sanctions against them	Illegal actions of inspectors lead to sanctions against them rarely since the top management itself is also corrupt and benefits from the existing informal relations

Figure 3. Corruption in the management of fish resources (Source: compiled on the base of the materials from the article Sundström, Aksel. 2015. Covenants with broken swords: Corruption and law enforcement in the governance of the commons, Global Environmental Change, 31: 253-262.)

Paul Robbins, an American researcher at the US Institute of geography, also notes that corruption is not only the result of disobeying formal rules but the result of inequality and instability in the social system [8]. Consequently, corruption in natural resource management leads to unsustainable use of resources and rapid degradation of the components of the ecosystem. Moreover, the likelihood of corruption rises when state officials have a monopoly on controlling the use of a resource. One striking trend is that corruption

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increases over time, as it becomes a part of local culture.

In conclusion, it should be noted that the existing link between corruption and the management of natural resources is of increasing interest to representatives of various sciences: ecologists, political scientists, and researchers of sustainable development. At the moment, it can be argued that this relationship is expressed primarily in the increasing degradation of the environment since corruption distorts the rules and their application in the management of common natural resources. State structures play a significant role in the management of common resources, as well as in the enforcement, coordination, and regulation of the use of such resources. Currently, however, resource-rich countries tend to have lower rates of economic development. This phenomenon is considered in modern scientific literature as the "resource curse." [13].

What is the reason for this phenomenon? Do weak institutions combined with natural wealth, generate corruption? Do corruption and weak institutions lead to overexploitation of natural resources? The answers to these questions are still to be found. However, the majority of researchers agree that corruption hinders the achievement of sustainable development goals as it inhibits economic growth, increases the number of poor people, reduces the country's investment image and affects the general well-being of the population.

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