



UNITED NATIONS ECONOMIC COMMISSION FOR EUROPE

**COMMITTEE ON ENVIRONMENTAL POLICY
CONFERENCE OF EUROPEAN STATISTICIANS**

Joint Intersectoral Task Force on Environmental Indicators

Sixth session
Geneva, 30 October – 1 November 2012
Item 4 of the provisional agenda

**INDICATOR OF BIOLOGICAL DIVERSITY NOT COVERED BY THE GUIDELINES:
CATCHES OF FISH AND OTHER AQUATIC ANIMALS, PRODUCTION OF AQUATIC
ANIMAL PRODUCTS AND AQUATIC PLANTS**

Revised informal note by the secretariat¹

¹ Prepared with the assistance of Mr. Vladislav Bizek and Mr. Alexander Shekhovtsov, consultants to the secretariat in the light of the discussions held at the 5th session of the Joint Task Force.

I. Introduction

1. During the past decades various international and national organizations have been developing sets of indicators to measure and assess the status of "biological resources"² from both quantitative and qualitative points of view with particular attention given to biological diversity (biodiversity)³. Fish and other aquatic animals represent one of crucial components of biodiversity (e.g. from the total of 63,645 known species of vertebrates, the number of fish species is estimated at the level of 32,000, i.e. 50.3 %).
2. The European Environment Agency (EEA) has developed a set of 26 indicators SEBI (Streamlining European 2010 Biodiversity Indicators)⁴, from which one is related to fisheries and one to aquaculture⁵ (see Annex I). The EEA's indicator fact sheets on biodiversity constitute the basis for its environment reporting. The fact sheets are available at the website of the EEA⁶.
3. The Organisation for Economic Co-operation and Development (OECD) has developed a set of 7 indicators related to "Wildlife". The indicators are divided into three groups, one dealing with fishery and catches of other aquatic animals and plants (2 indicators - see Annex II). Data on OECD environmental indicators are available on the OECD website⁷.
4. The Food and Agricultural Organization (FAO) collects data on capture of fish and other aquatic animals, broken down by individual species and groups of species⁸ (see Annex III) and by the type of fishing area (inland fishing areas – rivers and lakes, and marine fishing areas – oceans and seas)⁹; see Annex IV. Information on principal aquatic plants is being collected, broken down into four groups (brown seaweeds, red seaweeds, green seaweeds and miscellaneous aquatic plants). All data is available in publications "Yearbook of Fishery and Aquaculture Statistics" (ftp://ftp.fao.org/FI/CDrom/CD_yearbook_2010/index.htm)¹⁰ and on the FAO website with dedicated data management software (FishStatJ: <http://www.fao.org/fishery/statistics/software/fishstatj/en>).

² "Biological resources" includes genetic resources, organisms or parts thereof, populations, or any other biotic component of ecosystems with actual or potential use or value for humanity (UN Convention on Biological Diversity - CBD, Art 2).

³ "Biological diversity" means the variability among living organisms from all sources including, inter alia, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part; this includes diversity within species, between species and of ecosystems (CBD, Art 2).

⁴ Halting the Loss of Biodiversity by 2010: Proposal for a first set of indicators to monitor progress in Europe, Technical Report No17/2007, EEA Copenhagen 2007.

⁵ 'Aquaculture' means the farming of aquatic organisms including fish, molluscs, crustaceans and aquatic plants.

⁶ www.eea.europa.eu/data-and-maps/indicators.

⁷ http://www.oecd.org/document/49/0,3746,en_2649_34283_39011377_1_1_1_1,00.html.

⁸ The FAO International Standard Statistical Classification of Aquatic Animals and Plants (ISSCAAP) defines 50 groups of species in 9 divisions (see <http://www.fao.org/fishery/collection/asfis/en> and <ftp://ftp.fao.org/FI/DOCUMENT/cwp/handbook/annex/AnnexS2listISSCAAP2000.pdf>)

⁹ The FAO CWP Handbook on Fishery Statistical Standards establishes 27 major fishing areas (8 inland areas and 19 marine areas) broken down into subareas, divisions and subdivisions, where appropriate (for detailed description see <http://www.fao.org/fishery/cwp/handbook/H/en>)

¹⁰ See <http://www.fao.org/docrep/016/i2727e/i2727e00.htm>

5. As none of indicators related to fishery has been included in the UNECE Guidelines for the Application of Environmental Indicators in Eastern Europe, Caucasus and Central Asia¹¹ by now, a new indicator “**Catches of fish and other aquatic animals, production of aquatic animal products and aquatic plants**” is proposed in the present document to harmonize further reporting on biodiversity related indicators across the pan-European region.
6. A detailed description of the new proposed indicator is given below.

II. PROPOSED ADDITIONAL INDICATOR

Catches of fish and other aquatic animals, production of aquatic animal products and aquatic plants

General description

- a) **Brief definition:** Catches of freshwater, brackish water and marine species of fish, crustaceans, molluscs and other aquatic animals, production of aquatic animal products (e.g. pearls, shells and corals) and collection of aquatic plants in major fishing areas (oceans, seas, main rivers and lakes). **Aquaculture (farming of aquatic organisms) is not included into this indicator.**
- b) **Unit of measurement:** Tons per year (fish, crustaceans, molluscs, aquatic animal products and aquatic plants) by species for each major fishing area. Number per year of individual species of whales and seals for each major fishing area.

Context – Relation to other indicators from the Guidelines

This indicator does not relate to any indicator from the Guidelines directly. However, indirect relation can be seen to the indicators on water quality.

Relevance for environmental policy

- a) **Purpose:** The indicator provides a measure of pressure on the aquatic environment and, indirectly, a measure of its state.
- b) **Issue:** Fish, aquatic animals, aquatic plants and other aquatic products provide an important resource for humans and for human activities. The question of sustainable use of this natural resource has become important after several cases of overfishing. Fish represent one of the most important parts of global biodiversity. From the total of 63,645 known species of vertebrates, the number of fish species is estimated at the level of 32,000 (50.3 %). The impacts on freshwater bodies, oceans, seas and coasts are driven by human activities such as fishing and catch or production of other aquatic animals and plants. As a result, the ecosystem services provided by freshwater bodies, oceans, seas and coasts are deteriorating,

¹¹ See www.unece.org/env/documents/2007/ece/ece.belgrade.conf.2007.inf.6.e.pdf.

including a decline in goods such as fish and other aquatic animals and plants. Fishing pressures in many fishing areas exceed sustainable levels and safe biological limits (SBL), and since 1985, there has been a general slight decline in fish catches. The capacity of fishing fleets has not been sufficiently reduced to be in balance with available fish resources. Other pressures include: by-catch; the destruction of sea-floor habitats; and illegal, unreported and unregulated fishing. Trends in global marine capture between 1950 and 2010 can be seen in Annex V.

c) International agreements and targets:

Global and regional level:

This indicator relates to the 1982 UN Convention on the Law of the Sea, the UN Convention on Biological Diversity (CBD), the Bonn Convention on the Conservation of Migratory Species of Wild Animals, the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) and the Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention).

Under the CBD, the Strategic Plan for Biodiversity 2011-2020 was adopted which requires that by 2020 all fish and invertebrate stocks and aquatic plants are managed and harvested sustainably, legally and applying ecosystem based approaches, so that overfishing is avoided, recovery plans and measures are in place for all depleted species, fisheries have no significant adverse impacts on threatened species and vulnerable ecosystems and the impacts of fisheries on stocks, species and ecosystems are within safe ecological limits.

The 2002 Johannesburg Plan of Implementation aims towards sustainable fisheries (article 31) and proposes several concrete activities.

Subregional level:

Under the framework of its Common Fisheries Policy, the EU has adopted and implemented a high number of legal acts regulating fishery. In 2011, the EU Council endorsed the EU Biodiversity Strategy until 2020, which is the EU's key instrument for reaching the new EU target for the protection of biodiversity in 2020. One of the main targets of this strategy is sustainable use of fisheries resources.

The 1995 Protocol concerning Specially Protected Areas and Biological Diversity in the Mediterranean to the Barcelona Convention for the Protection of the Marine Environment and the Coastal Region of the Mediterranean includes ban of catching in protected zones.

Methodology and guidelines

- a) **Data collection and calculations:** Annual statistics should be collected on nominal catches (landings converted to a live weight basis) of fish, crustaceans, molluscs and other aquatic animals, catches of whales and seals, production of aquatic animal products (e.g. pearls, shells and corals) and collection of aquatic plants. Data should be calculated by principal species killed, caught, trapped or collected for all commercial, industrial, recreational and subsistence purposes by major fishing areas using:
- The FAO International Standard Statistical Classification of Aquatic Animals and Plants (ISSCAAP);

- FAO Major Fishing Areas for Statistical Purposes. The Major Marine Fishing Areas are subdivided by subareas, divisions and subdivision using the internationally accepted standard practice.

Fishing and other activities relevant to this indicator by private persons should be estimated. Aquaculture (farming of aquatic organisms) is not included into this indicator.

- b) **Internationally agreed methodologies and standards:** The OECD Questionnaire on the State of the Environment (Wildlife, Table 2A). The Coordinating Working Party on Fishery Statistics (CWP) under FAO has developed the CWP Handbook on Fishery Statistical Standards (with 22 factsheets).

Data sources and reporting

Data are collected based on reporting by the companies dealing with catch of fish and other aquatic animals, catches of whales and seals, production of aquatic animal products and aquatic plants. Most EECCA and SEE countries, especially those with access to sea, report data annually to FAO for publication in its Fishery and Aquaculture Statistics.

References at the international level

- UN Convention on the Law of the Sea (<http://www.un.org/Depts/los/index.htm>),
- UN CBD Strategic Plan for Biodiversity 2011-2020: <http://www.cbd.int/decision/cop/?id=12268>,
- CWP Handbook of Fishery Statistical Standards (<http://www.fao.org/fishery/cwp/search/en>),
- The Johannesburg Plan of Implementation: http://www.un.org/esa/sustdev/documents/WSSD_POI_PD/English/POIToc.htm,
- Council Regulation (EC) No 2371/2002 of 20 December 2002 on the conservation and sustainable exploitation of fisheries resources under the Common Fisheries Policy,
- Directive 2008/56/EC of the European Parliament and of the Council of 17 June 2008 establishing a framework for community action in the field of marine environmental policy (Marine Strategy Framework Directive),
- Council Directive 83/129/EEC of 28 March 1983 concerning the importation into Member States of skins of certain seal pups and products derived therefrom,
- Our life insurance, our natural capital: an EU biodiversity strategy to 2020; SEC(2011) 541 final (<http://ec.europa.eu/environment/nature/biodiversity/comm2006/2020.htm>).

III. Annexes

Annex I: EEA Indicators

(see e.g. <http://www.eea.europa.eu/publications/environmental-indicator-report-2012>)

- SEBI 021: Fisheries: European Commercial Fish Stocks
- SEBI 022: Aquaculture: Effluent water quality from finfish farms

Annex II: OECD Indicators

(see e.g. <http://www.oecd.org/dataoecd/60/58/38106345.pdf>)

Wildlife

- 2A: Catches of Fish and other Aquatic Animals and Products
- 2B: Fishery Production

Annex III: The current International Standard Statistical Classification of Aquatic Animals and Plants (ISSCAAP) in use from 2000 – Basic classification

Code

DIVISION

Group of species

1 Freshwater fishes

- 11 Carps, barbels and other cyprinids
- 12 Tilapias and other cichlids
- 13 Miscellaneous freshwater fishes

2 Diadromous fishes

- 21 Sturgeons, paddlefishes
- 22 River eels
- 23 Salmon, trouts, smelts
- 24 Shads
- 25 Miscellaneous diadromous fishes

3 Marine fishes

- 31 Flounders, halibuts, soles
- 32 Cods, hakes, haddocks
- 33 Miscellaneous coastal fishes
- 34 Miscellaneous demersal fishes
- 35 Herrings, sardines, anchovies
- 36 Tunas, bonitos, billfishes
- 37 Miscellaneous pelagic fishes
- 38 Sharks, rays, chimaeras
- 39 Marine fishes not identified

4 Crustaceans

- 41 Freshwater crustaceans
- 42 Crabs, sea-spiders
- 43 Lobsters, spiny-rock lobsters
- 44 King crabs, squat-lobsters
- 45 Shrimps, prawns
- 46 Krill, planktonic crustaceans
- 47 Miscellaneous marine crustaceans

5 Molluscs

- 51 Freshwater molluscs
- 52 Abalones, winkles, conchs
- 53 Oysters
- 54 Mussels
- 55 Scallops, pectens
- 56 Clams, cockles, arkshells
- 57 Squids, cuttlefishes, octopuses
- 58 Miscellaneous marine molluscs

6 Whales, seals and other aquatic mammals

- 61 Blue-whales, fin-whales
- 62 Sperm-whales, pilot-whales

- 63 Eared seals, hair seals, walruses
- 64 Miscellaneous aquatic mammals
- 7 Miscellaneous aquatic animals**
- 71 Frogs and other amphibians
- 72 Turtles
- 73 Crocodiles and alligators
- 74 Sea-squirts and other tunicates
- 75 Horseshoe crabs and other arachnoids
- 76 Sea-urchins and other echinoderms
- 77 Miscellaneous aquatic invertebrates
- 8 Miscellaneous aquatic animal products**
- 81 Pearls, mother-of-pearl, shells
- 82 Corals
- 83 Sponges
- 9 Aquatic plants**
- 91 Brown seaweeds
- 92 Red seaweeds
- 93 Green seaweeds
- 94 Miscellaneous aquatic plants

Annex IV: FAO Major Fishing Areas for Statistical Purposes

INLAND

- 01 Africa - inland waters
- 02 North America - inland waters
- 03 South America - inland waters
- 04 Asia - inland waters
- 05 Europe - inland waters
- 06 Oceania - inland waters
- 07 Former USSR area - inland waters *
- 08 Antarctica - inland waters

MARINE

18	Arctic Sea
21	Northwest Atlantic
27	Northeast Atlantic
31	Western Central Atlantic
34	Eastern Central Atlantic
37	Mediterranean and Black Sea
41	Southwest Atlantic
47	Southeast Atlantic
48	Atlantic, Antarctic
51	Western Indian Ocean
57	Eastern Indian Ocean
58	Indian Ocean, Antarctic and Southern

61	Northwest Pacific
67	Northeast Pacific
71	Western Central Pacific
77	Eastern Central Pacific
81	Southwest Pacific
87	Southeast Pacific
88	Pacific, Antarctic

* The fishing area 07 ("Former USSR area - Inland waters") referred to the area that was formerly the Union of Soviet Socialist Republics. Starting with the data for 1988, information for each new independent Republic is shown separately. The new independent Republics are: Armenia, Azerbaijan, Georgia, Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan, Uzbekistan (statistics are assigned to the fishing area "Asia - Inland waters") and Belarus, Estonia, Latvia, Lithuania, Republic of Moldova, Russian Federation, Ukraine (statistics are assigned to the fishing area "Europe - Inland waters").

Annex V: Trends in Marine Capture



