*Non official translation*

**Materials to the report of the Russian Federation at the Seventeenth round of Informal Consultations of States Parties to the 1995 United Nations Fish Stocks Agreement (UNFSA), on the topic "Sustainable fisheries management in the face of climate change"**

1. Experience in sustainable fisheries management in the face of climate change.

The main stocks of highly migratory and transboundary fish species exploited by Russia include the following. In the Atlantic Ocean: the northeastern Arctic population of Atlantic cod (*Gadus morhua*) and the northeastern Arctic population of haddock (*Melanogrammus aeglefinus*) in the Barents Sea, the Norwegian spring-spawning population of Atlantic herring (*Clupea harengus*), northern whiting (*Micromesistius poutassou*). In the Pacific Ocean: stocks of Pacific cod (*Gadus macrocephalus*) and pollock (*Gadus chalcogrammus*) in the Bering Sea, Far Eastern sardine (*Sardinops melanostictus*), Japanese mackerel (*Scomber japonicus*), saury (*Cololabis saira*) in the deep waters of the Pacific Ocean.

Russia also exploits stocks of such species as horse mackerel (genus *Trachurus*) in the southeastern Pacific Ocean, African mackerel (*Scomber colias*), European sardine (*Sardina pilchardus*) and others in the central Atlantic Ocean, as well as other species in other areas. However, their total catch is significantly less than the catch of the species listed above.

In addition, Pacific salmon species such as pink salmon (*Oncorhynchus gorbuscha*), chum salmon (*Oncorhynchus keta*), coho salmon (*Oncorhynchus kisutch*), sockeye salmon (*Oncorhynchus nerka*) and chinook salmon (*Oncorhynchus tshawytscha*) should be considered as highly migratory species.

In all cases, fisheries management for such species is carried out by bilateral, multilateral or universal international agreements or commissions, that the Russian Federation is a member of, on the basis of aggregated scientific information and with all countries concerned participating. The issues of climate change impact on fish

stocks are certainly raised during the meetings of the commissions. However, to the best of our knowledge, climate indices or climate-oceanological information has not yet been included in any of the models used to assess the stocks of the species.

1-a. Assessment of climate change impact on fisheries.

In the Russian Federation, such issues are mainly addressed by Russian Federal Research Institute of Fisheries and Oceanography (VNIRO). For a number of years, VNIRO and its branches have been annually carrying out a complex of work in the field. In particular, since 2022, applied scientific research has been carried out on the topic "Assessment of climate change impact on the raw material base of the Russian fisheries".

One of the most important transboundary stocks in the Barents Sea is the Northeast Arctic cod, which inhabits the Norwegian and Russian EEZs. The warming of the Barents Sea waters over the last three decades has caused an expansion of the cod feeding area in the north and east directions. The expansion was caused, among other things, by an increase in the cod stock, which was at its lowest point in the early 1980s and reached its maximum in the first half of the 2010s. As a result, the fishing area grew, and most of it became located in the Russian waters.

Research of modern climatic changes impact on Russian fisheries species in the Far Eastern seas and the Northwestern Pacific Ocean has shown that as a result of climate change, both the intensity of feeding migrations (pollock and cod in the Bering Sea) and their direction (sardine, mackerel and saury in the Northwestern Pacific Ocean) can change. Current warming trend in the Bering Sea increases feeding migrations of pollock and cod, which reproduce in the eastern part of the sea, to the northwest, where it becomes attainable for Russian fisheries.

The modern period of growing Japanese sardine and mackerel stocks, with a slight decrease in the saury stock in the Northwestern Pacific Ocean, repeats the situation of the 1970s - 1980s. However, it takes place in completely different oceanological conditions due to the global warming. A fundamentally different fish

distribution is observed, which affects fisheries performance. The issue of relocating the saury fisheries to the high seas, where its main fishing stock is now distributed, is particularly acute, which requires the development of new approaches in the scientific support of the saury fisheries.

Current climatic trends (water warming) both in the Northern and Far Eastern fisheries basins influence the redistribution of many important commercial species (cod, pollock, Japanese sardines) with an increase in the share of their total stocks.

1-b. Ways to overcome the impact of climate change on fisheries.

We propose to consider the issue of adapting the industry and fisheries management mechanisms to new conditions. More accurate regional climate change forecasts are needed, which would allow to carry out model calculations of fish species and other aquatic biological resources distribution. Taking into account the duration of the processes under consideration (the typical time scale is decades), such information will, in most cases, be sufficient to make timely amendments to existing management documents.

1-c. Cumulative impact assessment.

As mentioned above, the fisheries management of almost all migratory and transboundary species exploited by Russia is carried out by international commissions or other organizations. Generally, this means taking into account all stock change factors, including fishing mortality, 1-2 years in advance.

1-d. Use of ecosystem approach and precautionary approach in the face of climate change.

In the face of climate change, the ecosystem approach is particularly relevant. We believe that any restrictions on fisheries should only be imposed if there is a rigorous scientific basis for their advisability. The precautionary approach can only be used in cases where there is a complete lack of scientific information.

2. Historical lessons, best practices and challenges for sustainable fisheries management in the face of climate change.

In the field of sustainable fisheries management, the main challenge is the complexity of changes in the ocean due to the climate change and the inability to predict changes with 5-20–years in advance at the current level of scientific knowledge. The feasibility of forecasts with 1-2 years in advance as well as with 20-30 years in advance is known to be significantly higher than the corresponding parameter of medium-term forecasts that are necessary to adjust fisheries management in the face of climate change. Thus, the best existing fisheries management practices imply only indirect consideration of habitat conditions impact on the stock of a particular species of aquatic biological resources.

3. Actions necessary to further strengthen sustainable fisheries management in the face of climate change, including those aimed at addressing the challenges faced by developing countries through capacity-building in accordance with Part VII of the Agreement.

In the face of climate change, sustainable fisheries management is advisable to be strengthened by further work on developing aquatic biological resources stocks assessment models that would take as input parameters not only biological and fisheries data, but also climatic and oceanological ones.